MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

**O. M. BEĶETOV NATIONAL UNIVERSITY
of URBAN ECONOMY in KHARKIV**

Methodological guidelines
for independent work
on the subject

ENGLISH

(for 1-year full-time Bachelor degree students
majoring in 122 – Computer Science,
151 – Automatisation and Computer Intergrated Technologies)

Kharkiv – O. M. Beketov NUUE – 2018

Methodological guidelines for independent work on the subject English (for 1-year full-time Bachelor degree students majoring in 122 – Computer Science, 151 – Automatisation and Computer Intergrated Technologies) / О. М. Веketov National University of Urban Economy in Kharkiv; com. V.Yu. Buhaieva. – Kharkiv : O. M. Beketov NUUE, 2018. – 45 p.

Compiler V.Yu. Buhaieva

Reviewer O. L. Ilienko, Ph. D. in Philology

Recommended by the department of foreign languages, record № 1 of 30.08.2015.

Contents

UNIT 1
ENGLISH AS A GLOBAL LANGUAGE

Because English is so widely spoken, it has often been referred to as a "world language", the lingua franca of the modern era, and while it is not an official language in most countries, it is currently the language most often taught as a foreign language. Some linguists believe that it is no longer the exclusive cultural property of "native English speakers", but is rather a language that is absorbing aspects of cultures worldwide as it continues to grow. It is, by international treaty, the official language for aerial and maritime communications. English is an official language of the United Nations and many other international organizations, including the International Olympic Committee.

English is the language most often studied as a foreign language in the European Union, by 89% of schoolchildren, ahead of French at 32%. Among some non-English speaking EU countries, a large percentage of the adult population can converse in English — in particular: 85% in Sweden, 83% in Denmark, 79% in the Netherlands, 66% in Luxembourg and over 50% in Finland, Slovenia, Austria, Belgium, and Germany.

Books, magazines, and newspapers written in English are available in many countries around the world, and English is the most commonly used language in the sciences with Science Citation Index reporting as early as 1997 that 95% of its articles were written in English, even though only half of them came from authors in English-speaking countries.

This increasing use of the English language globally has had a large impact on many other languages, leading to language shift and even language death, and to claims of linguistic imperialism. English itself is now open to language shift as multiple regional varieties feed back into the language as a whole. For this reason, the 'English language is forever evolving'.

1. Match the words from the text to their meaning.

A	B
1. currently	**a.** to develop and change gradually over a long period of time
2. maritime	**b.** a formal written agreement between two or more countries or governments
3. treaty	**c.** in or moving through the air
4. aerial	**d.** at present
5. converse	**e.** influence
6. impact	**f.** talk
7. evolve	**g.** relating to the sea

2. Answer the following questions.

1. Why has the English language often been referred to as "a world language"?
2. What proves that English is the language most often studied as a foreign language?
3. What is the influence of English on other languages?

3. Read the text about the English language and complete it with the words from the box.

Prosperous interact common teach spread regional progress

India is a vast country with different languages in different parts of the country. These **1)**………. Languages differ from each other so much that it is not possible to communicate with people of other regions without a common language. India is on the road to become a strong and **2)**………. Nation in the world. For all this, there is need of a **3)**…….. language i.e., English. It is this language which is understood almost all over the region in addition to national language of Hindi, all schools and colleges **4)**…….. English and mostly have it as a medium of instruction.

This language is a store house of social and political knowledge. Hence, study of English language is of great importance for a developing country like India. Without knowledge of this language, our technicians, mechanics and engineers cannot **5)**…….. .

India is a peace-loving country and wants to **6)**……. The same message to all countries of the world. The other countries also take interest to understand and know this policy of India. English is such a language having an international status and can provide the best medium to **7)**……. With outside world. If India is to utilize these opportunities, and expand its universal view point, then English is the only language which should be learnt by all of us.

4. Try the quiz. How much do you know about the world's major languages?

1. Approximately how many languages are there in the world?
a. 650   **c.** 65.000
b. 6.500   **d.** 650.000

2. Order the world's top ten languages according to the number of native speakers.
a. Portuguese   **f.** Arabic
b. Chinese   **g.** Japanese
c. Russian   **h.** German
d. English   **i.** Spanish
e. Hindi   **j.** Bengali

3. How many people speak English as a first, second or third language?
a. 0.5 billion   **c.** 1 billion
b. 1.5 billion   **d.** 2 billion

4. In a recent survey how many Europeans said everyone should speak English?

a. 49%   **c.** 89%

b. 69%   **d.** 99%

5. How much of the world's e-mail is written in English?

a. 50%   **c.** 70%

b. 60%   **d.** 80%

6. How many languages 'disappear' every year?

a. 2   **c.** 10

b. 5   **d.** 20

UNIT 2
HIGHER EDUCATION IN BRITAIN

When higher education of Great Britain is being spoken about the University education is generally meant. But in fact there is a considerable amount of past-school education, including part-time as well as full-time studies carried on in technical colleges, teacher training colleges, art colleges, institutes of adult education and so on.

Higher education, consisting of degree and equivalent courses, has experienced a dramatic expansion. The number of higher education students in Britain almost doubled between 1979 and 1993 to 1.5 million, so that today around 30 percent of young people enter full-time higher education.

There are about 90 universities, which enjoy academic freedom. Every University is autonomous and responsible to its governing body. The regulations differ from University to University. While there are similarities between them, they all differ from Oxford and Cambridge, where is a number of separate colleges, each with their own regulations and courses of studies. The new, so-called "red-brick" Universities are divided into various faculties: Faculty of Arts, Faculty of Science, Faculty of Social and Economic Studies, etc.

University degree courses are generally being taken for three, four or even five years. University teaching combines lectures, practical classes and small group teaching in either seminars or tutorials. The last is a traditional feature of the Universities of Oxford and Cambridge.

First degree courses are mainly full time and usually last three years, with longer courses in subjects such as medicine. Universities offer courses in a broad range of academic and vocational subjects, including traditional arts subjects, the humanities, and science and technology. The government encourages young people to choose degree courses in subjects, or combinations of subjects, that provide the knowledge and skills required by a technologically advanced economy.

Over 95 percent of students on the first degree and comparable higher education courses receive government grants covering tuition and accommodation and other maintenance expenses. Parents also contribute, the amount depending on their income. In addition, students can take out loans to help pay their maintenance costs.

1. Complete the following sentences.

1. The post-school education is carried on in _____.
2. Higher education, consisting of degree and equivalent courses, has experienced __.
3. Every University is autonomous and responsible to _____
4. University teaching combines _____.
5. Universities offer courses in _____.
6. The government encourages young people to _____.
7. Parents also contribute the amount _____.

2. Decide if the following statements are true or false.

1. Part-time and full-time studies are carried on only at universities.
2. The number of higher education students has increased recently.
3. Every University is autonomous and responsible to its government body.
4. There are great differences between various Universities.
5. University degrees are generally being taken for four years.
6. Lectures and practical classes are traditional for teaching at Oxford and Cambridge.
7. First degree courses are both full-time and part-time.
8. Universities offer courses in a broad range of academic and vocational subjects.
9. All students on the first degree receive government grant.
10. Students can take out loans to help pay their maintenance costs.

3. Answer the following questions.

1. What is the system of higher education in Great Britain?
2. What does higher education consist of?
3. What can you say about the increase of higher education students' number?
4. How many Universities are there in Great Britain at present?
5. Who is every university responsible to?
6. For how many years are university degree courses taken?
7. What does university teaching combine?
8. Where is a traditional feature of Cambridge and Oxford?
9. How many years do the first degree courses last?
10. What courses does University offer?
11. Who does the government encourage?
12. Why does the government encourage young people?
13. What do students on the first degree receive?
14. What do parents contribute?
15. What can students take out to help pay their maintenance cost?

UNIT 3
BEST UNIVERSITIES IN THE UNITED STATES 2018

California is the most represented state among the best American universities with 13 universities followed by 11 universities in New York, 11 universities in Texas and nine universities in Massachusetts.

The universities at the very top of the ranking are concentrated in these popular destinations that are well known for their higher education opportunities; the top five are based in California, Massachusetts and New Jersey.

Top 5 universities in the US

=1. California Institute of Technology (CalTech)

Relative to the tiny size of the student population, CalTech has an impressive number of successful graduates and affiliates, including 34 Nobel prizewinners, six Turing Award winners, five Fields Medalists and a number of national awards.

There are only approximately 2,000 students at CalTech, and the primary campus in Pasadena, near Los Angeles, covers 124 acres. Almost all undergraduates live on campus.

Across the six faculties there is a focus on science and engineering.

In addition to Nobel laureates and top researchers, the CalTech alumni community also includes a number of politicians and public advisers, particularly in positions that deal with science, technology and energy.

All first-year students belong to one of four houses as part of the university's alternative model to fraternities. There are a number of house traditions and events associated with each house.

The university has the highest proportion of students who continue on to pursue a PhD, and the trope of the CalTech postgraduate has filtered into popular culture; all the main characters in the TV comedy *The Big Bang Theory* work or study at CalTech.

=1. Stanford University

Based right next to Silicon Valley – or Palo Alto – Stanford has had a prominent role in encouraging the high-tech industry to develop in the area.

Many faculty members, students and alumni have founded successful technology companies and start-ups, including Google, Snapchat and Hewlett-Packard.

In total, companies founded by Stanford alumni make $2.7 trillion each year.

The university is often referred to as "the Farm", as the campus was built on the site of the Stanford family's Palo Alto Stock Farm. The campus covers 8,180 acres, but more than half of the land is not yet developed.

With distinctive sand-coloured, red-roofed buildings, Stanford's campus is thought to be one of the most beautiful in the world. It contains a number of sculpture gardens and art museums in addition to faculty buildings and a public meditation centre.

As might be expected from one of the best universities in the world, Stanford is highly competitive. The admission rate currently stands at just over 5 per cent.

Of the 15,000 students – most of whom live on campus – 22 per cent are international.

3. Massachusetts Institute of Technology (MIT)

A long-standing rival of CalTech, MIT also cultivates a strong entrepreneurial culture, which has seen many alumni found notable companies such as Intel and Dropbox.

Unusually, the undergraduate and postgraduate programmes at MIT are not wholly separate; many courses can be taken at either level.

The undergraduate programme is one of the country's most selective, admitting only 8 per cent of applicants. Engineering and computer science programmes are the most popular among undergraduates.

Thirty-three per cent of the 11,000 students are international, hailing from 154 different countries around the world.

Famous alumni include astronaut Buzz Aldrin, former UN Secretary General Kofi Annan and physicist Richard Feynman. Graduates are prevalent throughout science, politics, economics, business and media.

4. Harvard University

Harvard University is probably the best-known university in the world, coming top in the *Times Higher Education* reputation rankings most years.

It was founded in 1636, and is the oldest higher education institution in the US.

There are approximately 20,000 students enrolled, a quarter of whom are international. Although the cost of tuition is expensive, Harvard's financial endowment allows for plenty of financial aid for students.

The Harvard Library system is made up of 79 different libraries and counts as the largest academic library in the world.

Among many famous alumni, Harvard can count eight US presidents, about 150 Nobel laureates, 13 Turing Award winners and 62 living billionaires.

Unlike some other universities at the top of the list, Harvard is at least equally as reputed for arts and humanities as it is for science and technology, if not more so.

5. Princeton University

Like Harvard, Princeton is a prestigious Ivy League university with a history stretching back more than 200 years.

Princeton's distinctive social environment includes private "eating clubs" – which function as both social houses and dining halls. Many of the clubs are selective and competitive, but others simply require undergraduates to sign up.

There are fewer than 8,000 students enrolled at Princeton, and just over a quarter are international.

Princeton's campuses, in New Jersey, are located about an hour away from both New York City and Philadelphia.

Degree courses have strictly specified requirements. All students are required to do independent research as part of their degrees, and some must take a foreign language course.

The application process is highly selective. Unlike most US universities, Princeton does not now offer an early decision application route.

Renowned Princeton alumni include US presidents, astronauts, businessmen, Olympians and numerous award-winners. Physicist Richard Feynman attended as a graduate student, as did mathematicians John Nash and Alan Turing.

1. Look through the text quickly. Match the universities (1-4) to the descriptions (a-d).

1. California Institute of Technology
2. Harvard University
3. Princeton University
4. Massachusetts Institute of Technology
5. Stanford University

a. All the main characters in the TV comedy The Big Bang Theory work or study at this university.
b. The university is based next to Silicon Valley.
c. The university alumni founded such notable companies as Intel and Dropbox.
d. The university is the oldest higher education institution in the US.
e. The university social environment includes the so called "eating clubs" – which function as both social houses and dining halls.

2. Read the text again. Answer the following questions.

1. Which state is the most represented among the best American universities?
2. What are the top five universities in the US?
3. What makes CalTech one of the most successful universities in the US? How many students are there? What fields of studies are there across the six faculties?
4. Where is Stanford University based? Why is the university often referred to as 'the Farm'? How successful are Stanford alumni?

5. What programmes are the most popular among undergraduates at MIT? What famous people graduated from MIT?

6. How old is Harvard University? What kind of students get into Harvard? How big is the Harvard Library System?

7. How old is Princeton University? What are the eating clubs at Princeton? What requirements do degree courses at Princeton have?

3. Retell the text using the phrases below.

The most represented
tiny size student population
primary campus
focus on
alumni community
four houses
pursue a PhD
high-tech industry
technology companies and start-ups
distinctive buildings
admission rate
long-standing rival
undergraduate and postgraduate programmes
famous alumni
be founded
cost of tuition
financial endowment
Ivy League university
distinctive social environment
private 'eating clubs'
strictly specified requirements
do research
application process

UNIT 4
ROLE OF COMPUTERS IN DAILY LIFE

You wake up in the morning, switch on your PC and check mails or update your Facebook status. You go to work, switch on your computer and work. You come back from work, and re-check your mails, make entries in your account folder, check your bank balance, etc. You encourage your child to watch NatGeo, or undertake grammar test using the latest software. You watch a movie or play one round of computer game and end your day. But wait, in this busy schedule, have you wondered how much you are dependent on your PC or computer for your daily activities. Computers play an important role in our life today. Let us know more about it.

Importance of Computer in Daily Life

When talking about the use of computers in everyday life, we talk about the direct as well as indirect uses. For e.g, when we use the computer for working or gaming, we have its direct uses; while using an ATM, we are actually making an indirect use of computer based technology. The Internet proved to be a boon in the field of science and technology. Computers, in general, are used in nearly all fields, today, like supermarkets, banks, etc.

Education

With the development of technology, we find that long gone are the days when we used notebooks to write down our research paper or actually used the library for research. Today, you simply need to 'Google' to find any information you want. Secondly, e-learning (e-classrooms) or distance learning with computers is the latest and most practical modes of education today. Right from encyclopedias to dictionaries to tests; you can simply have anything on your own PC within a fraction of seconds.

Accounts

Do you remember the last time you actually did maths using a pencil and paper, or even calculated your monthly expense using a calculator? This is because most of us use computers for our daily accounts. Keeping accounts using computers is not only feasible, but also more reliable and safer. You can have passwords; and also memory devices that can preserve large data for a really long time.

Data Storage
Talking about data storage, most of us have an enviable collection of music, movies, etc. on our PC. Storing and sharing of any kind of data is very easy and practical on computers. Secondly, storage options like the network-attached storage help in providing data access to a larger number of clients.

Working

Large number of people make use of computers for work purposes every day. Software engineers, writers, businessmen; employees in the field of telecommunication, banking, research, medicine, make use of computers daily. Secondly, telework or working from home is possible because of the PC. Therefore,

we can say that the computer is also a source of income for a considerable number of people all over the world.

Social Networking and Gaming

Last, but not the least, very few of us would actually spend a day without Facebook or Twitter. If you take a look at the rise of followers or users on these or any other social networking sites, you will have a fair idea about their popularity and role in social interaction. Secondly, do you know that the computer gaming industry generates billions in revenue every year? This is because of the popularity of computer games all over the world.

Some More Uses of Computers

The above mentioned are the major fields that highlight the role of computers in our daily life. Apart from the aforementioned ones, there are several other uses of computers in day-to-day life. They include:

E-banking
E-shopping
Graphics and architectural designs
Sharing of knowledge
Entertainment
Day planners / organizers
Writing / publishing content

Lastly, as a part of fun, imagine one day without using your PC or any computer based application. Then, you will surely understand the importance of this 'thinking machine' in your life. Ciao!

1. Match pairs of words.

switch	in nearly all fields
undertake	our research paper
proved to be	feasible
be used	your PC
write down	your monthly expense
calculate	an enviable collection
preserve	boon
have	a grammar test
be	a source of income
generate	large data
be not only	billions in revenue
understand	the importance

2. Find the phrases from exercise 2 in the sentences of the text. Translate those sentences.

3. Tell your groupmates about the role of computers in your life.

UNIT 5
JOBS IN IT

Ten typical jobs graduates can do in IT

The IT industry is host to a whole raft of job titles. To help you, there have been described ten of the top IT job titles you might encounter when searching for graduate jobs.

To make sure you find the right graduate IT job with the right employer, always check job descriptions carefully when applying so that you understand the skills and responsibilities of the role.

Graduate job 1: Software developer

Similar to: software engineer, software architect, web developer, mobile developer, systems developer, test automation developer.

This job in brief: Software developers implement software solutions by building programs, applications and websites. They write and test code, often using development tools. The work can involve talking to clients and colleagues to assess and define what solution of system is needed, which means there is a lot of interaction as well as technical work. A computing, software engineering or related degree is often needed but a few employers train up other graduates who can demonstrate interest in and aptitude for software development.

Key skills include:
analysis
logical thinking
teamwork
attention to detail

Graduate job 2: Systems analyst

Similar to: systems developer, systems engineer.

This job in brief: Systems analysts examine existing IT systems and write requirement for new ones. They analyse how well software, hardware and the wider IT system fir the business needs of their employer or of a client and write requirements for new systems. They may also help implement them, train users and monitor their effectiveness. Travel is a key feature of the job as the majority of work is undertaken at clients' premises. To get a job as a systems analyst you usually need a degree in a technical or IT subject.

Key skills include:
ability to extract and analyse information
communication
analysis
persuasion and sensitivity

Graduate job 3: Business analyst

Similar to: business architect, information specialist.

This job in brief: Business analysts are equally happy talking with technology people, business managers and end users. They identify opportunities for improvement to processes and business operations using information technology. The role is project based and begins with 15rganizat a customer's needs, gathering and documenting requirements and creating a project plan to design the resulting technology solution. Business analysts need technology understanding, but don't necessarily need a technical degree.

Key skills include:

communication

presentation

facilitation

project management

problem solving

Graduate job 4: IT support analyst

Similar to: helpdesk support analyst, technical support analyst.

This job in brief: IT support analysts provide technical set-up, support and advice to IT users via email, phone, social media and in person. They either provide support within a particular 15rganization or to external businesses, customers of a particular product or on an ad hoc basis. For example, there is a growing market for on-demand services for home and office tech repair, set-up and troubleshooting. While open to graduates of any discipline, technical support employers typically prefer graduates with an IT-related degree.

Key skills include:

wide-ranging tech knowledge

problem solving

communication and listening

patience.

Graduate job 5: Network engineer

Similar to: hardware engineer, network designer.

This job in brief: Network engineering is one of the more technically demanding IT jobs. Broadly speaking the role involves setting up, administering, maintaining and upgrading communication systems, local area networks and wide area networks for an 15rganization. Network engineers are also responsible for security, data storage and disaster recovery strategies. It is a highly technical role and you'll gather a hoard of specialist technical certifications as you progress. A telecoms or computer science-related degree is needed.

Key skills include:

specialist network knowledge

communication

planning

analysis

problem solving.

Graduate job 6: IT consultant

Similar to: technical consultant.

This job in brief: The term 'consultant' can be a tagline for many IT jobs, but typically technical consultants provide technical expertise to, and develop and implement IT systems for, external clients. They can be involved at any or all stages of the project lifecycle: pitching for a contract; refining a specification with the client team; designing the system; managing part or all of the project; after sales support... or even developing the code. A technical degree is preferred, but not always necessary.

Key skills include:
communication
presentation
technical and business understanding
project management
teamwork.

Graduate job 7: Technical sales representative

Similar to: account manager, sales executive.

This job in brief: Technical sales may be one of the least hands-on technical roles, but it still requires an understanding of how IT is used in business. You may sell hardware, or extol the business benefits of whole systems or services. Day to day, the job could involve phone calls, meetings, conferences and drafting proposals. There will be targets to meet and commission when you reach them. A technology degree isn't necessarily essential, but you will need to have a thorough technical understanding of the product you sell.

Key skills include:
product knowledge
persuasion
interpersonal skills
drive
mobility
business awareness.

Graduate job 8: Project manager

Similar to: product planner, project leader, master scheduler.

This job in brief: Project managers 16rganiza people, time and resources to make sure information technology projects meet stated requirements and are completed on time and on budget. They may manage a whole project from start to finish or manage part of a larger 'programme'. It isn't an entry-level role: project managers have to be pretty clued up. This requires experience and a good foundation of technology and soft skills, which are essential for working with tech development teams and higherlevel business managers.

Key skills include:
17rganization
problem solving
communication
clear thinking
ability to stay calm under pressure

Graduate job 9: Web designer
Similar to: multimedia programmer, UX designer, video games designer, web developer.

This job in brief: Web designers create the design and layout of a website or web pages, working with colleagues or clients to meet their requirements. Their role is different to web developers, who 17rganizati in making web designs a reality; however, there can be crossover between the two roles. Employers are likely to seek a degree in digital media design or a related subject but, whether you have a related degree or not, you will need to be able to present a portfolio of your best web design work.

Key skills include:
communication
attention to detail
problem solving
creativity.

Graduate job 10: QA analyst
Similar to: software tester.

This job in brief: QA (quality assurance) analysts test programs, games and any software to make sure it is reliable, fully functional and user-friendly before they are released to the public. They use a test plan to inspect thousands of lines of code to make sure they are entirely error free. Results are fed back to the project leader so that issues can be fixed. QA analysts can be involved in the early stages of projects in order to anticipate pitfalls before work begins. Employers tend to prefer graduate QA analysts to have a degree in an IT-related subject.

Key skills include:
attention to detail
creativity
analytical and investigative thinking
communication.

1. Match the following jobs with their descriptions.

1. Software developers	**a.** test programmes, games, and software.
2. Systems analysts	**b.** create the design and layout of a website or a web page.
3. Business analysts	**c.** develop and maintain computer software, websites and software applications (apps).
4. IT support analysts	**d.** provide advice, guidelines and a road map for sourcing, utilizing and managing it assets and resources.
5. Network engineers	**e.** play the lead role in planning, executing, monitoring, controlling and closing projects
6. IT consultants	**f.** set up, develop and maintain computer networks within an 18rganization or between 18rganizations.
7. Technical sales representatives	**g.** they analyse how well software, hardware and the wider it system fit the business needs of an employer or a customer.
8. Projects managers	**h.** are the liaisons between the business people and the technical people in a company.
9. Web designers	**i.** provide front-line primary technical support to end users on various technical issues and problems relating to hardware, software and peripherals
10. QA analysts	j. establish and maintain long-term business relationships with new and current customer base.

2. Match the verbs on the left with the nouns on the right.

a.

implement	interest
build	other graduates
write and test	clients and colleagues
talk to	code
train up	programs, applications and websites
demonstrate	software solutions

b.

examine	existing it systems
write	effectiveness
fit	users
train	the business needs
monitor	requirements for the new systems

c.

identify	opportunities
use	requirements
gather and document	a project plan
create	information technology
design	the solution

d.

provide	a growing market
there is	set-up, support and advice

e.

involve	setting up, administering, maintaining and upgrading communication systems
be responsible for	security, data storage and disaster recovery strategies

f.

provide	it systems
develop and implement	a contract
pitch for	technical expertise to
refine	a specification
design	the system
develop	the code

g.

require	hardware
sell	an understanding
extol	phone calls, meeting etc.
involve	the business benefits
have	a thorough technical understanding

h.

organise	people, time and resources
meet	a whole project
manage	stated requirements

i.

create	a portfolio
work	with colleagues
seek	the design
present	a degree in digital media design

j.

test	programs, games and any software
inspect	thousand of lines of code
anicipate	a degree in an it-related subject
have	pitfalls

3. Using the following scale, rate your skills.

Skills	Excellent	Very good	Good	Fair	Poor
logical thinking					
teamwork					
attention to detail					
communication					
presentation					
problem solving					
patience					
mobility					
ability to stay calm under pressure					

UNIT 6
HISTORY OF COMPUTER DEVELOPMENT

COMPUTER INTRODUCTION

An amazing machine! We are living in the computer age today and most of our day to day activities cannot be accomplished without using computers. Sometimes knowingly and sometimes unknowingly we use computers. Computer has become an indispensable and multipurpose tool. We are breathing in the computer age and gradually computer has become such a desire necessity of life that it is difficult to imagine life without it.

DEFINITION

For most of the people, computer is a machine used for a calculation or a computation, but actually it is much more than that. Precisely computer is an electronic device for performing arithmetic and logical operation. Or "Computer is a device or a flexible machine to process data and converts it into information." To know about the complete process that how computer works, we will have to come across the various terms such as Data, Processing and Information. First of all we will have to understand these terms in true sense.

1. DATA: – "Data" is nothing but a mare collection of basic facts and figure without any sequence. When the data is collected as facts and figure, it has no meaning at that time, for example, name of student, names of employees etc.

2. PROCESSING: – 'Processing' is the set of instruction given by the user or the related data to output the meaningful information. Which can be used by the user? The work of processing may be the calculation, comparisons or the decision taken by the computer.

3. INFORMATION: - 'Information 'is the end point or the final output of any processed work. When the output data is meaning it is called information.

DEVELOPMENT OF COMPUTER

Actually speaking electronic data processing does not go back more than just half a century i.e. they are in existence merely from early 1940's. In early days when our ancestor used to reside in cave the counting was a problem. Still it is stated becoming difficult. When they started using stone to count their animals or the possession they never knew that this day will lead to a computer of today. People today started following a set of procedure to perform calculation with these stones, which later led to creation of a digital counting device, which was the predecessor the first calculating device invented, was known as ABACUS.

THE ABACUS
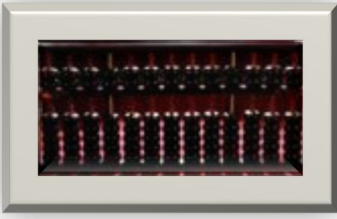
Abacus is known to be the first mechanical calculating device. Which was used to be performed addition and subtraction easily and speedily? This device was a first develop Ed by the Egyptians in the 10th century B.C, but it was given it final shape in the 12th century A.D. by the Chinese educationists. Abacus is made up of wooden frame in which rod where fitted across with rounds beads sliding on the rod. It id dividing into two parts called 'Heaven' and 'Earth'. Heaven was the upper part and Earth was the lower one. Thus any no. can be represented by placing the beads at proper place.

NAPIER'S BONES

As the necessity demanded, scientist started inventing better calculating device. In thus process John Napier's of Scotland invented a calculating device, in the year 1617 called the Napier Bones. In the device, Napier's used the bone rods of the counting purpose where some no. is printed on these rods. These rods that one can do addition, subtraction, multiplication and division easily.

PASCAL'S CALCULATOR

In the year 1642, Blaise Pascal a French scientist invented an adding machine called Pascal's calculator, which represents the position of digit with the help of gears in it.

LEIBNZ CALCULATOR
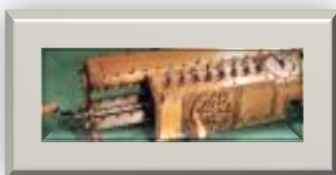
In the year 1671, a German mathematics, Gottfried Leibniz modified the Pascal calculator and he developed a machine which could perform various calculation based on multiplication and division as well.

ANALYTICAL ENGINE

In the year 1833, a scientist form England knows to be Charles Babbage invented such a machine. Which could keep our data safely? This device was called Analytical engine and it deemed the first mechanical computer. It included such feature which is used in today's computer language. For this great invention of the computer, Sir Charles Babbage is also known as the father of the computer.

GENERATION OF COMPUTER

As the time passed, the device of more suitable and reliable machine was need which could perform our work more quickly. During this time, in the year 1946, the first successful electronic computer called ENIAC was developed and it was the starting point of the current generation of computer.

FIRST GENERATION

ENIAC was the world first successful electronic computer which was develops by the two scientists namely J. P. Eckert and J. W. Mauchy. It was the beginning of first generation computer. The full form of ENIAC is "Electronic Numeric Integrated And Calculator" ENIA was a very huge and big computer and its weight was 30 tones. It could store only limited or small amount of information. Initially in the first generation computer the concept of vacuum tubes was used. A vacuum tube was such an electronic component which had very less work efficiency and so it could not work properly and it required a large cooling system.

SECOND GENERATION

Transister

As the development moved further, the second generation computers knocked the door. In this generation, transistors were used as the electronic component instead of vaccum tubes .A transistors is much smaller in the size than that of a vaccum tube. As the size of electrons components decreased from vaccum tube of transistor, the size of computer also decreased and it became much smaller than that of earlier computer.

THIRD GENERATION

Integrated circuit

The third generation computers were invented in the year 1964. In this generation of computer, IC (Integrated circuits) was used as the electronic component for computers. The development of IC gave birth to a new field of microelectronics. The main advantage of IC is not only its small size but its superior performance and reliability than the previous circuits. It was first developed by T.S Kilby. This generation of computer has huge storage capacity and higher calculating speed.

FOURTH GENERATION

Personal Computer

This is the generation where we are working today. The computers which we see around us belong to the fourth generation computers. 'Micro processor' is the main concept behind this generation of computer.

A microprocessor is a single chip (L.S.I circuit), which is used in a computer for any arithmetical or logical functions to be performed in any program. The honaur of developing microprocessor goes to Ted Hoff of U.S.A. He developed first micro-processor, the Intel 4004, as he was working for Intel Corporation, U.S.A with the use of microprocessor in the fourth generation computers, the size of computer become very fast and efficient. It is evident that the next generation of computer i.e. fifth generation will be developed soon. In that generation, computer will possess artificial intelligence and it would be able to take self decisions like a human being.

1. **Read the text and answer the questions.**

    1. What age are we living in?
    2. What is a computer?
    3. What is data? What is processing? What is information?
    4. What invention of our ancestors led to a computer of today?
    5. What is an abacus? How did the abacus evolve?
    6. How did the Napier Bones work?
    7. What machine did Blaise Pascal invent? What was the Pascal's calculator modified into?
    8. What machine did Charles Babbage invent?
    9. What computer was introduced in 1946?

10. How were the second generation computers different from those ones of the first generation?

11. What was used as the electronic component for computers of the third generation?

12. What computers belong to the fourth generation?

2. Match the adjectives on the left with the nouns on the right.

Amazing	tool
indispensable	device
electronic	machine
arithmetic	operation
logical	facts
flexible	machine
mare	operation
basic	collection
meaningful	size
electronic	field
digital	component
mechanical	machine
upper/lower	machine
final	generation
various	calculation
mechanical	calculating device
suitable	information
reliable	part
second	shape
electronic	data processing
new	counting device
small	calculation device
superior	performance
single	chip

3. Find the phrases from exercise 2 in the sentences of the text. Translate those sentences.

UNIT 7
A TYPICAL PC

Computer essentials

1. Match the pictures to the computer essentials.

keyboard   mouse   modem   printer   speakers

monitor   webcam   CD/DVD drive   CPU (Central Processing Unit)

Parts of a computer

A computer is an electronic machine that accepts, processes, stores and outputs information. A typical computer consists of two parts: hardware and software.

Hardware is any electronic or mechanical pat of the computer system that you can see or touch.

Software is a set of instructions, called a program, which tells a computer what to do. There are three basic hardware sections.

1. The CPU is the heart of the computer, a microprocessor chip which processes data and coordinates the activities of all the other units.

2. The main memory holds the instructions and data which are being processed by the CPU. It has two main sections: **RAM** (random access memory) and **ROM** (read only memory).

3. Peripherals are the physical units attached to the computer. They include:

Input devices, which let us enter data and commands (e.g. the keyboard and the mouse

Output devices, which let us extract the results (e.g. the monitor and the printer).

Storage devices, which are used to store information

permanently (e.g. hard disks and DVD-RAV drives).

Disk drives arc used to read and write data on disks.

At the back of a computer there arc ports into which we can plug external devices (e.g. a scanner, a modem, etc.). They allow communication between the computer and the devices.

Functions of a PC: input, processing, output, storage

Functions of a PC: input, processing, output, storage

Input
We enter data with a keyboard, a webcam, etc.

Processing
The data is manipulated according to program instructions.

Storage
We keep data and programs in memory systems where they are available for processing.

Output
We can see the result on the screen or in printed form.
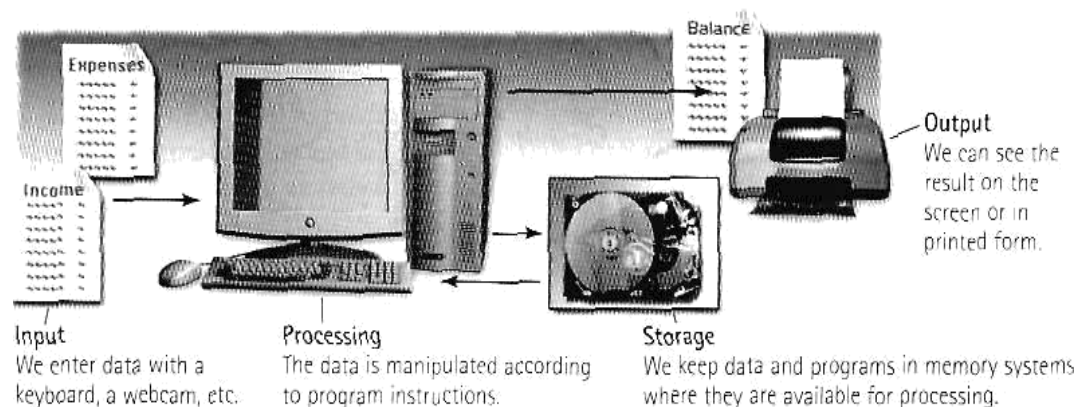
2. Read these quotations and say which computer essential they refer to.

1. 'Accelerate your digital lifestyle by choosing a Pentium at 4.3 GHz.'

2.`Right-click to display a context-sensitive menu.'

3. 'You will see vivid, detailed images on a 17" display.'

4. 'This will produce high-quality output, with sharp text and impressive graphics.'

5. `Use it when you want to let the grandparents watch the new baby sleeping.'

6. 'Press any key to continue.'

3. Match the terms with their definitions.

1. CD/DVD drive

2. speaker

3. modem

4. port

a any socket into which a peripheral device may be connected
b device used to produce voice output and play back music
c mechanism that reads and/or writes to optical discs
d device that converts data so that it can travel over the Internet

4. Complete the sentences with the correct terms.

Hardware + software –

Programs: word processor, email, etc. –

Mechanical and electronic parts –

CPU, main memory, peripherals –

Input, output, storage devices –

Keyboard, mouse –

Monitor, printer –

Hard disk, DVD drive –

Unit 8

TYPES OF COMPUTERS

There are a lot of terms used to describe computers. Most of these words imply the size, expected use or capability of the computer. While the term computer can apply to almost any device that has a microprocessor in it, most people think of a computer as a device that receives input from the user through a mouse or keyboard, processes it in some fashion and displays the result on a screen. Do you know the different types of computers?

PC Apple iPad Air A single person defines the personal computer, or PC, as any computer designed for general use by one person. While a Mac is a PC, most people relate the term with computers that run the Windows operating system. PCs were first known as microcomputers because they were a complete computer but built on a smaller scale than the huge systems in use by most businesses. Personal computers come in many forms, including the new Apple iPod.

DESKTOP A PC that is not designed for portability is a desktop computer. The expectation with desktop systems is that you will set the computer up in a permanent location, like a desk or table. Most desktops offer more power, storage and versatility for less cost than their portable brethren.

LAPTOP Also called notebooks, laptops are portable computers that mix the display, keyboard, a pointing device or trackball, processor, memory and hard drive all in a battery-operated package slightly larger than an average hardcover book. On the left is a picture of Apple CEO Steve Jobs holding up the MacBook Pro Air.

TABLET COMPUTERS Tablet Computers are ultra-portable computers that are even smaller than traditional laptops. Their low cost means they're cheaper than almost any brand-new laptop you'll find at retail outlets. However, the internal components are less powerful than those in regular laptops. Recent improvements to tablet computers have allowed users to view HD video, get high quality sound, great photo capabilities, and the ability to share information, photos, and videos with anyone.

SMARTPHONES Smartphones are handheld-sized computers that often use flash memory instead of a hard drive for storage. These devices usually do not have keyboards but rely on touchscreen technology for user input. Smartphones are typically smaller than a paperback novel, very lightweight with a reasonable battery life. Smartphones have the same capabilities as tablet computers, but also allow users to text or make phone calls.

WORKSTATION Another type of computer is a workstation. A workstation is simply a desktop computer that has a more powerful processor, additional memory and enhanced capabilities for performing a special group of task, such as 3D Graphics or game development. They may even use multiple screens to enhance their viewing.

SERVER A computer that has been optimized to provide services to other computers over a network. Servers usually have powerful processors, lots of memory and large hard drives. Servers allow many computers to share a printer or other devices without the cost of having to buy one for every computer. Servers also allow users to share information and files with each other. The computers in this lab are part of a network.

MAINFRAME In the early days of computing, mainframes were huge computers that could fill an entire room or even a whole floor! As the size of computers has diminished while the power has increased, the term mainframe has fallen out of use in favor of enterprise server. You'll still hear the term used, particularly in large companies to describe the huge machines processing millions of transactions every day. Mainframes store vast amounts of information.

SUPERCOMPUTER This type of computer usually costs hundreds of thousands or even millions of dollars. Although some supercomputers are single computer systems, most are composed of multiple high performance computers working in parallel as a single system. Supercomputers are the fastest, most powerful, most expensive computers made today. The best-known supercomputers are built by

Cray Supercomputers. Many of today's great movies use supercomputers for their CGI. They can perform over a trillion calculations per second.

WEARABLE COMPUTERS The latest trend in computing is wearable computers. Essentially, common computer applications (e-mail, database, multimedia, calendar/scheduler) are integrated into watches, cell phones, visors and even clothing. Users can use these devices for health and fitness, navigation, social networking, and gaming. Google can now augment a person's vision through special computer glasses. The glasses can stream information to the lenses and allow the wearer to send and receive messages through voice commands. There is also a built-in camera to record video and take pictures.

1. Complete the following sentences.

1. Most of the words (terms) imply … .
2. Most people think of a computer as … .
3. PCs were first known as … .
4. A PC that is not … .
5. Laptops are portable computers … .
6. Tablet computers are ultraportable computers that … .
7. Smartphones are handheld-sized computers that … .
8. A workstation is simply a desktop computer that … .
9. A server is a computer that … .
10. In the early days of computing, mainframes were … .
11. Many of today's great movies … .
12. The latest trend in computing … .

2. Make up questions to the text using the following words.

Imply, think of, define, first, designed for, mix, allow, use, processor, drives, fill, store, cost, latest, applications.

3. Which word or expression from the text can be used to mean the following:

1. easy to wear; suitable for wearing	**a.** capability
2. lasting for a long time or for ever	**b.** portability
3. a store that sells goods to the public	**c.** permanent
4. the ability to do something:	**d.** retail outlet
5. to reduce or be reduced in size or importance	**e.** enhance
6. the ability of being light and small enough to be easily carried or moved	**f.** versatility
7. the quality of being versatile (= able to change easily or to be used for different purposes)	**g.** diminish
8. to improve the quality, amount, or strength of something	**h.** wearable

HISTORY OF SOFTWARE DEVELOPMENT
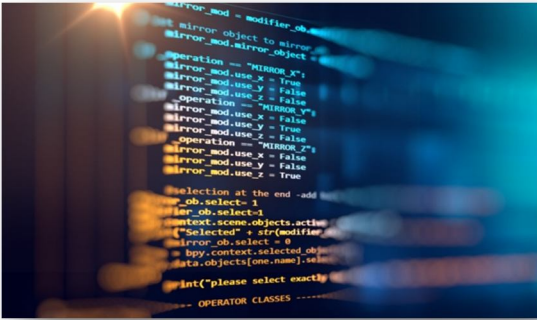
From massive machines like the ENIAC computer to smartphones and other mobile devices, computing has seen incredibly rapid technological change. These hardware upgrades would mean little, however, without the accompanying birth and growth of software development. From operating systems and spreadsheets to mobile apps and games, you interact with software every time you use a computer. Here's a brief overview of the origins of software development and the current state of the field.

What Is Software?

Simply put, software is the interface between computer systems and the humans who use them. Software consists of programming instructions and data that tell the computer how to execute various tasks. These days, instructions are generally written in a higher-level language, which is easier to use for human programmers, and then converted into low-level machine code that the computer can directly understand.

The Early Days of Software

Computer scientist Tom Kilburn is responsible for writing the world's very first piece of software, which was run at 11 a.m. on June 21, 1948, at the University of Manchester in England. Kilburn and his colleague Freddie Williams had built one of the earliest computers, the Manchester Small-Scale Experimental Machine (also known as the "Baby"). The SSEM was programmed to perform mathematical calculations using machine code instructions. This first piece of software took "only" 52 minutes to correctly compute the greatest divisor of 2 to the power of 18 (262,144).

For decades after this groundbreaking event, computers were programmed with punch cards in which holes denoted specific machine code instructions. Fortran, one of the very first higher-level programming languages, was originally published in 1957. The next year, statistician John Tukey coined the word "software" in an article about computer programming. Other pioneering programming languages like Cobol, BASIC, Pascal and C arrived over the next two decades.

The Personal Computing Era

In the 1970s and 1980s, software hit the big time with the arrival of personal computers. Apple released the Apple II, its revolutionary product, to the public in April 1977. VisiCalc, the first spreadsheet software for personal computing, was

wildly popular and known as the Apple II's killer app. The software was written in specialized assembly language and appeared in 1979.

Other companies like IBM soon entered the market with computers such as the IBM PC, which first launched in 1981. The next year, Time magazine selected the personal computer as its Man of the Year. Again, software for productivity and business dominated these early stages of personal computing. Many significant software applications, including AutoCAD, Microsoft Word and Microsoft Excel, were released in the mid-1980s.

Open-source software, another major innovation in the history of software development, first entered the mainstream in the 1990s, driven mostly by the use of the internet. The Linux kernel, which became the basis for the open-source Linux operating system, was released in 1991. Interest in open-source software spiked in the late 1990s, after the 1998 publication of the source code for the Netscape Navigator browser, mainly written in C and C++. Also noteworthy is the release of Java by Sun Microsystems in 1995.

The Mobile Device

The world's very first mobile phone call was made on April 3, 1973. In 1993 IBM released the first publicly available "smartphone" and in 1996 Palm OS hit the market, bringing PDA's to the masses. In 1999, RIM released the very first Blackberry 850 device and quickly became the world's fastest growing company. Then, in 2007, Apple changed computing with the release of the iPhone. This is when mobile computing really found its place and mobile applications began to explode. Mobile apps are now a major part of development using languages like Swift and Java.

Software Development Today

Today, software has become ubiquitous, even in places that you might not expect it, from crock pots to nuclear submarines. Some programming languages, like C and Cobol, have survived the test of time and are still in use. Other languages, such as Java and Python, are somewhat younger and have been used in countless software development projects. Still others, such as Apple's Swift programming language for iOS or Go Open source, are relatively new and exciting.

1. Read the text and answer the questions.

1. How much would hardware upgrades mean without the accompanying birth and growth of software development?
2. What is software?
3. When and where was the world's very first piece of software written? Who wrote it?
4. How long did it take the first piece of software to correctly compute the greatest divisor of 2 to the power of 18?

5. When did the boost of the Personal Computing Era begin? What significant software applications were released in those days?

6. When did the mobile computing prove to be at its height?

2. Find the following phrases in the text. Translate those sentences.

massive machines
incredibly rapid
hardware upgrades
simply put
to execute various tasks
be responsible for
the earliest computers
to perform mathematical calculations
to correctly compute
revolutionary product
killer app
enter the market
significant software applications
open-source software
phone call
publicly available
Blackberry 850 device
the release of the iPhone
a major part of development
become ubiquitous
programming languages
in countless software development projects
relatively new and exciting

3. Which word or expression from the text can be used to mean the following:

1. upgrade	**a.** a piece of software or equipment that improves the quality or usefulness of a computer or machine
2. spreadsheet	**b.** allow to be generally available.
3. ubiquitous	**c.** a computer program, used especially in business, that allows you to do financial calculations and plans
4. execute	**d.** the ideas, attitudes, or activities that are shared by most people and regarded as normal or conventional.
5. groundbreaking	**e.** seeming to be everywhere:
6. punch cards	**f.** to do or perform something, especially in a planned way
7. release	**g.** very new and a big change from other things of its type
8. mainstream	**h.** a card perforated according to a code, formerly used to program computers.

UNIT 10
THE INTERNET

What the Internet is

The Internet is an International computer Network made up of thousands of networks linked together. All these computers communicate with one another4 they share data, recourses, transfer information, etc. To do it they need to use the same language or protocol: TCP/ IP (Transmission Control Protocol/ Internet Protocol) and every computer is given an address or IP number. This number is a way to identify the computer on the Internet.

Getting connected

To use the Internet you basically need a computer, the right connection software and a modem to connect your computer to a telephone line and then access your ISP (Internet Service Provider).

The modem (modulator-demodulator) converts the digital signals stored in the computer into analogue signals that can be transmitted over telephone lines. There are two basic types: external with a cable that is plugged into a computer via a USB port, and internal, an expansion card inside the computer. A PC card modem is a different, more versatile option for laptops and mobile phones.

At first most computers used a dial-up telephone connection that worked through the standard telephone line. Now a broadband connection, a high data transmission rate Internet connection, has become more popular: either ADSL (Asymmetric Digital Subscriber Line), which allows you to use the same telephone line for voice and fast access to the Internet, or cable, offered by most TV cable providers.

The basic equipment has changed drastically in the last few years. You no longer need a computer to use the Internet. Web TV provides email and access to the Web via a normal TV set plus a high-speed modem. More recently, 3Generation mobile phones and PDAs, personal digital assistants, also allow you to go online with wireless connections, without cables,

Telephone lines are not essential either. Satellites orbiting the earth enable your computer to send and receive Internet files. Finally, the power-line Internet, still under development, provides access via a power plug.

Components of the Internet

The Internet consists of many systems that offer different facilities to users. WWW, the World Wide Web, a collection of files or pages containing links to other documents on the Net. It's by far the most popular system. Most Internet services are now integrated on the Web.

Email, or electronic mail, for the exchange of messages and attached files.
Mailing lists (or listserves) based on programs that send messages ona certain topic to all the computers whose users have subscribed to the list.

Chat and instant messaging, for real-time conversations; you type your messages on the keyboard, Internet telephone, a system that lets people make voice calls via the Internet.

Video conference, a system that allows the transmission of video and audio signals in real time so the participants can exchange data, talk and see one another on the screen.

File Transfer Protocol (FTP), used to transfer files between computers. Newsgroups, where people send, read and respond to public bulletin board messages stored on a central computer.

TELNET, a program that enables a computer to function as a terminal working from a remote computer and so use online databases or library catalogues.

1. Read the text above and decide if these sentences are True or False. If they are false, correct them.

1. The Internet and the World Wide Web are synonyms.
2. Computers need to use the same protocol (TCP / IP) to communicate with each other.
3. Web TV can provide access to the Net.
4. ADSL and cable are two types of dial-up connections.
5. External, internal and PC card are types of connections.
6. Information can be sent through telephone lines, satellites and power lines.
7. The computer IP number is a way to identify it on the Internet.

2. What Internet system should these people use?

1. 'I like receiving daily updates and headlines from newspapers on my computer.'
2. 'I'm doing some research and need computer access to the University library.'
3. I'd like to avoid flying to Japan to attend the meeting but want to see what's going on there."
4. 'I want to read people's opinions about environmental issues and express my views.'
5. 'I have designed a web page and want to transfer the data to my reserved web space.'
6. 'I'd like to check my students' draft essays on my computer and send them back with my suggestions."

7. 'I don't want to spend too much money on international phone calls but I love hearing his voice.'

8. 'I live in a small village where there are no other teenagers. I wish I had the chance to meet and chat with friends.'

3. Choose the correct alternatives to complete this newspaper article.

Sharing your broadband connection with your neighbours is either the best way of making friends or the fastest way to lose them. Thanks to new European legislation, (1) *modem/ wireless* telephone technology and a firm called My Zones, several households within 300 metres of each other can now share the cost of fast (2) *broadband/ dial-up/ phone* access. But the more people using your network, the slower it gets. If four people using it at once, the surfing speed is 128k. Clive Mayhew-Begg, chief executive of MyZones, says 'Sharing broadband is just the start of a new generation of consumer-based Internet services.' It starts on july 25 when MyZones will start selling 150£ starter kits. These include a wi-fi (wireless technology) point and ADSL (3) *3G/ modem / web TV* but not the wi-fi adapters you and your neighbours will need. These will cost an extra £60 or so for each computer logged on to the wireless network.
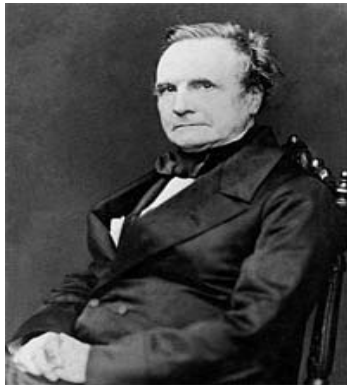
<div align="right">The Mirror</div>

TEXTS FOR READING COMPREHENSION

Who is the father of the computer?

There are hundreds of people who have major contributions to the field of computing. The following sections detail the primary founding fathers of computing, the computer, and the personal computer we all know and use today.

Father of computing

Charles Babbage was considered to be the father of computing after his invention and concept of the Analytical Engine in 1837. The Analytical Engine contained an Arithmetic Logic Unit (ALU), basic flow control, and integrated memory; hailed as the first general-purpose computer concept. Unfortunately, because of funding issues, this computer was never built while Charles Babbage was alive.

However, in 1910 Henry Babbage, Charles Babbage's youngest son was able to complete a portion of the machine that could perform basic calculations. In 1991, the London Science Museum completed a working version of the Analytical Engine No 2. This version incorporated Babbage's refinements developed during the creation of the Analytical Engine111Although Babbage never completed his invention in his lifetime, his radical ideas and concepts of the computer are what make him the father of computing.

Father of the computer

There are several people who can be considered the father of the computer including Alan Turing, John Atanasoff, and John von Neumann. However, for the purpose of this document we're going to be considering **Konrad Zuse** as the father of the computer with his development of the Z1, Z2, Z3, and Z4111In 1936 to 1938 Konrad Zuse created the Z1 in his parent's living room. The Z1 consisted of over 30,000 metal parts and is considered to be the first electro-mechanical binary programmable computer. In 1939, the German military commissioned Zuse to build the Z2, which was largely based on the Z1. Later, he completed the Z3 in May of 1941, the Z3 was a revolutionary computer for its time and is considered the first electromechanical and program-controlled computer. Finally, on July 12, 1950, Zuse completed and shipped the Z4 computer, which is considered to be the first commercial computer.

Father of the personal computer

Henry Edward Roberts coined the term "personal computer" and is considered to be the father of the modern personal computers after he released of the Altair 8800 on December 19, 1974. It was later published on the front cover of Popular Electronics in 1975 making it an overnight success. The computer was available as a kit for $439 or assembled for $621 and had several additional add-ons such as a memory board and interface boards. By August 1975, over 5,000 Altair 8800 personal computers were sold; starting the personal computer revolution.

Who invented the Internet?

A single person did not create the Internet that we know and use today. Below is a listing of different people who have helped contribute to and develop the Internet.

The idea

The initial idea of the Internet is credited to **Leonard Kleinrock** after he published his first paper entitled "Information Flow in Large Communication Nets" on May 31, 1961111In 1962, **J.C.R. Licklider** became the first Director of IPTO and gave his vision of a galactic network. Also, with ideas from Licklider and Kleinrock, **Robert Taylor** helped create the idea of the network that later became ARPANET.

Initial creation

The Internet as we know it today first started being developed in the late 1960's in California in the United States111In the summer of 1968, the Network Working Group (NWG) held its first meeting, chaired by **Elmer Shapiro**, at the Stanford Research Institute (SRI). Other attendees included **Steve Carr**, **Steve Crocker**, **Jeff Rulifson**, and **Ron Stoughton**. In the meeting, the group discussed solving issues related to getting hosts to communicate with each other.

In December 1968, **Elmer Shapiro** with SRI released a report "A Study of Computer Network Design Parameters." Based on this and earlier work by **Paul Baran**, **Thomas Marill** and others, **Lawrence Roberts** and **Barry Wessler** created the Interface Message Processor (IMP) specifications. Bolt Beranek and Newman, Inc. (BBN) was later awarded the contract to design and build the IMP subnetwork.

General public learns about Internet

The UCLA (University of California, Los Angeles) put out a press release introducing the public to the Internet on July 3, 1969.

First network equipment

On August 29, 1969, the first network switch and the first piece of network equipment called "IMP" (Interface Message Processor) is sent to UCLA111On September 2, 1969, the first data moves from the UCLA host to the switch. The picture to the right is Leonard Kleinrock next to the IMP.

The first message and network crash

On Friday October 29, 1969 at 10:30 p.m., the first Internet message was sent from computer science Professor Leonard KleinRock's laboratory at UCLA, after the second piece of network equipment was installed at SRI. The connection not only enabled the first transmission to be made, but is also considered the first Internet backbone111The first message to be distributed was "LO", which was an attempt at "LOGIN" by **Charley S. Kline** to log into the SRI computer from UCLA. However, the message was unable to be completed because the SRI system crashed. Shortly after the crash, the issue was resolved, and he was able to log into the computer.
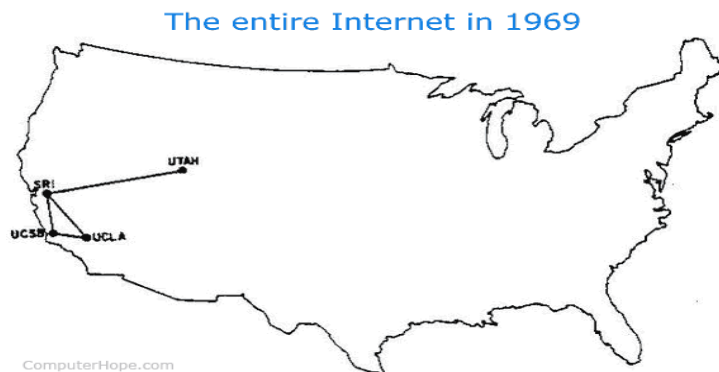
E-mail is developed

Ray Tomlinson sends the first network e-mail in 1971. It's the first messaging system to send messages across a network to other users111

TCP is developed

Vinton Cerf and **Robert Kahn** design TCP during 1973 and later publish it with the help of **Yogen Dalal** and **Carl Sunshine**in December of 1974 in RFC 675. Most people consider these two people the inventors of the Internet.

First commercial network

A commercial version of ARPANET, known as Telenet, is introduced in 1974 and considered to be the first Internet Service Provider (ISP).

Ethernet is conceived

Bob Metcalfe develops the idea of Ethernet in 1973.

The Modem is introduced

Dennis Hayes and **Dale Heatherington** released the 80-103A Modem in 1977. The Modem and their subsequent modems become a popular choice for home users to connect to the Internet and get online111TCP/IP is created.

In 1978, TCP splits into TCP/IP, driven by **Danny Cohen**, **David Reed**, and **John Shoch**to support real-time traffic. The creation of TCP/IP help create UDP and is later standardized into ARPANET on January 1, 1983. Today, TCP/IP is still the primary protocol used on the Internet.

DNS is introduced

Paul Mockapetris and **Jon Postel** introduce DNS in 1984, which also introduces the domain name system. The first Internet domain name, **symbolics.com**, is registered on March 15, 1985 by Symbolics, a Massachusetts computer company.

First commercial dial-up ISP

The first commercial Internet Service Provider (ISP) in the US, known as "The World", is introduced in 1989. The World was the first ISP to be used on what we now consider to be the Internet.

HTML

In 1990, while working at CERN, **Tim Berners-Lee** develops HTML, which made a huge contribution to how we navigate and view the Internet today111The first web site, info.cern.ch, is developed by Tim Berners-Lee at CERN and published online on August 6, 1991.

WWW

Tim Berners-Lee introduces WWW to the public on August 6, 1991 and becomes available for everyone August 23, 1991. The World Wide Web (WWW) is what most people today consider the "Internet" or a series of sites and pages that are connected with links. The Internet had hundreds of people who helped develop the standards and technologies used today, but without the WWW, the Internet would not be as popular as it is today.

First graphical Internet browser

Mosaic is the first widely used graphical World Wide Web browser developed and first released on April 22, 1993 by the NCSA with the help of **Marc Andreessen** and **Eric Bina**. A big competitor to Mosaic was Netscape, which was released a year later. Today's Internet browsers we use today (e.g., Internet Explorer, Chrome, Firefox, etc.), got their inspiration from the Mosaic browser.

Java and JavaScript

Originally known as oak, Java is a programming language developed by **James Gosling**and others at Sun Microsystems in 1995. Today, Java is still used to create Internetapplications and other software programs111JavaScript was developed by **Brendan Eich** in 1995 and originally known as LiveScript. LiveScript was released with Netscape Navigator 2.0 and renamed to JavaScript with Netscape Navigator 2.0B3. JavaScript is an interpreted client-side scripting language that allows a web designer the ability to insert code into their web page

COMPUTER INVENTORS AND PIONEERS

Bill Gates

Name: William H. Gates
Born: October 28, 1955 in Seattle, Washington, USA
Computer related contributions
Co-Founder and early CEO of the Microsoft company
Developed Altair BASIC for the MITS Altair that later developed into Microsoft BASIC.
Helped in the development of Microsoft's earlier programs such as MS-DOS.

Honors and awards
Awarded the Presidential Medal of Freedom in 2016.
Honored with the Silver Buffalo Award by the Boy Scouts of America. Awarded the 2010 Bower Award for Business Leadership of The Franklin Institute. Time magazine named Bill Gates one of the most 100 people who influenced the 20th century and one of the 100th most influential people of 2004, 2005, and 2006. Bill and his wife were awarded the Order of the Aztec Eagle for their philanthropic work in 2006. Made honorary Knight Commander of the Order of the British Empire (KBE) by Queen Elizabeth II in 2005. Honored as the 12th Distinguished Fellow of the British Computer Society. Youngest self-made billionaire. Featured on the front of TIME magazine in 1984.

Quotes

"It's fine to celebrate success but it is more important to heed the lessons of failure."

"Be nice to nerds. Chances are you'll end up working for one."

"If GM had kept up with technology like the computer industry has, we would all be driving $25 cars that got 1000 MPG."

"Measuring programming progress by lines of code is like measuring aircraft building progress by weight."

"We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten."

"Success is a lousy teacher. It seduces smart people into thinking they can't lose."

"I choose a lazy person to do a hard job. Because a lazy person will find an easy way to do it."

Steve Jobs

Name: Steven Paul Jobs
Born: February 24, <u>1955</u>, Los Altos, California, USA
Death: October 5, <u>2011</u> (Age: 56)
Computer related contributions
Co-Founder and former CEO of the <u>Apple</u> company.
Founder of <u>NeXT</u> Computer.
Owner of <u>Pixar</u>.
Member of the board of directors of the Walt Disney Company in 2006.

Inventor or co-inventor of 342 US Patents relating to computers and portable devices.

Spearheaded the advent of the <u>iPod</u>, <u>iTunes</u>, <u>iPhone</u>, and <u>iPod</u> while CEO of Apple.

Publications

Steve Jobs

I, Steve: Steve Jobs in His Own Words

iCon

Honors and awards

Awarded the National Medal of Technology in <u>1984</u>.

Named most powerful person in business in Fortune Magazine November 27, 2007.

Inducted into the California Hall of Fame on December 5, 2007.

Named The Person of the Year in the Financial Times December 2010.

Quotes

"You go to your TV to turn your brain off. You go to the computer when you want to turn your brain on."

"Remembering that you are going to die is the best way I know to avoid the trap of thinking you have something to lose. You are already naked. There is no reason not to follow your heart."

"That's been one of my mantras – focus and simplicity. Simple can be harder than complex; you have to work hard to get your thinking clean to make it simple."

"Your time is limited, so don't waste it living someone else's life. Don't be trapped by dogma — which is living with the results of other people's thinking. Don't let the noise of others' opinions drown out your own inner voice. And most important, have the courage to follow your heart and intuition. They somehow already know what you truly want to become. Everything else is secondary."

"We have always been shameless about stealing great ideas."

"Being the richest man in the cemetery doesn't matter to me … Going to bed at night saying we've done something wonderful … that's what matters to me."

"Deciding what not to do is as important as deciding what to do."

"It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them."

"You can't connect the dots looking forward; you can only connect them looking backwards. So you have to trust that the dots will somehow connect in your future. You have to trust in something — your gut, destiny, life, karma, whatever. This approach has never let me down, and it has made all the difference in my life."

"It's better to be a pirate than join the Navy."

"When I was 17, I read a quote that went something like: 'If you live each day as if it was your last, someday you'll most certainly be right.' It made an impression on me, and since then, for the past 33 years, I have looked in the mirror every morning and asked myself: 'If today were the last day of my life, would I want to do what I am about to do today?' And whenever the answer has been 'no' for too many days in a row, I know I need to change something."

Alan Turing

Name: Alan Mathison Turing
Born: June 23, 1912 in Maida Vale, London, England, United Kingdom
Died: June 7, 1954 (Age: 41)
Computer related contributions
English mathematician, logician, cryptanalyst, and computer scientist who is considered to be the father of computer science.
Developed the Turing Machine in 1936.
Developed the Turing Test.

Since 1966, the Turing Award has been given annually by the Association for Computing Machinery to a person for technical contributions to the computing community. It is widely considered to be the computing world's highest honour, equivalent to the Nobel Prize.

Honors and awards
The movie The Imitation Game (2014) was based on his life story.
Officer of the Order of the British Empire
Fellow of the Royal Society.

Quotes

"A computer would deserve to be called intelligent if it could deceive a human into believing that it was human."

"Machines take me by surprise with great frequency.

Ada Lovelace

Name: Born Augusta Ada Byron, Ada Lovelace was also known as Augusta Ada King and the Countess of Lovelace.
Born: December 10, 1815 in London
Death: November 27, 1852 (Age: 36)

Computer related contributions

- She is credited as being the worlds first computer programmer.
- Developed the first algorithm to be processed by a machine.
- Helped Charles Babbage with his analytical engine.

Publications

- Sketch of the Analytical Engine Invented by Charles Babbage

Reference:

1. Adrian Pilbeam. Business English, Pearson Education Limited, 2003

2. Professional English in Use. For Computers and the Internet. *Santiago* Remacha Esteras, *Elena Marco* Fabré Cambridge University Press, 2016.

3. Гаращенко Л. М. Практична англійська : навч. посібник / Л. М. Гаращенко. – Ірпінь : Академія ДПС України, 2001. – 91 с.

4. https://www.timeshighereducation.com/student/best-universities/best-universities-united-states

5. http://wikieducator.org/History_of_Computer_Development_%26_Generati on_of_Computer

6. https://medium.com/midlandcode/a-brief-history-of-software-development-f67a6e 6ddae0

7. https://targetjobs.co.uk/career-sectors/it-and-technology/advice/286189-ten-typical-jobs-graduates-can-do-in-it

8. http://eeisdtruan.ss4.sharpschool.com/UserFiles/Servers/Server_1230583/Fil e/Intro%20to%20Computers/10%20TYPES%20OF%20COMPUTERS.pdf

9. https://www.computerhope.com/issues/ch001335.htm

10. https://www.computerhope.com/issues/ch000984.htm

11. https://www.computerhope.com/people/steve_jobs.htm

12. https://www.thoughtco.com/english-for-information-technology-1210344

13. https://www.computerhope.com/people/bill_gates.htm

14. https://www.computerhope.com/people/alan_turing.htm

15. https://techspirited.com/role-of-computers-in-daily-life

Виробничо-практичне видання

МЕТОДИЧНІ ВКАЗІВКИ

для організації самостійної роботи
із навчальної дисципліни

« ІНОЗЕМНА МОВА»

(англійська мова)

*(для студентів 1 курсу денної форми навчання освітнього рівня «бакалавр»
за спеціальністю 122 – Комп'ютерні науки, 151 – Автоматизація та
комп'ютерно-інтегровані технології)*

(англ. мовою)

Укладач **БУГАЄВА** Вікторія Юріівна

Відповідальний за випуск *О. Л. Ільєнко*

За авторською редакцією

Комп'ютерний набір *В. Ю. Бугаєва*

Комп'ютерне верстання *І. В. Волосожарова*