

UNIT 1—GETTING STARTED WITH JAVA

CHAPTER 1—BACKGROUND

EXERCISE 1.2

1. What is the difference between a bit and a byte.
2. Name two input devices and two output devices
3. What is the purpose of auxillary storage devices?
4. What is RAM and how is it used?
5. Discuss the difference between hardware and software.

EXERCISE 1.3

1. Translate 11100011_2 to a base 10 number.
2. Translate $45B_{16}$ to a base 10 number.
3. What is the difference between Unicode and ASCII?
4. Assume that 4 bits are used to represent the intensities of red, green, and blue. How many total colors are possible in this scheme?
5. An old-fashioned computer has just 16 bits available to represent an address of a memory location. How many total memory locations can be addressed in this machine?

EXERCISE 1.4

1. State two of the difficulties of programming with machine language.
2. State two features of assembly language.
3. What is a loader, and what is it used for?
4. State one difference between a high-level language and assembly language.

EXERCISE 1.5

1. What happens during the Analysis and Design phase of the waterfall model of software development?
2. Which phase of the waterfall model of software development incurs the highest cost to developers?
3. Why would a programmer back up to an earlier phase in the waterfall model of software development?
4. In which phase of the waterfall model of software development is the detection and correction of errors the least expensive?

EXERCISE 1.6

1. In what way is programming like planning the construction of a house?

REVIEW QUESTIONS

Written Questions

1. What are the three major hardware components of a computer?
2. Name three input devices.
3. Name two output devices.
4. What is the difference between application software and system software?
5. Name a first-generation programming language, a second-generation programming language, and a third-generation programming language.

Fill in the Blank

1. All information used by a computer is represented using _____ notation.
2. The _____ phase of the software life cycle is also called the coding phase.
3. More than half of the cost of developing software goes to the _____ phase of the software life cycle.

4. ACM stands for _____
5. Copyright law is designed to give fair use to the public and to protect the rights of _____ and _____

CRITICAL THINKING

You have just written some software that you would like to sell. Your friend suggests that you copyright your software. Discuss why this might be a good idea.