Module 3 THE MIND OF COMPUTERS

UNIT 7 • COMPUTER LANGUAGES

1 **Make sentences putting the words in the correct order.**

1. interpreters / languages / low-level / compilers / or / don't need

.....

2. language / computers / is / the natural / machine / language / of

.....

3. instruction / interpreters / instruction / by / code / execute

.....

4. language / low-level / is / kind / assembly / a /of / language

.....

5. to / a language / use / HLLs / human language / closer / a natural

.....

6. has / machine / every / own language / processor / it

.....

2 **Read this description of the advantages of structured programming carefully. Then, rewrite them in your own words and in a single paragraph. Use the words in bold type.**

The use of modules in structured programming has several advantages.
First, it enhances the readability of the code because blocks or related logical operations are easier to understand than a less organised approach. This is how you prevent "spaghetti code".
Second, the modules can manage memory separately. For example, a module could set aside a certain section of memory for its computations, then release it when the module is no longer executing.
Third, modules facilitate code reuse. If carefully written, a module (i.e. a subroutine) can be used to support a number of a program's actions.

3 **Choose the best option.**

1. Markup languages … .			
a. are visual languages	**b.** are not programming languages	**c.** run routines	**d.** focus on data presentation and structure
2. Markup indicators are … .			
a. tags and attributes	**b.** windows and menus	**c.** icons	**d.** automation tools
3. HTML introduced … .			
a. bold form	**b.** hyperlinks	**c.** tag concept	**d.** formatting commands
4. The browser … .			
a. defines markup indicators	**b.** establishes headings and paragraphs	**c.** interprets and displays data	**d.** explain how texts are to be edited

4 Write down the definitions of the following.

1. Object: .....
2. Class: .....
3. Instance: .....
4. Method: .....
5. Encapsulation: .....
6. Abstraction: .....
7. Graphical user interface: .....
8. Integrated Development Environment: .....
9. Logical programming languages: .....

5 Choose the correct answer.

1. Visual programming languages are … .			
a. only text based	**b.** object-oriented	**c.** based on images	**d.** markup languages
2. A GUI in a visual language is … .			
a. general utility index	**b.** general user interface	**c.** graphical-user interface	**d.** global unique identifier
3. IDEs … .			
a. facilitate programming	**b.** never underline errors	**c.** don't offer debugger	**d.** present various tags
4. Visual Basic is … .			
a. a pure visual language	**b.** a GUI language	**c.** a logic language	**d.** both a visual and text language

1 Complete the table.

language	year(s)	inventor/developer	type of language and characteristics
C			
C Shell			
C ++			
C#			
Visual C#			
Unified parallel C			
Lite-C			

2 Decide if these statements are true or false.

	T	F
1. HTML is a protocol.	☐	☐
2. A browser displays HTML tags	☐	☐
3. The sequence angle bracket plus slash introduces an opening tag.	☐	☐
4. <head> stands for heading.	☐	☐
5. All HTML documents have the same type of declaration.	☐	☐
6. <form> introduces drawings.	☐	☐
7. <tr> indicates the content of a cell in a table.	☐	☐
8. Smaller frames depend on bigger ones, e.g. <frame2> depends on <frame1>.	☐	☐
9. <html> closes the document.	☐	☐
10. Tags have no structured sequence.	☐	☐

3 Answer the questions.

1. What type of language is Java?
2. What is the Green Team?
3. What were the problems with C++?
4. What are Java source code and bytecode?
5. Why is Java also a platform?
6. What type of platform is Java?
7. What is a virtual machine?
8. What is JIT?
9. What are the advantages of Java Virtual Machine? What is its limit?
10. What is API?

4 Correct these statements.

1. Writing a program means translating a flowchart into complete sentences.
2. All programming languages are compiled.
3. An editor used to write a program is different from traditional text editors.
4. Java is a very difficult programming language.
5. C languages are especially used for business applications.
6. Notepad++ and TextEdit are very expensive.
7. All programs start with "Hello World!".
8. When writing a program you cannot write comments, only instructions.

5 Use this table to write a text in which you compare testing and debugging.

TESTING	DEBUGGING
Finding and locating a defect	Fixing a defect
Carried out by the Testing Team	Carried out by the Development Team
The intention behind it is to find as many defects as possible	The intention is to remove defects

UNIT 9 • OPERATING SYSTEMS

1 Answer the questions.

1. What is an operating system?
2. How does it help the user?
3. What are supervisory programs?
4. What two categories make up service programs?
5. What is the difference between a single program O/S and a multi-user O/S?
6. What is the difference between real time and batch processing?
7. What is the difference between multi-processing and multi-programming?
8. What is meant by virtual storage and virtual machine?

2 PAIR WORK. Discuss in pairs.

1. What type of operating system would be suitable for dealing with applications that process electricity bills?
2. Which two of the following are tasks of an operating system?
   - **a.** controlling traffic lights
   - **b.** operating a washing machine
   - **c.** sending data to a printer
   - **d.** renaming a file
3. Why do mobile devices need a special operating system designed for them?

3 Read the sentences and replace the underlined words with synonyms without changing the meaning of the sentence.

1. A user interface is the means by which the user communicates with the O/S.
2. It is the boundary between the user and the machine and it is how the computer presents itself.
3. Much of the design of the interface is dictated by how the underlying operating system works.
4. The system is quicker to operate.
5. This is still a common way to control a computer.
6. Menu-driven systems display a list of commands or options.
7. Graphical user interfaces are the most popular type of communication system.
8. There is no need to learn commands.

4 PAIR WORK. Describe and compare the UI of your mobile phones (type, layout, how they work, etc.).

5 Answer the questions about Linux and Android.

1. What is Linux?
2. What had already been produced in the 1990s?
3. Who created the kernel?
4. What does its original name Freax mean?
5. Where is it used?
6. What was Linux criticised for in the past?
7. What is the main use of Android?
8. Who creates the apps?

6 Read the text and complete it with the appropriate form of the given verbs.

connect • develop • make • replace • run • target

Microsoft Operating Systems for Servers and Mobile Devices

Apart from operating systems designed for use on personal computers, Microsoft has also (1) ..... operating systems for services, handheld devices, and mobile phones. Windows servers are more powerful versions of their desktop operating system counterparts and are designed to handle corporate networking and databases more efficiently. The first Windows Server (2) ..... its debut in 2003. In 2007, Windows Home Server (WHS) was designed for multiple computers (3) ..... in the home. In 2006 Windows CE, a version for small devices such PDA and handheld computers, was released with a GUI similar to the one (4) ..... on Windows 95. Windows Phone 7, a mobile operating system for smart phones and mobile devices, was developed in 2010 and supplanted Windows Mobile launched in 2000. Windows Phone 7 was (5) ..... more to the consumer market and (6) ..... the traditional Windows look with a new Metro design.

7 Write a personal comment on this statement.

"Together we have the opportunity to bring real technological freedom to every part of the world, across multiple devices and the cloud, and clothed in an elegant, beautiful, experience. It is a bold vision, but our greatest strength in Ubuntu is our community and together we can do this. Come and join us and be a part of bringing Ubuntu to the masses."

(*Jono Bacon, former Ubuntu Community Manager*)