Chapter 3

Answers

3.5: A *function prototype* is a declaration of a function that tells the compiler only the function's name, its return type and the types of its parameters whereas a *function definition* contains all the above details along with its implementation code.

3.6: A *constructor* is a special type of function used to initialize the data member of an object whenever a new object is created. In the absence of an explicit constructor function, the class assumes the default constructor function corresponding to the data type of the variables. This is to ensure that the data member is initialized properly. For example, for a class without a constructor containing a string variable, an empty string is assigned to the string variable each time a new object is created.

3.7: A *data member* is a variable declared inside the class's definition but outside the member functions' bodies. Unlike a local variable which can only be accessed by the function that constitutes it, a data member can be accessed and modified by all member functions of the class. Every instance of the class has its own copy of data members and retains it throughout its life.

3.8: A *header* is a skeleton version of a class's definition that enlists the names of the member functions, the data input and return types and the data members contained in the class. However, it does not reveal the implementation details of its member functions. A header file usually takes the class's name with an extension *.h*. It also facilitates the reusability of the class definition in other programs using pre-processor directives.

A source file contains the implementation details of the member functions of the class. It usually takes the same name as the header file with an extension .cpp. The function definitions of the source code are linked to the class header file by preprocessor directives (#include "[classname].h") and binary scope resolution operator (::).

3.9 Using *binary scope resolution operator* "::" before the word string and refer to the C++ standard library "std" every time the class string is called. Example: "std::string"

3.10 A class provides a set function and get function to make sure that the class attributes can only be accessed and modified by the member functions of the class.