

Chapter 01: An Overview of Computers and Programming

1. Software can be classified into two broad types: application software and programming software.

- a. True
- b. False

ANSWER: False

2. Every programming language has rules governing its word usage and punctuation.

- a. True
- b. False

ANSWER: True

3. Besides the popular, comprehensive programming languages such as Java and C++, many programmers use scripting languages such as Python, Lua, Perl, and PHP.

- a. True
- b. False

ANSWER: True

4. Professional computer programmers write programs to satisfy their own needs.

- a. True
- b. False

ANSWER: False

5. The heart of the programming process lies in planning the program's logic.

- a. True
- b. False

ANSWER: True

6. Once a program is completely coded, it is ready for a company or organization to use.

- a. True
- b. False

ANSWER: False

7. Pseudocode is an English-like representation of the logical steps necessary to solve a problem.

- a. True
- b. False

ANSWER: True

8. An infinite loop is a flow of program logic that repeats and never ends.

- a. True
- b. False

ANSWER: True

9. Alan Turing is often regarded as the first programmer.

- a. True
- b. False

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ANSWER: False

10. Programmers can use either procedural programming or object-oriented programming to develop programs.

- a. True
- b. False

ANSWER: True

11. Organizing or sorting data items, checking them for accuracy, and performing calculations with them are tasks involved in data ____.

- a. processing
- b. inputting
- c. outputting
- d. conversion

ANSWER: a

12. Which type of errors are relatively easy to locate and correct because the compiler or interpreter you use highlights every error?

- a. logic
- b. syntax
- c. input
- d. process

ANSWER: b

13. Which type of error results when you use a syntactically correct statement but it is the wrong one for the current context?

- a. syntax
- b. logical
- c. semantic
- d. line

ANSWER: b

14. A named memory location whose value can vary is called a(n) ____.

- a. input
- b. variable
- c. output
- d. instruction

ANSWER: b

15. Computer programmers often refer to memory addresses using ____ notation.

- a. binary
- b. indirect
- c. mathematical
- d. hexadecimal

ANSWER: d

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16. Before a programmer plans the logic of a program, he or she must ____.

- a. understand the problem the program will solve
- b. write the program's code
- c. test that program
- d. maintain that program

ANSWER:

a

17. After a programmer plans the logic of a program, the next step is to ____.

- a. understand the problem the program will solve
- b. test the program
- c. translate the program into machine language
- d. code the program

ANSWER:

d

18. The process of walking through a program's logic on paper before you actually write the program is called ____.

- a. desk-checking
- b. flowcharting
- c. pseudocoding
- d. testing

ANSWER:

a

19. Typically, a programmer develops a program's logic, writes the code, and then receives a list of syntax errors upon attempting to ____ the code.

- a. run
- b. compile
- c. execute
- d. test

ANSWER:

b

20. The process of finding and correcting program errors is called ____.

- a. desk-checking
- b. syntax-checking
- c. compiling
- d. debugging

ANSWER:

d

21. Making necessary changes to a program that has already been put into production is called ____.

- a. debugging
- b. conversion
- c. maintenance
- d. testing

ANSWER:

c

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22. Planning using which tool involves writing down all the steps you will use in a program?

- a. compiler
- b. interpreter
- c. desk-checking
- d. pseudocode

ANSWER:

d

23. In a flowchart, which symbol is used to represent processing?

- a. lozenge
- b. diamond
- c. parallelogram
- d. rectangle

ANSWER:

d

24. Which symbol is used to represent output in a flowchart?

- a. square
- b. lozenge
- c. parallelogram
- d. triangle

ANSWER:

c

25. Which shape is the standard terminal symbol for a flowchart?

- a. parallelogram
- b. lozenge
- c. diamond
- d. square

ANSWER:

b

26. The repetition of a series of steps is called a(n) ____.

- a. logic error
- b. loop
- c. flow
- d. algorithm

ANSWER:

b

27. A repeating flow of program logic with no end is called a(n) ____.

- a. algorithm
- b. infinite loop
- c. variable
- d. decision symbol

ANSWER:

b

28. You represent a decision in a flowchart by drawing a decision symbol, which is shaped like a ____.

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- a. parallelogram
- b. square
- c. diamond
- d. circle

ANSWER:

c

29. What term is used in many programming languages to refer to a code that the language can use to automatically recognize the end of data in a file?

- a. data_end
- b. end_data
- c. eof
- d. eod

ANSWER:

c

30. To enter a program into a computer so you can translate and execute it, you usually use a keyboard to type program statements into a(n) ____.

- a. command line
- b. input screen
- c. IDE's editor
- d. word processor

ANSWER:

c

31. What type of program do you use to create simple text files?

- a. text editor
- b. IDE
- c. GUI
- d. compiler

ANSWER:

a

32. A software package that provides an editor, a compiler, and other programming tools is called a(n) ____.

- a. GUI
- b. CGI
- c. GDE
- d. IDE

ANSWER:

d

33. Which application provides a location on your computer screen where you can type text commands to communicate with the computer's operating system?

- a. input line
- b. debugger
- c. command line
- d. IDE

ANSWER:

c

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34. One difference between programming environments and user environments is that _____.
a. user environments provide tools that allow you to step through a program's execution one statement at a time
b. the logical process of a program will vary depending on the type of user environment available to end users
c. software with a user environment cannot be used to plan program logic by preparing a flowchart or pseudocode
d. programming environments allow you to enter program statements while taking advantage of features such as automatic completion of statements and syntax error highlighting

ANSWER: d

35. The major difference between the two main programming styles in use today is the _____.
a. use of flowcharts versus pseudocode
b. testing procedure used by the programmer
c. programmer's focus during the earliest planning stages of a project
d. programming language used

ANSWER: c

36. When instructions are carried out by a computer, a program runs, or _____.
a. executes
b. is compiled
c. crashes
d. is interpreted

ANSWER: a

37. The sequence of steps necessary to solve a problem _____.
a. is called its documentation
b. cannot be expressed using pseudocode
c. is called an algorithm
d. should be determined after writing the code for the solution

ANSWER: c

38. Sam is drawing a flowchart for a program that calculates state, county, and local sales taxes for a given purchase amount in dollars. What symbol should he use to represent the purchase amount?
a. rectangle
b. parallelogram
c. racetrack or lozenge shape
d. arrow

ANSWER: b

39. One way to provide an exit from an infinite program loop that collects user input is to assign to a certain value the meaning "Stop the program!" The program will then exit the loop and continue to the next instruction when the user enters this _____.
a. dummy variable
b. output
c. terminal symbol

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- d. sentinel value

ANSWER:

d

40. A procedural programmer would approach a problem by dividing the process into manageable subtasks.

- a. True
b. False

ANSWER:

True

41. The equipment, or the physical devices, associated with a computer are called _____.

- a. software
b. hardware
c. applications
d. operating systems

ANSWER:

b

42. Instructions that tell a computer what to do _____.

- a. are not considered part of a computer system
b. are known as computer hardware
c. are called data items and must follow syntax rules
d. are called software and written as programs

ANSWER:

d

43. Sam is writing a report for school using a word processor when—oh no!—the power line outside is blown by the wind and power to the desktop computer is cut off. Thankfully, the data from Sam's report is not lost because it was placed in _____.

- a. computer memory
b. random access memory
c. nonvolatile storage
d. computer memory

ANSWER:

c

44. Machine language _____.

- a. represents the millions of on/off circuits within a computer
b. is more human readable than binary language
c. must be translated into object code for the computer to run
d. is run through an interpreter to produce source code

ANSWER:

a

45. If, when coding a program, Sam incorrectly spells a keyword, forgets to insert a punctuation mark, or reverses the proper order of two words, which type of mistake has Sam made?

- a. syntax error
b. volatile error
c. logical error
d. compiler error

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ANSWER:

a

46. When Sam types a Python script into a text editor, Sam is coding a program.

- a. True
- b. False

ANSWER:

True

47. Which statement in the pseudocode below is an example of a processing operation?

```
input listPrice
discountedPrice = listPrice - (listPrice * discount)
output discountedPrice
```

- a. input listPrice
- b. discountedPrice = listPrice - (listPrice * discount)
- c. output discountedPrice
- d. None of these pseudocode statements is an example of a processing operation.

ANSWER:

b

48. One thing that all popular programming languages have in common is that the programs written in them must be converted into machine language—consisting of only 0s and 1s—before the computer can understand them.

- a. True
- b. False

ANSWER:

True

49. Machine language is an example of a high-level programming language, whereas Java and Visual Basic are examples of low-level programming languages.

- a. True
- b. False

ANSWER:

False

50. Conversion ____.

- a. is the process of translating source code into machine language
- b. means making necessary changes to a program after it has been put into production
- c. is the entire set of actions an organization must take to switch over to using a new program or program suite
- d. typically takes only hours to, at most, a few days, even in large organizations

ANSWER:

c