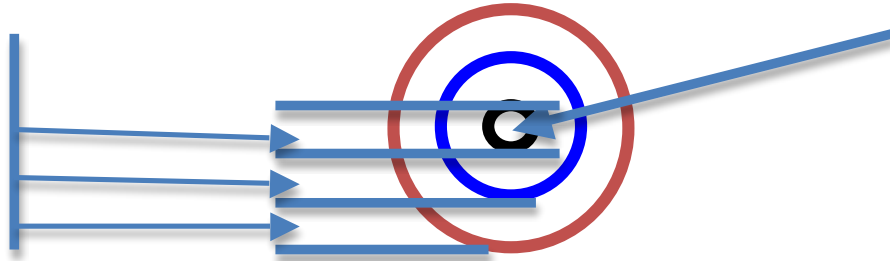# CISC 110 Lab 3

Modified Game

The target is composed of three concentric rings: an outer ring, a middle ring, and the inner circle (Bull-s eye). The diameter of the inner circle and the width of both the middle ring and outer ring is 20 pixels. The center point of the target is at position (100, 150).

However, now there are three players and only one level (so we don't keep track of levels). The game consists of each of the three players making three shots at the target. After they each make three shots, the game is over and we need to calculate their scores to see who won. Since we will need to calculate a new score after each shot (9 times), we will want to define functions for our calculations, rather than cut and paste code 9 times.

Here is what you need to do:

1. Download the file Lab2.fla (the link labeled Lab 2 Solution) from the course web page or open your solution to Lab 2, whichever you prefer. Also, download the starting file for Lab 3: Lab3Start.fla (the link labeled Lab 3 Start File).

2. Read through the Lab3Start.fla file, being sure you understand everything there. Note that there are variable declarations to represent the names, shots, and scores of three players. Define the functions described in the following steps using some of the code from the Lab 2 solution, modifying it as needed. After defining each function, try calling it with some sample values to ensure it's correct.

3. Write the definition for a function called displayInfo that displays the current information about a player: their last shot and current score. This information is passed into the function via the parameters, so the function just has to display it. Here is the start of your function:

   ```
   /*      Display a player's name, last shot position, and current score
   *       Parameters:
   *            playerName: name of player
   *            shotX: x-coordinate of last shot
   *            shotY: y-coordinate of last shot
   *            score: player's current score
   ```

```
      */
      function displayInfo( playerName: String, shotX: int, shotY: int, score: int )
      {
            //  YOUR CODE GOES HERE
      } // end displayInfo
```

4.   Write the definition for a function called newScore that calculates the new score for a player after a shot. Note that if they miss the target, the score is not changed.

```
      /* Calculate player's new score after they have shot at target
      *  Parameters:
      *                 score: the player's current score
      *                 shotX: the x-coordinate of the player's shot
      *                 shotY: the y-coordinate of the player's shot
      *  Returns: the player's new score (possibly unchanged)
      */
      function newScore( score: int, shotX: int, shotY: int ): int
      {
            // YOUR CODE GOES HERE
      } // end newScore
```

5. Write the definition for a function called findWinner that compares the final scores of the three players and returns the name of the winner. (Assume no ties.)

```
      /* Determines who won the game, given the players' final scores
      *  Parameters:
      *                 score1:  the score of player 1
      *                 score2:  the score of player 2
      *                 score3:  the score of player 3
      *  Returns:  the name of the winning player
      */
      function findWinner( score1: int, score2: int, score3: int ): String
      {
            // YOUR CODE GOES HERE
      } // end findWinner
```

6. Write the function calls that will use the functions you've defined to calculate the scores of the three players after they've finished shooting and determine who has won. Calculate a new score for each player and display the player info after each shot (so you will need 9 calls to the newScore function and 9 calls to the displayInfo function). Then call the findWinner function and display the result with a congratulatory message.

Notice the style used for functions (above) and if-else statements (in the Lab 2 solution): names, commenting, and indentation. Use the same style as this.