**1.1 Fill in the blanks in each of the following statements**:

a) The company that popularized personal computing was **Apple**.

b) The computer that made personal computing legitimate in
business and industry was the **IBM Personal computer**.

c) Computers process data under the control of sets of instructions called **Programms**.

d) The key logical units of the computer are **the input unit , output
unit, memory unit, central processing unit, arithmetic and logic unit** and **secondary
storage unit**.

e) The three types of languages discussed in the chapter are **machine languages,
assembly languages** and **high-level languages**.

f) The programs that translate high-level language programs into machine language are
called **compilers**.

g) **Android** is a smartphone operating system based on the Linux kernel and Java.

h) **Release candidate** software is generally feature complete and (supposedly) bug free, and
ready for use by the community.

i) The Wii Remote, as well as many smartphones, use a(n) **accelerometer** which allows the
device to respond to motion.

**1.2** Fill in the blanks in each of the following sentences about
the Java environment:

a) The **Java** command from the JDK executes a Java application.
b) The **Javac** command from the JDK compiles a Java program.

c) A Java program file must end with the **java** file extension.

d) When a Java program is compiled, the file produced by the compiler ends with the **class**
file extension.

e) The file produced by the Java compiler contains **bytecodes** that are executed by the Java
Virtual Machine.

**1.3 Fill in the blanks in each of the following statements (based on Section 1.6**):

a) Objects have the property of **information hiding** —although objects may know how to
communicate with one another across well-defined interfaces, they normally are not
allowed to know how other objects are implemented.

b) Java programmers concentrate on creating **classes**, which contain fields and the set of methods that manipulate those fields and provide services to clients.

c) The process of analyzing and designing a system from an object-oriented point of view is called **object oriented analysis and design**.

d) With **The Unified Modeling Language (UML)** new classes of objects are derived by absorbing characteristics of existing classes, then adding unique characteristics of their own.

**1.6** Fill in the blanks in each of the following statements:
a) Java programs normally go through five phases **edit, compile, load, verify and executes.**

b) A(n) **Integreted development environment (IDE)** provides many tools that support the software development process, such as editors for writing and editing programs, debuggers for locating logic errors in
programs, and many other features.

c) The command java invokes the **Java Virtual Machine (JVM).** , which executes Java programs.

d) A(n) **virtual machine**(VM) is a software application that simulates a computer, but hides the underlying operating system and hardware from the programs that interact with it.

e) The **class loader** takes the .class files containing the program's bytecodes and transfers them to primary memory.

f) The **bytecode verifier** examines bytecodes to ensure that they're valid.

**1.6 What is the difference between fatal errors and nonfatal errors? Why might you prefer to experience a fatal error rather than a nonfatal error?**

**ANS:** Fatal runtime errors cause program to terminate immediately without having successfully performed their jobs. Nonfatal runtime errors allow programs to run to completion, often producing incorrect results.
Fatal errors may be preferable, because they are obvious and easy to find.