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Chapter 2 Written Homework
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Exercises 1-14 (pgs. 24-25)

1. Mark the following statements as true or false.
    a. The first device known to carry out calculations was the Pascaline.
        i. **False**
    b. Modern-day computers can accept spoken-word instructions but cannot imitate human reasoning.
        i. **True**
    c. In ASCII coding, every character is coded as a sequence of 8 bits.
        i. **False**
    d. A compiler translates a high-level program into assembly language.
        i. **True**
    e. The arithmetic operations are performed inside the CPU, and if an error is found, it outputs the logical errors.
        i. **True**
    f. A sequence of 0s and 1s is called a decimal code.
        i. **False**
    g. A linker links and loads the object code from main memory into the CPU for execution.
        i. **False**
    h. Development of a C++ program includes six steps.
        i. **True**
    i. A program written in a high-level programming language is called a source program.
        i. **True**
    j. ZB stands for zero byte.
        i. **False**
    k. The first step in the problem-solving process is to analyze the problem.
        i. **True**
    l. In object-oriented design, a program is a collection of interacting functions.
        i. **False**
2. What are the basic commands performed by a computer?
    a. **Functions**
3. Name three hardware components.
    a. **Keyboard, Mouse, CPU**
4. Why is secondary storage needed?
    a. **It is used to permanently store data, as information stored in main memory is lost when the computer is turned off.**
5. What is the function of an operating system?

    a. **Without an operating system, the computer is useless. The operating system monitors the overall activity of the computer and provides services.**
6. What are the two types of programs?
    a. **Structured and OOP**
7. What are the differences between machine languages and high-level languages?
    a. **Machine language consists of 0s and 1s. High-level languages are much easier for humans to understand, but they must be compiled so the computer can understand them.**
8. What is a source program?
    a. **A source program is a program written in a high-level language.**
9. Why do you need a compiler?
    a. **A compiler is needed to convert high-level languages into machine language.**
10. What kind of errors are reported by a compiler?
    a. **Syntax errors**
11. Why do you need to translate a program written in a high-level language into machine language?
    a. **The computer only understands machine language.**
12. Why would you prefer to write a program in a high-level language rather than machine language?
    a. **It is much easier to understand high-level language than remembering sequences of 1s and 0s.**
13. What is linking?
    a. **Linking is when a linker links the libraries to the code.**
14. What are the advantages of problem analysis and algorithm design over directly writing a program in a high-level language?
    a. **There will be a cleaner result and one will have a better understanding of how to solve the problem instead of just tackling it head on blindly.**