

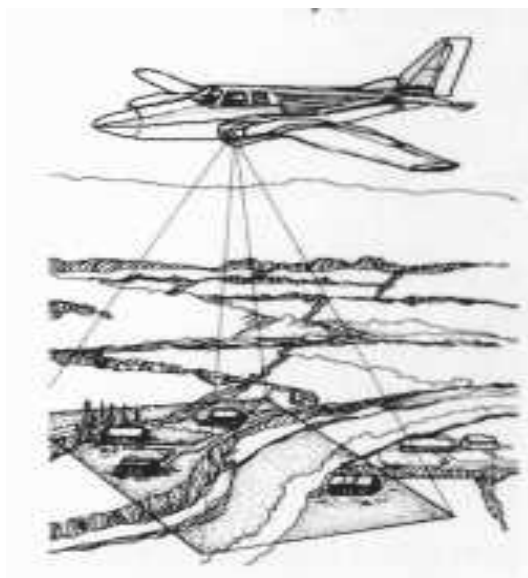
МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

ХАРКІВСЬКА НАЦІОНАЛЬНА АКАДЕМІЯ МІСЬКОГО ГОСПОДАРСТВА

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**МЕТОДИЧНІ ВКАЗІВКИ
З ДИСЦИПЛІНИ
«ІНОЗЕМНА МОВА ПРОФЕСІЙНОГО СПРЯМУВАННЯ»
(англійська мова)**

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МЕТОДИЧНІ ВКАЗІВКИ З ДИСЦИПЛІНИ «ІНОЗЕМНА МОВА ПРОФЕСІЙНОГО СПРЯМУВАННЯ» (англійська мова) (для організації самостійної роботи студентів 1 курсу денної форми навчання напряму підготовки 6.080101 «Геодезія, картографія та землеустрій»). / Авт.: Сергєєва Г.Б.; Харк. нац. акад. міськ. госп-ва. – Х.: ХНАМГ, 2009. – 47 с., укр., рос. та англ. мовами.

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Introduction

The methodical recommendations are designed to help intermediate learners of geographic information systems (GIS) master and improve their skills in reading and understanding the authentic texts and translating them into the native language. It is for learners studying English for specific purposes and for those who will need English in their job.

The booklet presents seven units and each one explains how to find in a sentence the particular part of speech, to define the particular type of a sentence and translate them into the native language.

Each unit also presents a set of tasks which helps students integrate their skills of vocabulary enlarging. The students are also expected to develop strong skills for vocabulary recording and memorizing.

The statements cover topics relevant to the students to widen and deepen their knowledge in the subject.

The tasks can be done both at home (as self-study) or in class with further discussing and evaluating of the results.

Depending on the teacher's project as well as learning styles of the students some tasks or units can be omitted without damaging the aim of the present methodical recommendations.

We hope that the students will not only learn a lot but will also enjoy doing the tasks.

GENERAL CLASSIFICATION OF THE PARTS OF SPEECH IN ENGLISH

The parts of speech differ from each other in meaning, form and function.

We distinguish between *notional* and *structural* parts of speech.

The *notional* parts of speech perform certain functions in the sentence: the functions of the subject, predicate, attribute, object, or adverbial modifier.

The *notional* parts of speech are as follows:

- | | | |
|----------------------------|---------------------|----------------------------|
| 1. the noun | - іменник- | - <i>существительное</i> |
| 2. the adjective | - прикметник | - <i>прилагательное</i> |
| 3. the pronoun | - займенник | - <i>местоимение</i> |
| 4. the numeral | - числівник | - <i>числительное</i> |
| 5. the verb | - дієслово | - <i>глагол</i> |
| 6. the adverb | - прислівник | - <i>наречие</i> |
| 7. the modal verbs | - модальні дієслова | - <i>модальные глаголы</i> |
| 8. the interjection | - вигук | - <i>междометие</i> |

The *notional* parts of speech serve either as *principal* or *secondary* parts of the sentence.

The *structural parts of speech* either express *relations* between words (e.g. the trees **in** the garden, Tom **and** Joe, etc.) or sentences or *emphasize the meaning* of words (e.g. **the** book, **a** book, etc.) or sentences. They never perform any independent function in the sentence. Here belong:

- | | | |
|---------------------------|--------------|------------------|
| 1. the preposition | - прийменник | - <i>предлог</i> |
| 2. the conjunction | - сполучник | - <i>союз</i> |
| 3. the particle | - частка | - <i>частица</i> |
| 4. the article | - артикль | - <i>артикль</i> |

In the English language the grammatical relations between words are expressed by means of the *form of words* and *word order*: e. g. *a map of the location*.

The *principal parts of the sentence*:

- | | | |
|----------------------|------------|---------------------|
| The subject | - підмет | - <i>подлежащее</i> |
| The predicate | - присудок | - <i>сказуемое</i> |

The *secondary parts of the sentence*:

- | | | |
|-------------------------------|--------------|-------------------------|
| The object | - додаток | - <i>дополнение</i> |
| The attribute | - визначення | - <i>определение</i> |
| The adverbial modifier | - обставина | - <i>обстоятельство</i> |

UNIT ONE. The Subject

The subject is a word or a group of words which names the person, object or phenomenon the sentence informs us about.

W a y s o f E x p r e s s i n g t h e S u b j e c t

Noun Іменник (<i>Существительное</i>)	Lines represent features such as roads. GIS is helping city workers do their jobs.
Personal pronoun Особистий займенник (<i>Личное местоимение</i>)	We think this will lead you to a better understanding. He radios the information to the police so they know the scale of evacuation. It quickly becomes a complex task.
Demonstrative pronoun Вказівний займенник (<i>Указательное местоимение</i>)	Those layers are actually made up of two kinds of information. This information would be replaced in the table.
Infinitive Іфінітив (<i>Инфинитив</i>)	To create labels for each of the landmarks on the map was necessary.
Gerund Грундій (<i>Герундий</i>)	Answering questions is one of the things a GIS does best.
Indefinite pronoun Невизначений займенник (<i>Неопределенное местоимение</i>)	One thing could be made up of all roads in an area. Someone may even want a career in GIS.
Impersonal 'it' Безособове 'it' (<i>Безличное 'it'</i>)	It is possible now to make maps in minutes. It's important to apply a different colour to each unique land use.
Complex subject Суб'єктний дієприкметниковий зворот (<i>Субъектный причастный оборот</i>)	Another method of discovering information about a theme is considered to be more efficient . It is out of the question for us to display the location.

PRACTICE

TASK 1. Translate the sentences into your native language paying attention to the ways of expressing the subject.

1. These themes can be laid on top of one another, creating the stack of information about the same geographic area. They can be turned off and on, as if you were peeling a layer off the stack.
2. You control the amount of information about an area that you want to see.
3. Attributes can be as numerous and complex as you want them to be.
4. GIS is now used by industries and governments worldwide in ways unimaginable only a few years ago.
5. Finding distances is a two-step process.
6. It is hard to distinguish one theme from another if the colours aren't very interesting.
7. To represent real-world objects is possible using three basic shapes: points, lines, an areas(=poligons).
8. The information is certain to come in three basic forms: map data, attribute data, and image data.
9. Showing population distribution by country is advisable with a thematic map.
10. Changing the topic is easy.
11. It's helpful to be aware of the different types of formats.
12. Learning GIS is a little like learning to fly.
13. Don't forget that learning never ends and that increasing your GIS education also increases effectiveness as a GIS user, your ability as a geographic information scientist, and your employability as a GIS specialist.
14. It is hard to georegister so many different maps.
15. I took geography courses in map reading and analysis, where I spent time with paper maps, learning what's on them and how they're put together, what the information means.
16. We can choose how the mapping takes place with relationship to earth's surface.
17. To use the Internet is necessary to search for information about GIS usage.

18. It is customary not to use the UTM coordinate system beyond 84 degrees north and 80 degrees south.
19. One might think that the climate was wetter, but in fact the difference is one of interpretation and lack of standardization.
20. The areas (size) of land parcels, the orientation of highways and the distribution of flora and fauna are supposed to be measured in a state park.

TASK 2. Define the part of speech of the words in bold. Use a dictionary to find out their meanings. Translate the sentences into your native language.

1. The cities are **represented** by little dots or circles. This paper map is a magnificent **representation** of cities and roads, mountains and rivers, railroads and state lines.

We use layers called themes **to represent** a particular feature of the area you are looking at.

2. The attributes in a theme of streets might include a street's name, its overall length, the route **number**, the road material and the **number** of lanes.
3. A GIS is a kind of super map, computer software that **links** geographic information (where things are) with descriptive information (what things are **like**).

Like shapefiles, coverages also store geographic features such as points, lines, and areas.

4. The first stage in the surveying **process** is usually done by locating a control point.
5. **It** is no surprise, that 'geographic information system' can be defined in many different ways.

TASK 3. Read the following international words and give all possible corresponding equivalents in your native language.

client, characteristics, population, peak, information, mile, occupation, format, zero, geography, computer, program, family, region, monitor, system, symbol, park, complex, file, segment, dialogue, box, operator, address, special, tourist, attribute,

operation, printer, print, project, chance, restaurant, student, type, start

TASK 4. Find out the initial form of the following words. Give the corresponding translation into your native language.

briefly, labourer, annually, cheaply, creative, reduction, humanity, pleasantly, ruler, acceptable, finally, consumption, responsibility, definition, involvement, uniformity, beneficial, restriction, relatively, application, largely, reflection

TASK 5. Tick the sentences in which the words *in bold* are the *subject* of the sentence. Translate the sentences into your native language.

1. **These** advantages of the layout should be eliminated.
2. **These** are the disadvantages which should be eliminated.
3. This is the model of the first automobile. **It** was propelled by steam.
4. While driving through the city **one** shouldn't break the speed limit.
5. At list **one** attempt should be made.
6. **To explore** such a vast territory in a period so short was in itself a very difficult task.
7. **What** are the advantages of this mode of transport?
8. **What** mode of transport is the most popular here?

1 – ...; 2 - ...; 3 - ...; 4 - ...; 5 - ...; 6 - ...; 7 - ...; 8 - ...

TASK 6. Choose the corresponding translation of the words given below.

- | | |
|----------------|--|
| 1. download | - загружать (информацию), пересылать; загрузка, пересылка; загруженный |
| 2. created | - создавать, разрабатывать; создание, разработка; созданный, разработанный |
| 3. dazzling | - ослепительный блеск; выразительный, впечатляющий; любоваться, восхищаться |
| 4. informative | - содержащий информацию; информировать; информация |
| 5. install | - устанавливать; установка; установленный |
| 6. represent | - изображение, отображение; изображать, отображать; изображенный, отображенный |

7. update - измененный, модифицированный; изменение, модификация; изменять, модифицировать
8. utility - эффективность; эффективный
9. valuable - ценный, полезный; оценка, ценность; оценивать
10. versatility - многосторонность, гибкость; многосторонний, гибкий;

TASK 7. Complete the sentences using the correct word.

limited, limit(s), limiting

1. There are no _____ to human knowledge.
2. The available funds of money were _____ .
3. Nothing can travel faster than light, this _____ cannot be overcome.
4. Lack of an address database is a _____ factor.

final, finally

1. We don't yet know the _____ results
2. _____ the consumption of fuel was decreased.
3. _____ they agreed to our terms.

responsible, responsibility

1. He was always a most _____ person.
2. He was one of the three people _____ for the operation.
3. Everything was done upon his _____ .

restricted, restrictions, restrictive

1. The consumption of energy should be _____ .
2. The speed of motor cars on the _____ country's roads was _____ .
3. There were introduced the _____ on full _____ consumption.
4. Certain _____ measures were introduced.

efficient, efficiently, efficiency

1. He is very _____ at work.
2. The work was being carried out most _____ .
3. The _____ of the new method was proved beyond doubt.

TASK 8. Translate the paragraph into your native language.

Some of the things you'll be able to do using the right information:

- Install fully operational GIS software, called ArcExplorer, on your PC. The ArcExplorer™ program isn't a demo that will stop working after a short time. It's yours to install and use for as long as you want.
- Download valuable geographic and demographic data for the ZIP Code where you live.
- View a multimedia gallery of dazzling, informative maps from around the world that were created with GIS software – giving you just a small sample of the power and versatility of this technology.
- Work with more than 500 megabytes of real-world geographic and demographic data on the CD.
- Find links to other GIS sites and data, as well as to software updates and utilities, on the special Web site.

UNIT TWO. The Predicate

The predicate is the second principal part of the sentence which expresses an action, state, or quality of the person or thing denoted by the subject. It is grammatically dependent upon the subject.

**Forms of the Predicate in the Indefinite,
Continuous and Perfect Tenses (Active and Passive)**

	Active	Passive
Present Indefinite	Dots or points represent cities and town on the map.	Lakes are represented by small areas on the map.
Past Indefinite	To download data, I first selected an area of interest.	The description of a feature was known as its attribute.
Future Indefinite	We shall just describe the two types of images. You will use real information from real cities around the world.	Once you start exploring geographic data, you will be astonished by its quantity and its diversity.

Present Continuous	GIS technology is helping people make better decisions in a host of areas, such as natural resources management, environmental control.	Information about who to contact to obtain the data is being found on meteo data sites.
Past Continuous	I was looking for links to other GIS sites and the data, as well as to other software updates and utilities.	Combinations of keywords related to the specific data you were looking for were being used .
Future Continuous	Insurance companies and other organizations will be commonly using this data to determine the flood risk to buildings and properties.	-----
Present Perfect	GIS has been around us for years, but the digital revolution has created , and continues to create, many new applications for the technology.	In addition to the wealth of GIS data available online, many interactive mapping sites have been found .
Past Perfect	State and federal governments had provided the information before it was put on the Internet.	All your data was accessed on your local computer after an Internet connection had been got .
Future Perfect	By the time they explore digital maps they will have got new knowledge.	In a short time the world basemap data from a Web site will have been accessed .

Compound Predicate

(Складений іменний присудок. (Составное именное сказуемое))

The compound predicate consists of two parts: a *link verb* and a *predicative* (some other part of speech: a noun, a pronoun, an adjective, a participle, a gerund, an infinitive). The second component is the significant part of the predicate.

The following are the most common of the link verbs: *to be, to appear, to get, to grow, to continue, to feel, to keep, to look, to turn to hold, to prove, to turn out, to remain, to seem, etc.*

	Ways of expressing the predicative	Examples
1.	Noun	A great source of high-quality topographic maps is a product called <i>Sure!MAPS RASTER</i> .
2.	Noun with a preposition	The latest GIS data are up to date .
3.	Pronoun	Nominal data are those that simply assign a label or class to a feature, such as a mine shaft or a ski resort.
4.	Adjective	Most of the time the files are invisible to you.
5.	Gerund	His hobby was creating maps.
6.	Infinitive	The alternative method is to drag any of the three file types from a Windows folder.

PRACTICE

TASK 1. Define the correct tense form of the predicate matching the left side to the right side. The predicate may be in Present, Past and Future Simple (Active or Passive), in Present and Past Continuous (Active or Passive), Present and Past Perfect (Active or Passive).

- | | | | |
|----|--|----|----------------------------|
| 1. | We <u>have captured</u> data from geologic maps and consulting firm's reports, and from blue-line maps typical of engineering firms. | a. | Present Continuous Passive |
| 2. | Everything <u>is neatly labelled</u> on the map. | b. | Present Indefinite Active |
| 3. | I <u>need</u> access to a PC and to the Internet to experience my knowledge in GIS. | c. | Present Indefinite Passive |
| 4. | How <u>is your own map being made</u> ? | d. | Present Perfect Active |

- | | | | |
|-----|---|----|------------------------------|
| 5. | When you turn on the cities theme, the roads theme, the lakes theme, and the state boundaries theme, you <u>will have</u> a map on your computer screen that pretty much matches the paper map. | e. | Past Indefinite
Passive |
| 6. | He did not have access to the Start menu until he <u>had double-clicked</u> the ArcExplorer button on the desktop. | f. | Past Perfect
Passive |
| 7. | An animated scene in which you were flying down the road as if in a helicopter <u>was created</u> with the right software. | g. | Future Indefinite
Active |
| 8. | A comprehensive set of research initiatives in GIS covering many different areas <u>had been conducted</u> by the group of experts. | i. | Present Continuous
Active |
| 9. | Operational GIS software, called ArtExplorer, <u>will be installed</u> on your computer. | j. | Future Indefinite
Passive |
| 10. | I <u>am just finding</u> listings that provide detailed descriptions and definitions for the fields associated with the census theme. | k. | Past Continuous
Passive |
| 11. | The data set <u>was being designed</u> for display while the team was discussing the map scale. | l. | Past Indefinite
Active |
| 12. | Digital map <u>took up</u> little space because all the information was stored in digital format. | m. | Past Perfect
Active |

1-...; 2-...; 3-...; 4-...; 5-...; 6-...; 7-...; 8-...; 9-...; 10-...; 11-...; 12-...

TASK 2. Translate the sentences into your native language paying attention to the tense form of the predicate.

1. A particular feature of the area **is represented** by a layer of information.
2. You **will be hooked** on GIS!
3. Topographic maps **represent** a three-dimensional surface on a flat piece of paper.
4. The data **will be provided** to you as a compressed file you can download to your

local computer.

5. GIS **is used** by industries and governments worldwide in ways unimaginable only a few years ago.
6. Why **are** the colours representing these features **being changed**?
7. We **had** SCITEX workstations that **were being used** by the USGS to produce digital maps for the 1990 census.
8. Simple desktop scanners **are becoming** important geocoding devices as their resolutions improve and their prices fall.
9. In some cases, just as with the digital map data, the attribute data **will have been found** from an exiting source.
10. GIS **combine** geodata with other types of information and generate maps for better recognition of local problems and more effective solutions.
11. The growth of GIS **has been** marketing phenomenon of amazing breadth and dept and **will remain** so for many years to come.
12. The author **described** how the maps were drafted at the same scale, and how map features **were duplicated** so that maps could be superimposed precisely, using these features as a guide.
13. The history of GIS **has ensured** that this commonality and sharing rarely have taken place.
14. Different search engines **will locate** different sites, and each engine **has** its own features, so it **pays** to try them all to find those that suit you.
15. The mapmaker **tried** using combinations of keywords related to the specific data he **was looking** for.
16. Over the last few years, many books **have been written** to relate to GIS, although not all **have been aimed** at the new GIS user.
17. It **is clear** that maps **were** regularly **traced** onto transparent overlays for use in land analysis and presentation.
18. The emergence of the Internet and e-commerce **has placed** GIS onto the World Wide Web as Web-GIS.
19. After many prototype systems, the DIME (dual independent map encoding)

coding system **was devised** by the U.S. Census Bureau as an experiment in digital mapping and data handling.

20. GIS **has been** around for years, but the digital revolution has created, and continues to create, many new applications for the technology.

TASK 3. Underline the predicate and define the part of speech of the predicative.

1. The source of geographic information is **the map**, and the information on a map consists of a set of geographic symbols, such as colours, lines, patterns, and shades.
2. The best way to search is **to load** a suitable Web browser such as Internet Explorer or Netscape, and then follow your own interest.
3. Unfortunately, these papers are often **hard** to find.
4. Interval values are **those** measured on a relative scale, such as elevations on a datum (based on mean sea level, an arbitrary zero point).
5. A GIS is **flexible** enough to be used for ad hoc query and analysis.
6. If government web sites are **to work** fluently, they have to be based on firm ground.
7. The two major geocoding methods for maps are **digitizing** and **scanning**.
8. You are **in luck** because you live at a time when the quality and quantity of information about the world around you – geographic information – is expanding at an astonishing rate.
9. The simplest GIS ability is **searching** out objects and displaying them.
10. The examples of GIS use are **those** that originate from activities of local administrations.
11. The information about the emergency situation was **out of date**.
12. The obstacles to GIS success are of organizational and GIS managers **nature** and it is their **aim** to prepare and perform institutional change for better technology consumption.

TASK 4. Read the following international words and give all possible corresponding equivalents in your native language.

transport, energy, ecology, natural, comfort, limit, motor, industry, standard, result,

control, harmony, balance, combination, technological, system, fact, progress, aspect, technical, situation, specialization, cooperation, individual, practical, to transform, to function, to coordinate, to minimize, to dominate, to dictate

TASK 5. Find out the initial form of the following words. Give the corresponding translation into your native language.

reflection, efficiency, delivery, municipalities, managed, important, environmental, recognition, geographic, directly, institutional, solving, electronically, planning, economic, expensive, management, monitoring, organization, strategic, referenced

TASK 6. Choose the corresponding translation of the words given below.

1. application - применять, применение, примененный
2. definition - определять определяющий определение
3. efficiency - эффективный; эффективность; давать эффект
4. eventually - конечный; в конечном итоге; конец
5. involvement - вовлекать; вовлечение; вовлекающий
6. pollution - загрязнять; загрязнение; загрязняющий
7. privately - частным образом; частный; частность
8. reflection - отражающий; отражать; отражение
9. relatively - относительно; относительность; отношение
10. responsibility - ответственность; ответственный; отвечать

TASK 7. Complete the sentences using the correct word.

lack, lacks, lacking

1. In the dry climate condition the plants often die for _____ of water.
2. Counting the pages we found that five were _____.
3. That engineer is quite an efficient person but still he _____ the qualities necessary for this kind of work.

track, tracks, tracked

1. In his book the author will _____ the history of the country from ancient times.

2. Transport running on _____ has been widely used in the cities of the 19th century.
3. The group was _____ as far as the village in the mountains and after that all the _____ of it disappeared.

accept, acceptable, acceptability

1. He said he would _____ the invitation.
2. The _____ date for the conference was found.
3. The _____ of the proposition was the main topic of the discussion.

attempted, attempts, attempt

1. They were the first to _____ to climb the mountain.
2. No _____ to solve the problem have so far been successful.
3. That year they _____ to reach the North Pole.

annual, annually

1. The Academy of Sciences holds _____ meetings of its members.
2. He is the author of the _____ review published in the December issue of the magazine.
3. The date is celebrated _____ .

TASK 8. Translate the paragraph into your native language.

A GIS is kind of a super map, computer software that links geographic information (where things are) with descriptive information (what things are like). Unlike a flat paper map, where ‘what you see is what you get,’ a GIS can have many layers of information underneath its surface.

Moreover, that descriptive information is virtually unlimited in both depth and breadth.

If you look at a road on a paper map, about all you see is a name and maybe a highway number. If you click on the same road on a GIS map, you might find not only its name, but also how many lanes it has, when it was built, what the road surface is made of, when it was last painted, and whether you can see that spot on the road from a mountain 20 miles away.

UNIT THREE. The Attribute

An attribute can be either in pre-position or in post-position to the word it modifies.

W a y s o f E x p r e s s i n g t h e A t t r i b u t e

Adjective Прикметник (<i>Прилагательное</i>)	vast territory geographic space
Noun Іменник (<i>Существительное</i>)	the city suburbs the city transport problems my teacher's method the rules of a system
Pronoun Займенник (<i>Местоимение</i>)	our nature their way
Participle Дієприкметник (<i>Причастие</i>)	an engine consuming petrol highly developed industry the methods employed
Gerund Герундій (<i>Герундий</i>)	the idea of limiting speed getting map into the computer
Infinitive Інфінітив (<i>Инфинитив</i>)	the first thing to do the question to be considered the task for you to solve

PRACTICE

TASK 1. Underline the attribute and define the part of speech of the attribute.

1. To use a paper map, all you have to do is unfold it.
2. The attributes in a theme of streets may include a street's name. This book is a interactive introduction to the world of geographic information systems, known as GIS, that combines printed material, a multimedia CD, and the Internet.
3. GIS technology saves millions of dollars through increased productivity an effectiveness.
4. You have a nice aerial photo that will make an interesting background.
5. Your map view looks great.

6. The final map image is in the hands of the mapmaker – you.
7. The United States Government requires an export license or other supporting documentation.
8. The tool to do this is included on the CD.
9. I learned how to take stereo pairs and to set models and to use the floating dot to follow the ground and compile a contour map.
10. Any features to be selected should be marked in advance.
11. Control points to be used in registering the map to the tablet are entered one at a time.
12. There have been efforts to develop a suite of database interaction commands.
13. The digitizing software or GIS may contain editing features, such as delete and add a line or move and snap a point.
14. This mode can easily generate very large data volumes.
15. The type of software used is called COGO, for ‘coordinate geometry’.
16. Many questions must be answered when we set up the database to begin with.
17. This GIS package is slightly different, although all share the items discussed in this section.
18. Errors in topology, missing or duplicate lines, and unsnapped nodes are operator errors.
19. Most data management systems have the ability to generate a report.
20. There is a real advantage in starting from a single, standard data set.

TASK 2. Define the part of speech of the words in bold. Use a dictionary to find out their meanings. Translate the sentences into your native language.

1. **power**

- a. How much **power** does this plant consume?
- b. It was not in his **power** to help us.
- c. The mills were **powered** by water from the local canal.

2. **perfect**

- a. He is a **perfect** stranger to me.
- b. The engineers are still on the way to a perfect engine.

c. They **perfect** and improve their creation.

3. **desire**

a. What do you **desire** most of all?

b. According to his **desires** he was given all the necessary materials.

c. He **desires** to work in the field of designing miniature transistors.

4. **since**

a. I have been here **since** 5 o'clock.

b. Ever **since** I remember him he was interested in mechanics

c. You must stay here for a while **since** the car is out of order.

5. **sign**

a. The agreement was **signed** last year.

b. These sounds are a **sign** of the lack of fuel in the engine.

c. What **signs** are used in arithmetic?

TASK 3. Read the following international words and give all possible corresponding equivalents in your native language.

mechanical, model, gas, alternative, turbine, temperature, cylinder, moment, peak, potential, company, period, exotic, metal, patent, modern, equivalent, factor, centre, radius, computer, organization, electronics, information, automatic, electric, circulation, individual, theory

TASK 4. Find out the initial form of the following words. Give the corresponding translation into your native language.

cooler, compression, conventionally, continually, desirable, durability, heavily, perfection, performance, powerful, quietly, signature, surely, virtually, externally, externally, savings, technical, regulations, determined, spatially, performance, united, consequential

TASK 5. Choose the corresponding translation of the words given below.

1. damaged - повреждать; поврежденный; повреждение

2. boundary - пограничный; граничить
3. directly - прямо; прямой; направлять
4. compressed - сжимать; сжатый; сжатие
5. coverage - охват; охватывать; охваченный
6. extension - удлинение; удлинять; удлиненный
7. heavily - сильно; сильный; усиливать
8. identify - распознавать; распознанный; распознавание
9. powerful - значение; значительный; значить
10. replace - восстановить; восстановленный; восстановление

TASK 6. Translate the following word combinations into your native language.

- | | |
|--|---|
| 1. automatic installation routine | 9. natural resources management |
| 2. image formats | 10. arc/node data structure |
| 3. ArcExplorer map view | 11. government web site |
| 4. goal-oriented communal enterprise | 12. information systems department |
| 5. knowledge management system | 13. group problem-solving |
| 6. specific man-made spatial features | 14. database management system |
| 7. three file types | 15. local decision-making processes |
| 8. geographically-oriented information | 16. First International Advanced Study Symposium on Topological Data Structures |

TASK 7. Translate the paragraph into your native language.

You can use a GIS at home – to show the most scenic route to a vacation spot, to draw maps to a garage sale or for school reports, or to chart the housing prices and SAT scores in an areas where you're thinking of buying a new home.

You can use a GIS at work – to chart where your best customers are likely to live, where the cheapest office space is, or just to find out how many Italian restaurants there are within ten minutes of the office.

Most of this kind of information is a lot easier to get than you might think. Local and state governments, as well as the federal government, provide the bulk of it, and those governments put it on the Internet. What they don't put on the Internet is usually available down at city hall or the county court-house or the local library.

And most of the time, since it's public information, it's free.

UNIT FOUR. The Object

The object is a secondary part of the sentence which completes or restricts the meaning of a verb or sometimes an adjective, a word denoting state, or a noun.

The Ways of Expressing the Object

Noun Именник (<i>Существительное</i>)	MOST GISs use many formats and data structure.
Pronoun Займенник (<i>Местоимение</i>)	Scientists take measurements and record them in some kind of system to help them analyze data.
Infinitive Інфінітив (<i>Инфинитив</i>)	They decided to invest in GIS.
Noun (pronoun) + infinitive Именник (займенник)+ інфінітив (<i>Существительное (местоимение)</i> + <i>инфинитив</i>)	The colour table allows the data file to consist of indices, say, numbers 1, 2, 3, 4 and so forth.
Gerund Герундій (<i>Герундий</i>)	An understanding of error is essential to working effectively with GIS.

PRACTICE

TASK 1. Translate the sentences into your native language paying attention to the ways of expressing the object.

1. The intelligent GIS user should know and understand **the amount and distribution** of error in a GIS database.
2. Many in the study of GIS have focused on **describing and analyzing the impact** rather than **looking** technically at GIS, or at GIS in its application.
3. Grids are poor **at representing points, lines, and areas**, but good **at surfaces**.
4. Using GIS requires **you to think** like a geographic information scientist.
5. Time gives **us** a fourth dimension and becomes a part of the data because events happen in time and features exist over a duration.
6. During the 1980s, the Internet arose out of the collection of early networks, that were beginning **to link** scientist and became a significant new component of computing.
7. Database manager is a computer programme or set of programmes allowing **a user to define** the structure and organization of a database.
8. The first generation of GIS books was targeted more toward the advanced user or expert in GIS who wished **to see** where were **the set of collected readings**.
9. Understanding the way maps are encoded to be used in GIS requires **knowledge of cartography**.
10. How can you make **me** sure that your result from the map is correct?
11. Information about GIS tends **to change** quite frequently.
12. Geographic information has the **characteristic of volume, dimensionality, and continuity**.
13. You are to derive **data** from a selection of commercial data.
14. Working with GIS means **dealing** with data files, themes, and data fields.
15. It means **navigating** code-oriented waters.

TASK 2. Translate the following word combinations into your native language.

1. graphical user interface
9. your new-found knowledge

- | | |
|---|---|
| 2. ESRI licence agreement | 10. major GIS journals |
| 3. dual independent map encoding | 11. certain limited rights |
| 4. natural resource inventory system | 12. highly influential arc/node-based GIS |
| 5. the biannual spatial data handling conference | 13. the United States civilian mapping agencies |
| 6. exchange-unfriendly data set | 14. entirely different computer systems |
| 7. 3-arc second digital terrain data | 15. spatial data transfer standard |
| 8. Environmental Systems Research Institute(ESRI) | 16. object-oriented programming approaches |

(ESRI – is the world leader in GIS modeling and mapping software and technology)

TASK 3. Read the following international words and give all possible corresponding equivalents in your native language.

component, statistics, fatal, constant, risk, periodical, inspection, maximum, geometry, vertical, horizontal, national, effect, commercial, progressive, international, monotony, method, stabilization, material, climate, cement, project, tunnel, implementation, interval

TASK 4. Find out the initial form of the following words. Give the corresponding translation into your native language.

seriously, dangerous, elimination, insurance, alignment, profoundly, contribution, fulfillment, possession, anticipation, slightly, visibility, clearly, arrangement, integrally, sufficiently, alternatively, working, housing, oriented, detailed, description, understandings, relating, duplication, supporting, licence, reexport

TASK 5. Choose the corresponding translation of the words given below.

- | | | |
|-----------------|---|---|
| 1. alignment | - | регулировать; отрегулировать; регулировка |
| 2. anticipation | - | предвидеть; предвидимый; предвидение |
| 3. arrangement | - | устройство; устроенный; устраивать |
| 4. clearly | - | ясный; ясность; ясно |

- | | |
|-----------------|--------------------------------------|
| 5. contribution | - вклад; вкладывать; вложенный |
| 6. elimination | - устранять; устраненный; устранение |
| 7. fulfillment | - выполнять; выполнение; выполняющий |
| 8. possession | - владение; владеть; владеющий |
| 9. visible | - видимый; видимость; видеть |
| 10. visibility | - видеть; видимость; видимый |

TASK 6. Complete the sentences using the correct word.

possess, possession, possessing

1. The material _____ the required qualities was found at last.
2. Can you describe the qualities which this mineral _____?
3. Two halves of an ancient vase were in _____ of two different people, and it took years before a museum managed to buy both of them.

arrange, arrangement, arranged

1. Annual symposium is _____ to begin in September.
2. The _____ of parts in the engine was conventional.
3. Let's _____ the words in the alphabetical order.

fulfil, fulfilment, fulfil

1. They promised to _____ the task in a week.
2. He is a man who always _____ his promises.
3. The _____ of the plan depends on the coordinated efforts of many people.

explore, explorer, explorations

1. A person who travels through an unknown area to find out about it is called an _____.
2. Venice is a wonderful city to _____.
3. You can then use this hut as a base for _____ into the mountains around.

learners, learn, learning

1. The students will _____ from experience about the importance of planning.
2. *Getting Started with GIS* is a perfect book for GIS _____.
3. Motivation is one of the factors that affects the _____ process.

TASK 8. Translate the paragraph into your native language.

Learning GIS is a little like learning to fly. Like flying, there are some basic principles to learn, as well as a new vocabulary – terms like ‘shapefile’ and ‘map units.’ Like flying, it takes practice to get good at it. Like flying, it gives you a whole new way of looking at things.

And like flying, GIS is essentially just a means for you to get out there and discover the world around you on your own.

If you’ve gotten this far, you’re about ready to solo. This last chapter shows you some places to begin bringing the world around you into your own digital maps, and then gives you some ideas about places to go after that.

As Internet use has exploded, so has the amount of geographic data available on the Internet. Once you start exploring it, you’ll be astonished by its quantity and its diversity.

UNIT FIVE. The Adverbial Modifier

The adverbial modifier is a secondary part of the sentence which modifies a verb, an adjective or an adverb.

W a y s o f E x p r e s s i n g t h e A d v e r b i a l M o d i f i e r

Adverb Прислівник (<i>Наречие</i>)	Many of these maps can be read straight into a GIS.
Noun with a preposition Іменник з прийменником (<i>Существительное с предлогом</i>)	The links will be made between the attributes and the features on the map.
Gerund (with a preposition) Герундій (з прийменником) (<i>Герундий (с предлогом)</i>)	Another fairly recent trend is that most GISs also contain a language or macro tool for automating repetitive tasks.
Infinitive Інфінітив (<i>Инфинитив</i>)	Each entry has a link to display information about all the attributes associated with each theme.
Participle Дієприкметник (<i>Причастие</i>)	You connect to the Web site using your browser. Having designed the data, you can display it at a particular scale.

TASK 1. Translate the sentences into your native language paying attention to the ways of expressing the adverbial modifier.

1. These are systematic errors caused by incorrectly entering the control points **for establishing** the geometry.
2. Each of these agencies is worth **covering** here.
3. More information can be found on **the World Wide Web site**.
4. To retrieve the data set, you should both know what data are needed and what format the data are **to be found in**.
5. Two different maps of the same area **rarely** agree over every detail..
6. The cursor may have multiple buttons and may be capable of entering text and data **without using the keyboard**.
7. **Changing down** to the next level, the division level, you reveal a list of departments and departmental directories.
8. **Holding down** the mouse button, drag the mouse pointer down until it's between the AUSTIN(image) and WATER themes, then release the mouse button.
9. Your map view looks **great**.
10. Users can download data **by ZIP Code area**.
11. This simple image format is far better **for storing**.
12. Points and line in raster format have to move **to cell centre**.
13. Image formats are practically simple **to create**.
14. Geographic objects are described **by attribute data** placed in databases originally created **for everyday use** in the municipality.
15. A parallel exists **between GIS data formats and spoken languages**.

TASK 2. Define the part of speech of the words in bold. Use a dictionary to find out their meanings. Translate the sentences into your native language.

1. **encounter**
 - a. Such difficulties are often **encountered** with when crossing rivers in cold climatic conditions.
 - b. In the airport we **encountered** the representative of the competing company.
 - c. The **encounter** of the two teams was televised.

2. **environment**

- a. Home **environment** is an important factor in forming a child's character.
- b. Nuclear tests in all **environments** should be stopped.
- c. **Environmental** factors should always be considered.

3. **project**

- a. The **project** aims to provide the analysis of a locality.
- b. This **projection** is a technical representation of the object on a map
- c. The geographic coordinates were **projected** to several different maps.

4. **support**

- a. I don't think they **support** that version on the program anymore.
- b. Our technical **support** team compared and calculated values based on areas.
- c. Local administrations were **supported** by public and private institutions to precede GIS.

5. **exchange**

- a. Data also are often **exchanged**, or transferred between different GIS packages and computer systems.
- b. Data **exchange** by translation (export and import) can lead to significant errors in attributes and in geometry.
- c. Not **exchanging** or reusing data between projects, especially within a single organization, is a good example of duplication and waste.

TASK 3. Read the following international words and give all possible corresponding equivalents in your native language.

alternative, barrier, triumph, nature, gigantic, dynamite, construction, practice, block, atomic, bomb, army, military, diameter, ideal, financial, client, position, sort, company, association, format, problem, report, consulting, coordinate, combination, public, analysis

TASK 4. Find out the initial form of the following words. Give the corresponding translation into your native language.

excessively, environmental, strictly, attractive, obviously, tightly, obstruction, firmly, immersion, initially, diversion, predictor, sufficiently, wonderful, regulations, direction, restricted, spatially, geographic, government, achievement, package

TASK 5. Choose the corresponding translation of the words given below.

1. assurance - уверенность; уверять; уверенный
2. attraction - притягивать; притяжение; притягательный
3. economic - экономика; экономить; экономный
4. excessive - избыточно; избыточность; избыточный
5. firmly - твердо; твердость; твердый
6. measured - измерять; измеренный; измерение
7. obstruction - препятствовать; препятствующий; препятствие
8. obvious - очевидно; очевидный; очевидность
9. prediction - предсказывать; предсказание; предсказанный
10. tightly - плотность; плотно; уплотнять

TASK 6. Complete the sentences using the correct word.

exploded, explosion, explosive

1. The noise of _____ was heard miles around.
2. This is a highly _____ substance.
3. Dynamite charges will be _____ here.

assured, assurance, assuring

1. He said they could not give any _____.
2. He _____ me that everything would be fine.
3. I got a letter from him _____ me that everything was ready.

strict, strictly

1. We _____ followed the instructions.
2. Airport pavement surface must satisfy _____ requirements.

3. He was given _____ orders which he couldn't disobey.

predicted, prediction, predict

1. No safe methods to _____ an earthquake have been so far devised.

2. The data can be used to make useful economic _____ .

3. Unemployment is _____ to increase to 700,000 by the end of the year.

TASK 7. Translate the paragraph into your native language.

The earth's surface is curved, but maps are flat. To represent three-dimensional space on a two-dimensional surface, a mathematical transformation called a *projection* is used. Many different map projections exist to support a wide variety of uses; maps that you've seen hanging on the walls of a classroom are frequently in Mercator projection. Projections are all distinguished by their ability to represent a particular portion of the earth's surface. A projection that gives an accurate depiction of one portion of the globe may not work for a different portion. For example, the Mercator projection is good for depicting the earth's surface at the equator, but at the cost of distorting features near the north and south poles. This is why Greenland looks bigger than it actually is on Mercator-projection maps.

UNIT SIX. Subordinate Clauses

A complex sentence is composed of one principal clause (the main clause) and one or more subordinate clauses.

Types of Subordinate Clauses.

The Object, Attributive and Adverbial Clauses

Object Clauses <i>Підрядні додаткові речення</i> (Придаточные дополнительные предложения)	The history of GIS has ensured that this commonality and sharing rarely have taken place.
Adverbial Clauses of Time <i>Обставинні речення часу</i> (Обстоятельственные предложения времени)	This is especially important when data are to be captured from a map into the computer.

<p>Adverbial Clauses of Cause <i>Обставинні речення причини</i> (Обстоятельственные предложения причины)</p>	<p>Since the direct path between the two landmarks is through water, you'll need to measure the path in several segments.</p>
<p>Adverbial Clauses of Condition <i>Обставинні речення умови</i> (Обстоятельственные предложения условия)</p>	<p>Many complex errors can result if the GIS user makes a basic mistake in comparing or assembling maps on different projections.</p>
<p>Adverbial Clauses of Purpose <i>Обставинні речення мети</i> (Обстоятельственные предложения цели)</p>	<p>The subject of your map changes to show the distribution of people who graduated from college.</p>
<p>Attributive Clauses <i>Підрядні визначальні речення</i> (Придаточные определительные предложения)</p>	<p>A tool that allows you to explore all this digital information comes free on the CD.</p>
<p>Adverbial Clauses of Concession <i>Обставинні речення поступки</i> (Обстоятельственные предложения уступки)</p>	<p>A geographical information system is designed for a broader range of applications, even though mapping function may represent an important subject of its activities.</p>

TASK 1. Translate the sentences into your native language paying attention to the types of subordinate clauses.

1. In order that there may be possibility to show the most scenic route to a vacation spot, to draw maps to a garage sale or for school report, or to chart the housing prices you can use a GIS at home.
2. This saves a significant amount of space, since the record size is multiplied up for all rows times all columns.
3. Elevations which may be in the thousands of feet or meters need more than one byte per pixel.
4. As a growing and new industry, especially in the early days when there was as yet no major journal where research and applications were published, the various

professional conferences for GIS served as ‘literature.’

5. This means that you could be working with data that fall into four coordinate systems on two projections.
6. The equivalent projection is essential if the analysis within the GIS consists of comparing or calculating areas or values based on areas, such as densities.
7. The buttons create labels using a specified text font that you get from a field in the table.
8. The information element becomes useful to the GIS user because it exists, it has data associated with it, and it has cartographic reality as a feature on a map.
9. Vectors are also not a good structure to use if the maps to be generated involve filling areas with shades or colour.
10. While coordinates are the way that a GIS records information about location, location is just one of the many facets of geographic data.
11. Once geographic features are built from points, lines, and areas, their collective description can consist of measurements of the feature’s size, distribution, pattern orientation, neighbourhood, contiguity, shape, and scale.
12. When using a coordinate system for geocoding in a GIS, we should be sure to remain consistent within that system and to record the relationship between the system and latitude and longitude or some other recognized system.
13. Even though the GIS will directly hold only the coordinates and some additional information, information about every one of the properties will be available by using the tools within the GIS for higher-level analysis.
14. Peter Burrough’s definition implies that GIS is a tool for geographic analysis.
15. Object-oriented programming approaches made radical improvements in the software engineering that could be applied to GIS software and allowed the portability of programmes across many computer platforms.

TASK 2. Define the part of speech of the words in bold. Use a dictionary to find out their meanings. Translate the sentences into your native language.

1. Any object can be represented **using** one of the shapes.

2. There are also any **private** vendors that sell aerial photos and satellite imagery.
3. Coordinates **in** each zone are then numbered off in **meters**.
4. **Traditionally**, cartography has divided data into point, lines, and areas.
5. **The best** example of a continuous variable is probably surface elevation.
6. How **well** you can do this **will** depend on your skills as an intelligent GIS user.
7. Step **one** is to cover how the map is structured as **sets** of digits inside the computer.
8. The most **important** implications of map projections for GIS **are** the following.
9. **Second**, the projection used should **suit** the GIS application.
10. When **we** describe where we are, we usually give the place **with** reference to somewhere else.

TASK 3. Read the following international words and give all possible corresponding equivalents in your native language.

activity, privilege, machine, instrument, complex, logical, medicine, stimulator, apparatus, organ, signal, paradox, metallurgical, cubic, meter, fantastic, robot, talent, culture, category, chemical, radioactive, manipulator, mobile, element, intellect, magnetic, gravitation, physiology, organism

TASK 4. Find out the initial form of the following words. Give the corresponding translation into your native language.

artificially, manager, emission, imaginable, manually, lawful, partially, intention, memorial, sensitive, exclusive, competitive, peculiarity, description, collection, historical, happiness, beautiful, frequent, employable, melodramatic, measurement

TASK 5. Choose the corresponding translation of the words given below.

1. aggravation - ухудшенный; ухудшать; ухудшение
2. enumeration - перечисление; перечисленный; перечислять
3. exclusion - исключительный; исключение; исключительно
4. imagination - воображать; воображение; воображаемый

- | | | |
|----------------|---|--|
| 5. partially | - | частично; частичный; частность |
| 6. peculiarity | - | особенно; особенность; особенный |
| 7. pollute | - | загрязненный; загрязнения; загрязнять |
| 8. positioned | - | располагать; расположенный; расположение |
| 9. raising | - | поднимать; поднятый; поднимающий |
| 10. scientific | - | наука; научный; ученый |

TASK 6. Complete the sentences using the correct word.

progressively, progress, progression

1. Technological _____ means that jobs once done by people are now done by machines.
2. The situation became _____ worse.
3. Europe's _____ towards economic and monetary union is evident.

differetiating, differetiate, differentiaton

1. _____ of labour appeared very early in human history.
2. You must learn to _____ between these two factors.
3. He studied features _____ the two objects.

peculiarity, peculiar

1. The problem is of _____ interest.
2. These plants are _____ the island.
3. He studied the _____ of animal life in the mountains.

enumerated, enumeration, enumerate

1. Where can I find the _____ firms we are trading with?
2. Can you _____ the mistakes found in the programme?
3. The old man quickly _____ the plants found on the island.

managing, manager, management

1. The _____ of the plant thoroughly analyzed the situation.
2. He said he wanted to speak to the _____ .
3. The correspondents wanted to speak to the person who was _____ the farm.

TASK 7. Translate the paragraph into your native language.

A new generation of arc/node structures arrived after the First International Advanced Study Symposium on Topological Data Structures for Geographic Information Systems, held in 1979. This elegant new structure used the arc as the basis for data storage and relied on reconstructing a polygon when it was needed. The way that this was accomplished turned out to have other practical benefits. The system stored point data as before, but included in the file of arcs linked to the points file was an abbreviated 'skeleton' of the arc. This consisted of just the first and last points in the arc, called *end nodes*, and information that related not to this particular arc but to its neighbours in geographic space. This included the arc number of the next connecting arc, and the polygon number of which polygon lay to the left and right of the arc. If the line was just a river or road, this information was not essential. If, however, the arc was part of a network that formed enclosed areas or polygons, the polygon identifier number became the key to polygon construction.

UNIT SEVEN. Clauses with Asyndetical Subordination

(Безсполучникові підрядні речення. (Бессоюзные придаточные предложения))

Types of Clauses with Asyndetical Subordination

Object subordinate clauses <i>Підрядні додаткові речення</i> (<i>Придаточные дополнительные предложения</i>)	Nothing says we have to capture points.
Attributive subordinate clauses <i>Підрядні визначальні речення</i> (<i>Придаточные определительные предложения</i>)	There is no hard and fast rule we have to orient the figure we are using in the projection with the earth's polar or rotation axis.
Subordinate clauses of condition <i>Умовні підрядні речення.</i> (<i>Условные придаточные предложения</i>)	Should you use a database manager, or even a spreadsheet programme on a personal computer, you have probably noticed the files, which hold your records in one place.

TASK 1. Translate the sentences into your native language paying attention to the type of subordinate clauses.

1. Later, we will see this is only the first of many new abilities that georeferencing the data brings.
2. The four systems we cover are the geographical coordinates.
3. Were the lines too fat, they sometimes would be thinned first.
4. Everyone would like to say the data in his or her GIS are accurate and correct.
5. A map we used for geocoding has a particular scale.
6. Were a highly detailed line geocoded only on the nearest 10 meters on the ground, comparison with more detailed data would become problematic.
7. However, even when the attributes and the map are validate by checking, it is still likely the errors exist in the links.
8. Should we make our own database for our own purposes, we have to make the links and check them ourselves.
9. The method helps to decide where to look, what to do when you find what you want, and how to get the data into your GIS.
10. You learned that you can think of digital geographic data, the ones and zeros, as being a series of layers behind a map view.
11. Tables, charts, and photographs showed this material could withstand tremendous stresses without destruction.
12. We hope you will overcome the difficulties you are confronted with.
13. Don't forget learning never ends.
14. Could the GIS operations become so transparent to the public we would not even realize GIS was there.
15. You then preview your data and make adjustments to the size of the area you want to download.

TASK 2. Define the part of speech of the words in bold. Use a dictionary to find out their meanings. Translate the sentences into your native language.

1. **substitute**

1. An effort was made to find a cheap **substitute** for the material.

2. Plastics are found to be reliable **substitutes** for many natural substances.
3. The doctor recommended him to **substitute** tea for coffee.

2. **ratio**

1. The **ratio** of stroke to diameter in the engine is changed.
2. In some towns the population contains a very high **ratio** of young people.
3. The distance covered by the automobile is in direct **ratio** to the time.

3. **pure**

1. The problem of **pure** water and pure air is very insistent.
2. Metals with a high degree of chemical **purity** free from any foreign substances were required.
3. The most advanced methods are used to **purify** drinking water.

4. **feasible**

1. It was quite a **feasible** explanation of the fact.
2. The use of plastics in construction has made **feasible** projects that were impossible before.

5. **grade**

1. These tests demonstrated a high **grade** of intelligence of the students.
2. The engine characteristics on the up **grade** and down grade were carefully controlled.
3. The facts were **graded** and thoroughly analyzed.

TASK 3. Translate the following word combinations into your native language.

- | | |
|---|---|
| 1. a geographic resources analysis support system | 9. Clark University Graduate School of Geography |
| 2. map data configurations | 10. macro-like command |
| 3. schoolroom topographic maps | 11. conference proceedings publications |
| 4. transparent overlay maps | 12. a graduated symbol map |
| 5. a higher precision version | 13. the U.S. Defense Mapping Agency |
| 6. three-dimensional structure | 14. earth's geographic coordinates |
| 7. network-accessible copy | 15. the polygon identifier number |
| 8. absolute minimum amount of symbolism | 16. long-standing source of technical information |

TASK 4. Find out the initial (original) form of the following words. Give the corresponding translation into your native language.

rotation, tremendously, confrontation, substantially, immediately, locality, engagement, thoroughly, destruction, ultimately, purely, resistance, substitution, displacement, complexity, satisfactory, considerable, better, worse

TASK 5. Choose the corresponding translation of the words given below.

1. designed - проектировать; проект; спроектированный
2. application - применяемый; применение; применяющий
3. available - иметь; имеющийся
4. creating - создавать; созданный; создающий
5. distribute - распределять; распределяющий; распределение
6. direct - прямой; направленный; направление
7. performing - исполнять; исполнение; исполненный
8. production - производить, производство, производитель
9. measurement - измерять; измерение; измеренный
10. identifier - идентифицировать; идентификатор; идентичность

TASK 6. Complete the sentences using the correct word.

search, searched

1. The media reported that the _____ was so far unsuccessful.
2. Several _____ parties were sent out.
3. He _____ i old manuscripts for the description of the ancient capital of the country.

withstand, withstood, withstands

1. The material doesn't _____ high temperatures.
2. We need material that _____ Arctic temperatures.
3. No other material _____ the tests so well as this one when we were conducting the experiment.

approach, approaches

1. We were discussing the best _____ to the study of the programme.
2. The bridge was reported impossible to _____.
3. I must say he _____ the problem from a different angle.

destruction, destructions, destructive

1. The factors responsible for the _____ of the bridge were thoroughly analyzed.
2. The _____ forces acting upon the structure must be thoroughly measured.
3. The _____ caused by the Earthquake were reported to be exceedingly high.

enable, enabling, enables

1. High strength of the plastics _____ their use in rocket engineering.
2. Northern plants possess certain qualities _____ them to grow in cold climate conditions.
3. The decision will _____ the project to make progress.

TASK 7. Translate the paragraph into your native language.

The easiest way to avoid errors in geocoding is to ensure that errors are detected as soon as possible and then to make their correction easy. Video display during digitizing and audio feedback for errors messages is essential. GIS software should spell out exactly what will happen in the case of an error. A common geocoding error is to overflow a hard or floppy disk or perhaps a disk-size quota while digitizing. It helps also to be able to recognize error when they appear and to be able to understand their origin.

Some easy-to-detect errors are *slivers, spikes, inversions, lines that are not ended, and unsnapped nodes*. Scaling and inversion errors are when the map appears squashed, like the titles at the beginning of a wide-screen movie shown on TV, or flipped. These are usually due to an incorrect digitizer setup procedure. That is, they are systematic errors caused by incorrectly entering the control points for establishing the map geometry. *Spikes* are random hardware or software errors in which a zero or extremely large data value erroneously replaces the real value in one of the coordinates. Spikes are also sometimes known as *zingers*. Errors in topology, missing or duplicate lines, and unsnapped nodes are operator errors.

TEXTS for READING

TEXT 1. PEOPLE IN GIS

Nils Lasen has been GIS Coordinator and Staff Geologist at IWT, Inc. In Santa Barbara for the last seven years. A native of the Seattle area, his background is in geology, with a Bachelor of Science degree at Western Washington University. Nils moved to California and started working as a soils technician in a soils lab before taking a position at a hydrologic consulting firm, IWT. As the firm became more and more involved in GIS, Nils became responsible for making GIS work in the consulting activity of the company, with a continuing focus on water and the use of digital information in resource exploration.

KC: Nils, did you use computers in college?

NL: There was one programming class in Pascal. I took geography courses in map reading and analysis, where I spent time with paper maps, learning what's on them and how they are put together, what the information means. I've always been interested in maps.

KC: What sort of clients does your company have?

NL: Two main types of clients: private companies that want to develop or to invest in water resource assets or water rights. We do the water resource investigations, finding out how much there is associated with a particular piece of property, then they can decide if they want to purchase that land. Our public clients are typically water districts, water service agencies, and so forth. We help them manage the water resources that they have, find out where the water's coming from, how much is going into the system, where it's getting taken out, where there are contamination problems or overdraft problems.

KC: Those problems are related to the subsurface geology and flow within that complicated structure?

NL: Definitely. The GIS is very helpful for visualizing those problems relative to the geologic structure. We worked for a Water Conservation District in the local area who operate some artificial recharge basins, and also have sea water intrusion and water quality problems. The GIS was instrumental in showing the relationships between them.

KC: What brought you into GIS in your field?

NL: Well, at IWT, we wanted to try and get a jump on some of the competition so we decided to invest in GIS. We had what we thought was somewhat of a specialized field – water resource investigations in fractured bedrock, beyond drilling wells into alluvial basins. The option was whether to go PC-based or workstations. We use NT workstation PCs and some Windows 95 PCs; lots of memory, lots of storage space. We use a large format plotter, a large digitizing tablet and a flatbed scanner.

KC: And what GIS software did you use?

NL: The original suite of software was ArcCad and AutoCad 12, all in DOS then ArcView I and an AutoCad third party package called Quicksurf.

KC: With a scanner and a digitizing tablet you must digitize maps. What kind?

NL: Just about anything that's not in digital form. We've captured data from geologic maps and consulting firms' reports, and from blue-line maps typical of engineering firms.

KC: Is it hard to georegister so many different maps?

NL: The difficulty is when there is no projection or coordinate system on the map. Those are typically blue-line, engineering type maps.

KC: What sort of attribute data do you bring into GIS that you might use in combination with the maps?

NL: If I'm working with well data, then depth, well diameter, water levels, water quality, well perforation interval, aquifer, well ID, owner. These are all typical attributes. For geologic data we use things like the information name, rock type, age, and different levels of classification, such as formation subunits.

KC: If you were going to give advice to an intern or an incoming freshman, what would it be?

NL: Get to know the paper maps, get to know projection systems, datum, the different kinds and why certain ones are used for certain reasons. Area versus shape versus direction issues regarding different projections systems. As well, learn how to read manuals and spend time reading manuals.

KC: Thanks very much Nils.

TEXT 2. ON THE EXPANSION OF GEOGRAPHIC INFORMATION SCIENCE

Over the past few decades, GIS technology spread slowly, often by word of mouth. In many communities, GIS was first used by one person for one specific task. Now, GIS is widespread throughout these communities, used by local governments, utility companies, and private businesses alike.

A dramatic increase in the amount and quality of geographic data has helped enable the spread of GIS. Over the years, people collected data about their communities and assembled it into GIS databases. Local organizations are now finding that by sharing this data, they can coordinate with each other better and be more efficient.

Today, the use of GIS is poised to reach even greater levels as the technology becomes accessible to more people in many new ways. Towns and cities are putting GIS in libraries and other public locations, so people can get information about their communities. Both local governments and private companies are using GIS to make maps and other geographic information available over the World Wide Web. Neighborhood groups and small businesses are discovering that they can use GIS on their desktop and laptop computers.

There are now many ways to use GIS, and many places to find out about it. The Internet is a good place to start. If you have access to the World Wide Web, you can just search for "GIS." You'll turn up lots of sites that are using GIS, as well as sources of software and data.

Many books about GIS are available, covering a wide range of topics. As you explore these sources, you'll see that GIS has many uses beyond the local community. GIS is being used by state and federal agencies to manage water, forests, and wildlife. It's used by universities to track social trends across the country. It's used by private companies to develop national marketing strategies, and to move goods and information around the planet. GIS has even been used to map Mars.

At the community level, though, GIS is having a direct impact on people's daily lives. Whatever your needs and interests, and however you go about it, hopefully you will explore GIS and think about how you can use it where you work and live. But

even if you never use GIS, you now know how digital maps are making life better in communities everywhere, probably even yours.

Vocabulary to the Units

aerial photo	-	снимок, полученный при аэрофотосъемке
(geo) referencing	-	установка в исходное положение; ссылка, обращение; сравнение с образцом, эталоном
ad hoc	-	специальный, устроенный для данной цели
area	-	пространство; зона; район
areal	-	относящийся к площади, ареальный; секторный
attribute	-	свойство, качественный или количественный признак характеризующий пространственный объект, атрибут
census	-	(лат.) учет численности (населения)
chart (v)	-	наносить на карту; составлять карту
chart (n)	-	карта; таблица
commonality	-	общность, простота
contiguity	-	смежность, соприкосновение, близость
court-house	-	здание, в котором помещаются местные органы управления (в графстве или округе)
coverage	-	охват; зона действия; сектор обзора
dazzling	-	(зд.) впечатляющий
delete (v)	-	вычеркивать, стирать, удалять
demo	-	демонстрирование наглядными примерами; обнаружение (свойств, признаков); доказательство
digitizing software	-	программное обеспечение для ввода графической информации
directory	-	руководство, указатель; справочник
distribution	-	распределение; распространение
draft (v)	-	составлять план, чертить, рисовать
due to (prep)	-	благодаря

edit (v)	-	редактировать
editing	-	редактирование
entry	-	отдельная запись; (отдельный) элемент
exchange-unfriendly	-	неудобный для замены, передачи
facet	-	аспект; грань
feasible	-	допустимый, возможный
feature	-	пространственный объект; элемент
flip (v)	-	подбросить; смахнуть, стряхнуть
floating dot	-	плавающая точка
font	-	шрифт
haphazard	-	случайный. бессистемный
host	-	1. (зд.) множество 2. основной механизм, ведущее устройство
imagery	-	образность, образ
landmark	-	ориентир (на местности), репер
layer	-	разрез(чертежа); слой, пласт
Mercator	-	the Flemish geographer and cartographer
Mercator projection	-	the standard map projection for nautical purposes
nautical	-	морской
node	-	точка пересечения двух линий; узловой пункт
parcel	-	участок (земли)
pattern	-	образец; пример; шаблон; схема; (общая) картина; система, структура
peel (v)	-	снимать верхний слой; отделяться, отслаиваться, отходить
poligon	-	многоугольник; замкнутая линия (двухмерный (площадной) объект; внутренняя область, образованная замкнутой последовательностью дуг)
precede (v)	-	предшествовать, быть впереди; превосходить

query	-	вопрос, запрос
reading	-	(измеренное) значение
search engine	-	поисковый инструмент
shapefile	-	файл геометрических данных, конфигурации
sliver	-	скол; расщеп
snap (v)	-	делать моментальный снимок
solo (v)	-	выполнять самостоятельный полет
spell out (v)	-	расшифровать, разобрать (обыкн. с трудом)
squashed	-	сжатый, расплющенный
stack	-	разг. масса, множество; пакет, набор
suite	-	набор, комплект
tablet, digital	-	цифровой планшет (для графического ввода данных,
tablet, digitizer		дигитайзер, устройство для аналого-цифрового преобразования данных
terrain	-	местность, территория
theme	-	тема, предмет
update	-	обновление, корректировка (карт)
utility	-	обслуживающая (сервисная) программа, утилита
validate	-	обосновывать, подтверждать истину
vendor	-	продавец (преим. недвижимости)

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