CSC 241

Exercise 1

Create a class that maintains a bowling game. A template for the bowling class and a driver is provided in the Extra Files under Content.

You can learn more about the game of bowling at the following site:

http://slocums.homestead.com/gamescore.html

Here is a site you can use to compute the score of a bowling game:

http://www.sportcalculators.com/bowling-score-calculator

Notice how the score is updated after each frame.

a) First create the **BowlingGame** class. Objects of this class represent a single game of bowling for a given player. A **BowlingGame** object should maintain the player's name, current score and frame, and a count of strikes, spares, and gutter balls, etc. The provided files are already set up with the data members, and methods: constructor, **toString**, **getFrame** and **getScore** for the **BowlingGame** object.

In order to complete the Exercise, the shot method needs to be implemented and tested. The **shot** method takes an **int** as a parameter and returns a **boolean** value depending on whether or not there is another shot available in a given frame. If there is not a shot left, the method will return **false**. Assume the shot method is only given valid input that holds true to the rules of bowling. For example, if we are in the first frame, the **shot** method will return **true** if the first value is a 5 and then return **false** after the next value for that frame. However, if the first shot of a frame is a 10, then the **shot** method will return **false** for the second shot (unless it is the 10^{th} frame).

The shot method will maintain the **scores** for each frame, the count of: **strikes**, **spares**, and **gutterballs**, the **frame**, and the **shot** for the frame.

Remember, the 10^{th} frame does allow a third shot if there is a strike or spare amongst the first two shots. If a player gets a strike on the first shot of the 10^{th} frame and then a gutter ball, the player still gets a third shot.

Keep in mind, you are not keeping track of the actual score frame-by-frame, yet.