

Exercises – Classes

1. Create a class called Date. The class should contain variables and functions to store and retrieve a date in the form DD/MM/YYYY
2. Create a class declaration named Circle with a private member variable names radius.
 - a. Write set and get functions to access the radius variable
 - b. Write a getArea function that returns the area of the circle
 - c. Write a getDiameter function that returns the diameter of the circle
 - d. Write a getCircumference functions that returns the circumference of the circle
3. Create a high scores class to hold three high scores. The class should have getters and setters. Create a function that will return the average of the three high scores.
4. Create a class representing a zombie. Each zombie should have a health and attack value, and a previous occupation. Ensure that the zombie's variables are private and there are functions to access and modify the zombie's data.
 - a. Using the zombie class, create a game in which a small number of zombies attack each other until only one remains!
5. Create a simple trivia game for two players. The program will work like this:
 - a. Starting with player 1, each player gets a turn at answering 2 trivia questions. (There are 4 questions, 2 for each player.) When a question is displayed, four possible answers are also displayed. Only one of the answers is correct, and if the player selects the correct answer, he or she earns a point.
 - b. After answers have been selected for all of the questions, the program displays the number of points earned by each player and declares the player with the highest number of points the winner.

You are to design a Question class to hold the data for a trivia question. The Question class should have character array fields for the following data:

A trivia question

Possible answer 1

Possible answer 2

Possible answer 3

Possible answer 4

The number of the correct answer (1, 2, 3, or 4)

The Question class should have appropriate set and get methods. The program should create an array of 4 Question objects, one for each trivia question. Make up your own trivia questions on the subject or subjects of your choice for the objects.

Optional exercise

1. Create an inventory system for an RPG style game; this will involve creating two classes
 - a. An item class containing the name, weight, a flag to indicate whether or not the item is stackable, stack count, and appropriate methods.
 - b. An inventory class containing a list of items, and data and methods appropriate to controlling the inventory
 - c. The program should allow you to add and remove items from the inventory and display a list of all the items in the inventory. Make sure you split your program into multiple files.