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/* ***************************************************************
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The purpose of this program is to provide a multiple choice quiz on
various sports questions using different variables, assignments
and expressions.
*************************************************************** */

import javax.swing.*;
import java.util.Random;
import java.io.*;

class MiniProFinal {

  public static void main(String[] args) throws IOException {

    String ans = JOptionPane.showInputDialog("Do you want to reload your old scores Yes or
No"); // Gives user option to reload previous results.
    if (ans.equalsIgnoreCase("Yes")) {
    BufferedReader input = new BufferedReader(new FileReader("Table.txt")); // Creates text file
that stores results.
    String []Lines = new String[11];

    for (int i = 0; i <= 10; i++)
    {
      Lines[i] = input.readLine();
      print(Lines[i]);
    }
    input.close();
   }

    Question[] questionArray = question();
    String[] returnedStringArray = askquestion(questionArray);
    boolean[] returnedBooleanArray = response(returnedStringArray);
    int[] returnedDiceArray = diceroll(returnedBooleanArray);
    bubble_srt(returnedDiceArray, returnedStringArray, questionArray);
    table(returnedDiceArray, returnedStringArray, questionArray);

    PrintWriter output = new PrintWriter(new FileWriter("Table.txt"));
    output.println("Score Table:");
    for(int i = 9; i >= 0; i--) {
    output.println(getQuestion(questionArray[i]) + ": " + returnedDiceArray[i]); // prints out the
sorted previous scores saved to the text file.
    }
    output.close();

    System.exit(0);

  } //END main


  // This methods sets the value for each of the 10 questions and saves them to a Question
array.
  public static Question[] question() {
    Question q1 = new Question();
    q1 = setQuestion(q1, "Question 1: Which sport uses the smallest ball?");
    Question q2 = new Question();
    q2 = setQuestion(q2, "Question 2: How yellow cards are given to a Football player before he
recieves a red card?");
    Question q3 = new Question();
    q3 = setQuestion(q3, "Question 3: How many minutes are there in a Football game?");
    Question q4 = new Question();
    q4 = setQuestion(q4, "Question 4: How many points are required to win a set in Tennis?");
    Question q5 = new Question();
    q5 = setQuestion(q5, "Question 5: How many rounds are there in a professional Boxing
match?");
    Question q6 = new Question();
    q6 = setQuestion(q6, "Question 6: How many teams are there in the English Premier
League?");
    Question q7 = new Question();
    q7 = setQuestion(q7, "Question 7: How high off the ground is a NBA basketball hoop?");
    Question q8 = new Question();
    q8 = setQuestion(q8, "Question 8: How many quarters are there in a NBA basketball
game?");
    Question q9 = new Question();
    q9 = setQuestion(q9, "Question 9: Which was the first country to qualify for a World Cup?");
    Question q10 = new Question();
    q10 = setQuestion(q10, "Question 10: Who was the first ever Cricket player to reach 10 000
test runs?");

    Question[] questionArray = new Question[10];
    questionArray[0] = q1;
    questionArray[1] = q2;
    questionArray[2] = q3;
    questionArray[3] = q4;
    questionArray[4] = q5;
    questionArray[5] = q6;
    questionArray[6] = q7;
    questionArray[7] = q8;
    questionArray[8] = q9;
    questionArray[9] = q10;

    return questionArray;
  } //END question


  // this method gives an introduction to the quiz and prints out the 10 questions asking the user for an input, this is then stored in a String array.
  public static String[] askquestion(Question[] questionArray) {
    JOptionPane.showMessageDialog(null, "Welcome user");
    JOptionPane.showMessageDialog(null, "Today you will be completing a multiple choice quiz on sports");
    String answer1 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[0]) + "<br>A: Basketball<br>B: Football<br>C: Tennis<br>D: Table Tennis");
    String answer2 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[1]) + "<br>A: 1<br>B: 2<br>C: 3<br>D: 4");
    String answer3 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[2]) + "<br>A: 30<br>B: 110<br>C: 90<br>D: 50");
    String answer4 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[3]) + "<br>A: 30<br>B: 60<br>C: 45<br>D: 70");
    String answer5 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[4]) + "<br>A: 12<br>B: 9<br>C: 8<br>D: 10");
    String answer6 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[5]) + "<br>A: 30<br>B: 15<br>C: 18<br>D: 20");
    String answer7 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[6]) + "<br>A: 10<br>B: 12<br>C: 9<br>D: 15");
    String answer8 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[7]) + "<br>A: 5<br>B: 4<br>C: 8<br>D: 3");
    String answer9 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[8]) + "<br>A: Algeria<br>B: Ghana<br>C: Egypt<br>D: Nigeria");
    String answer10 = JOptionPane.showInputDialog(null, "<html>" + getQuestion(questionArray[9]) + "<br>A: Sachin Tendulkar<br>B: Ricky Ponting<br>C: Sunil Gavaskar<br>D: Alastair Cook");

    String[] returnedStringArray = new String[10];
    returnedStringArray[0] = answer1;
    returnedStringArray[1] = answer2;
    returnedStringArray[2] = answer3;
    returnedStringArray[3] = answer4;
    returnedStringArray[4] = answer5;
    returnedStringArray[5] = answer6;
    returnedStringArray[6] = answer7;
    returnedStringArray[7] = answer8;
    returnedStringArray[8] = answer9;
    returnedStringArray[9] = answer10;

    return returnedStringArray;
  } //END askquestion


  // this method checks the answer to each question and assigns a boolean value to the answer
which depends on whether the answer is correct, these values are also stored into an array.
  public static boolean[] response(String[] returnedStringArray) {
    boolean success1, success2, success3, success4, success5, success6, success7, success8,
success9, success10;
        if (returnedStringArray[0].equalsIgnoreCase("D")) {
          success1 = true;
        } else {
          success1 = false;
        }

        if (returnedStringArray[1].equalsIgnoreCase("B")) {
          success2 = true;
        } else {
          success2 = false;
        }

        if (returnedStringArray[2].equalsIgnoreCase("C")) {
          success3 = true;
        } else {
          success3 = false;
        }

        if (returnedStringArray[3].equalsIgnoreCase("B")) {
          success4 = true;
        } else {
          success4 = false;
        }

        if (returnedStringArray[4].equalsIgnoreCase("A")) {
          success5 = true;
        } else {
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      success5 = false;
    }

    if (returnedStringArray[5].equalsIgnoreCase("D")) {
      success6 = true;
    } else {
      success6 = false;
    }

    if (returnedStringArray[6].equalsIgnoreCase("A")) {
      success7 = true;
    } else {
      success7 = false;
    }

    if (returnedStringArray[7].equalsIgnoreCase("B")) {
      success8 = true;
    } else {
      success8 = false;
    }

    if (returnedStringArray[8].equalsIgnoreCase("C")) {
      success9 = true;
    } else {
      success9 = false;
    }

    if (returnedStringArray[9].equalsIgnoreCase("C")) {
      success10 = true;
    } else {
      success10 = false;
    }

boolean[] returnedBooleanArray = new boolean[10];
returnedBooleanArray[0] = success1;
returnedBooleanArray[1] = success2;
returnedBooleanArray[2] = success3;
returnedBooleanArray[3] = success4;
returnedBooleanArray[4] = success5;
returnedBooleanArray[5] = success6;
returnedBooleanArray[6] = success7;
returnedBooleanArray[7] = success8;
returnedBooleanArray[8] = success9;
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    returnedBooleanArray[9] = success10;

    return returnedBooleanArray;
  } //END response


  // In this method the boolean values for the answers are used in a for loop which rolls a dice each time a question is correct and assigns that dice score to the answer.
  public static int[] diceroll(boolean[] returnedBooleanArray) {
    int score = 0;
    int dice1 = 0;
    int dice2 = 0;
    int dice3 = 0;
    int dice4 = 0;
    int dice5 = 0;
    int dice6 = 0;
    int dice7 = 0;
    int dice8 = 0;
    int dice9 = 0;
    int dice10 = 0;
    for (int i = 1; i <= 10; i++) {
      if (i == 1) {
        if (returnedBooleanArray[0]) {
          Random roll = new Random();
          dice1 = roll.nextInt(6) + 1;
          print("Question 1 is correct, you have recieved " + dice1 + " marks");
        } else {
          print("Question 1 is incorrect, no marks given");
        }
      }

      if (i == 2) {
        if (returnedBooleanArray[1]) {
          Random roll = new Random();
          dice2 = roll.nextInt(6) + 1;
          print("Question 2 is correct, you have recieved " + dice2 + " marks");
        } else {
          print("Question 2 is incorrect, no marks given");
        }
      }

      if (i == 3) {
        if (returnedBooleanArray[2]) {
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    Random roll = new Random();
    dice3 = roll.nextInt(6) + 1;
    print("Question 3 is correct, you have recieved " + dice3 + " marks");
  } else {
    print("Question 3 is incorrect, no marks given");
  }
}

if (i == 4) {
  if (returnedBooleanArray[3]) {
    Random roll = new Random();
    dice4 = roll.nextInt(6) + 1;
    print("Question 4 is correct, you have recieved " + dice4 + " marks");
  } else {
    print("Question 4 is incorrect, no marks given");
  }
}

if (i == 5) {
  if (returnedBooleanArray[4]) {
    Random roll = new Random();
    dice5 = roll.nextInt(6) + 1;
    print("Question 5 is correct, you have recieved " + dice5 + " marks");
  } else {
    print("Question 5 is incorrect, no marks given");
  }
}

if (i == 6) {
  if (returnedBooleanArray[5]) {
    Random roll = new Random();
    dice6 = roll.nextInt(6) + 1;
    print("Question 6 is correct, you have recieved " + dice6 + " marks");
  } else {
    print("Question 6 is incorrect, no marks given");
  }
}

if (i == 7) {
  if (returnedBooleanArray[6]) {
    Random roll = new Random();
    dice7 = roll.nextInt(6) + 1;
    print("Question 7 is correct, you have recieved " + dice7 + " marks");
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      } else {
        print("Question 7 is incorrect, no marks given");
      }
    }

    if (i == 8) {
      if (returnedBooleanArray[7]) {
        Random roll = new Random();
        dice8 = roll.nextInt(6) + 1;
        print("Question 8 is correct, you have recieved " + dice8 + " marks");
      } else {
        print("Question 8 is incorrect, no marks given");
      }
    }

    if (i == 9) {
      if (returnedBooleanArray[8]) {
        Random roll = new Random();
        dice9 = roll.nextInt(6) + 1;
        print("Question 9 is correct, you have recieved " + dice9 + " marks");
      } else {
        print("Question 9 is incorrect, no marks given");
      }
    }

    if (i == 10) {
      if (returnedBooleanArray[9]) {
        Random roll = new Random();
        dice10 = roll.nextInt(6) + 1;
        print("Question 10 is correct, you have recieved " + dice10 + " marks");
      } else {
        print("Question 10 is incorrect, no marks given");
      }
    }
    }
    score = score + dice1 + dice2 + dice3 + dice4 + dice5 + dice6 + dice7 + dice8 + dice9 +
dice10; // sums each of the dice scores to give a total score.
    print("your total score is " + score);

    int[] returnedDiceArray = new int[10];
    returnedDiceArray[0] = dice1;
    returnedDiceArray[1] = dice2;
    returnedDiceArray[2] = dice3;
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      returnedDiceArray[3] = dice4;
      returnedDiceArray[4] = dice5;
      returnedDiceArray[5] = dice6;
      returnedDiceArray[6] = dice7;
      returnedDiceArray[7] = dice8;
      returnedDiceArray[8] = dice9;
      returnedDiceArray[9] = dice10;
      return returnedDiceArray;
   } //END diceroll


   // this bubblesort method compares the values together and switches position depending on
which value in  the comparisson is larger.
   public static void bubble_srt(int[] returnedDiceArray, String[] returnedStringArray, Question[]
questionArray) {
        int n = returnedDiceArray.length;
        int k;
        for (int m = n; m >= 0; m--) {
            for (int i = 0; i < n - 1; i++) {
                k = i + 1;
                if (returnedDiceArray[i] > returnedDiceArray[k]) {
                    swapDice(i, k, returnedDiceArray, returnedStringArray, questionArray); // calls upon
swap dice to switch the values for array positions (k) and (i).
                }
            }
        }
    return;
    } //END bubble_srt


  // this method asks the user if they would like to print out a table of the sorted values starting
from the highest score.
  public static void table(int[] returnedDiceArray, String[] returnedStringArray, Question[]
questionArray){
   String option = JOptionPane.showInputDialog(null, "Do you want to print out a table of
answers, Yes or No");
   if (option.equalsIgnoreCase("Yes"))
   {
    JOptionPane.showMessageDialog(null, "<html>" + getQuestion(questionArray[9]) + "
Answer: " + returnedStringArray[9] + "  Marks: " + returnedDiceArray[9] + "<br>"
                                                            + getQuestion(questionArray[8]) + "  Answer: " +
returnedStringArray[8] + "  Marks: " + returnedDiceArray[8] + "<br>"
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                                        + getQuestion(questionArray[7]) + "  Answer: " +
returnedStringArray[7] + "  Marks: " + returnedDiceArray[7] + "<br>"
                                        + getQuestion(questionArray[6]) + "  Answer: " +
returnedStringArray[6] + "  Marks: " + returnedDiceArray[6] + "<br>"
                                        + getQuestion(questionArray[5]) + "  Answer: " +
returnedStringArray[5] + "  Marks: " + returnedDiceArray[5] + "<br>"
                                        + getQuestion(questionArray[4]) + "  Answer: " +
returnedStringArray[4] + "  Marks: " + returnedDiceArray[4] + "<br>"
                                        + getQuestion(questionArray[3]) + "  Answer: " +
returnedStringArray[3] + "  Marks: " + returnedDiceArray[3] + "<br>"
                                        + getQuestion(questionArray[2]) + "  Answer: " +
returnedStringArray[2] + "  Marks: " + returnedDiceArray[2] + "<br>"
                                        + getQuestion(questionArray[1]) + "  Answer: " +
returnedStringArray[1] + "  Marks: " + returnedDiceArray[1] + "<br>"
                                        + getQuestion(questionArray[0]) + "  Answer: " +
returnedStringArray[0] + "  Marks: " + returnedDiceArray[0]);
   }
   else {}
   return;
   } //END table


  // This method is used to assign temp values to each of the (i) arrays and swap them around
with the (k) arrays.
  private static void swapDice(int i, int k, int[] returnedDiceArray, String[] returnedStringArray,
Question[] questionArray) {
       int temp1;
       String temp2;
       Question temp3;
       temp1 = returnedDiceArray[i];
       temp2 = returnedStringArray[i];
       temp3 = questionArray[i];
       returnedDiceArray[i] = returnedDiceArray[k];
       returnedDiceArray[k] = temp1;
       returnedStringArray[i] = returnedStringArray[k];
       returnedStringArray[k] = temp2;
       questionArray[i] = questionArray[k];
       questionArray[k] = temp3;
  } //END swapDice


  public static String getQuestion(Question q) {
    return q.q;
  } //END getQuestion

  public static Question setQuestion(Question q, String question) {
    q.q = question;
    return q;
  } //END setQuestion

  public static void print(String message) {
    System.out.println(message);
    return;
  } //END print

}

class Question {
  String q; // record for each of the 10 questions in the questionnaire.
} //END class Question
ohis program is to provide a multiple choice quiz on
various sports questions using different variables, assignments
and expressions.
************************************************************** */

import javax.swing.*;
import java.util.Random;
import java.io.*;

class MiniProFinal {

  public static void main(String[] args) throws IOException {

    String ans = JOptionPane.showInputDialog("Do you want to reload your old scores Yes or
No"); // Gives user option to reload previous results.
    if (ans.equalsIgnoreCase("Yes")) {
    BufferedReader input = new BufferedReader(new FileReader("Table.txt")); // Creates text file
that stores results.
    String []Lines = new String[11];

    for (int i = 0; i <= 10; i++)
    {
      Lines[i] = input.readLine();
      print(Lines[i]);
    }
    input.close();
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   }

    Question[] questionArray = question();
    String[] returnedStringArray = askquestion(questionArray);
    boolean[] returnedBooleanArray = response(returnedStringArray);
    int[] returnedDiceArray = diceroll(returnedBooleanArray);
    bubble_srt(returnedDiceArray, returnedStringArray, questionArray);
    table(returnedDiceArray, returnedStringArray, questionArray);

    PrintWriter output = new PrintWriter(new FileWriter("Table.txt"));
    output.println("Score Table:");
    for(int i = 9; i >= 0; i--) {
    output.println(getQuestion(questionArray[i]) + ": " + returnedDiceArray[i]); // prints out the
sorted previous scores saved to the text file.
    }
    output.close();

    System.exit(0);

  } //END main


  // This methods sets the value for each of the 10 questions and saves them to a Question
array.
  public static Question[] question() {
    Question q1 = new Question();
    q1 = setQuestion(q1, "Question 1: Which sport uses the smallest ball?");
    Question q2 = new Question();
    q2 = setQuestion(q2, "Question 2: How yellow cards are given to a Football player before he
recieves a red card?");
    Question q3 = new Question();
    q3 = setQuestion(q3, "Question 3: How many minutes are there in a Football game?");
    Question q4 = new Question();
    q4 = setQuestion(q4, "Question 4: How many points are required to win a set in Tennis?");
    Question q5 = new Question();
    q5 = setQuestion(q5, "Question 5: How many rounds are there in a professional Boxing
match?");
    Question q6 = new Question();
    q6 = setQuestion(q6, "Question 6: How many teams are there in the English Premier
League?");
    Question q7 = new Question();
    q7 = setQuestion(q7, "Question 7: How high off the ground is a NBA basketball hoop?");
    Question q8 = new Question();
    q8 = setQuestion(q8, "Question 8: How many quarters are there in a NBA basketball
game?");
    Question q9 = new Question();
    q9 = setQuestion(q9, "Question 9: Which was the first country to qualify for a World Cup?");
    Question q10 = new Question();
    q10 = setQuestion(q10, "Question 10: Who was the first ever Cricket player to reach 10 000
test runs?");

    Question[] questionArray = new Question[10];
    questionArray[0] = q1;
    questionArray[1] = q2;
    questionArray[2] = q3;
    questionArray[3] = q4;
    questionArray[4] = q5;
    questionArray[5] = q6;
    questionArray[6] = q7;
    questionArray[7] = q8;
    questionArray[8] = q9;
    questionArray[9] = q10;

    return questionArray;
  } //END question


  // this method gives an introduction to the quiz and prints out the 10 questions asking the user
for an input, this is then stored in a String array.
  public static String[] askquestion(Question[] questionArray) {
    JOptionPane.showMessageDialog(null, "Welcome user");
    JOptionPane.showMessageDialog(null, "Today you will be completing a multiple choice quiz
on sports");
    String answer1 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[0]) + "<br>A: Basketball<br>B: Football<br>C: Tennis<br>D: Table
Tennis");
    String answer2 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[1]) + "<br>A: 1<br>B: 2<br>C: 3<br>D: 4");
    String answer3 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[2]) + "<br>A: 30<br>B: 110<br>C: 90<br>D: 50");
    String answer4 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[3]) + "<br>A: 30<br>B: 60<br>C: 45<br>D: 70");
    String answer5 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[4]) + "<br>A: 12<br>B: 9<br>C: 8<br>D: 10");
    String answer6 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[5]) + "<br>A: 30<br>B: 15<br>C: 18<br>D: 20");
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    String answer7 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[6]) + "<br>A: 10<br>B: 12<br>C: 9<br>D: 15");
    String answer8 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[7]) + "<br>A: 5<br>B: 4<br>C: 8<br>D: 3");
    String answer9 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[8]) + "<br>A: Algeria<br>B: Ghana<br>C: Egypt<br>D: Nigeria");
    String answer10 = JOptionPane.showInputDialog(null, "<html>" +
getQuestion(questionArray[9]) + "<br>A: Sachin Tendulkar<br>B: Ricky Ponting<br>C: Sunil
Gavaskar<br>D: Alastair Cook");

    String[] returnedStringArray = new String[10];
    returnedStringArray[0] = answer1;
    returnedStringArray[1] = answer2;
    returnedStringArray[2] = answer3;
    returnedStringArray[3] = answer4;
    returnedStringArray[4] = answer5;
    returnedStringArray[5] = answer6;
    returnedStringArray[6] = answer7;
    returnedStringArray[7] = answer8;
    returnedStringArray[8] = answer9;
    returnedStringArray[9] = answer10;

    return returnedStringArray;
  } //END askquestion


  // this method checks the answer to each question and assigns a boolean value to the answer
which depends on whether the answer is correct, these values are also stored into an array.
  public static boolean[] response(String[] returnedStringArray) {
    boolean success1, success2, success3, success4, success5, success6, success7, success8,
success9, success10;
        if (returnedStringArray[0].equalsIgnoreCase("D")) {
          success1 = true;
        } else {
          success1 = false;
        }

        if (returnedStringArray[1].equalsIgnoreCase("B")) {
          success2 = true;
        } else {
          success2 = false;
        }
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if (returnedStringArray[2].equalsIgnoreCase("C")) {
  success3 = true;
} else {
  success3 = false;
}

if (returnedStringArray[3].equalsIgnoreCase("B")) {
  success4 = true;
} else {
  success4 = false;
}

if (returnedStringArray[4].equalsIgnoreCase("A")) {
  success5 = true;
} else {
  success5 = false;
}

if (returnedStringArray[5].equalsIgnoreCase("D")) {
  success6 = true;
} else {
  success6 = false;
}

if (returnedStringArray[6].equalsIgnoreCase("A")) {
  success7 = true;
} else {
  success7 = false;
}

if (returnedStringArray[7].equalsIgnoreCase("B")) {
  success8 = true;
} else {
  success8 = false;
}

if (returnedStringArray[8].equalsIgnoreCase("C")) {
  success9 = true;
} else {
  success9 = false;
}

if (returnedStringArray[9].equalsIgnoreCase("C")) {
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          success10 = true;
        } else {
          success10 = false;
        }

    boolean[] returnedBooleanArray = new boolean[10];
    returnedBooleanArray[0] = success1;
    returnedBooleanArray[1] = success2;
    returnedBooleanArray[2] = success3;
    returnedBooleanArray[3] = success4;
    returnedBooleanArray[4] = success5;
    returnedBooleanArray[5] = success6;
    returnedBooleanArray[6] = success7;
    returnedBooleanArray[7] = success8;
    returnedBooleanArray[8] = success9;
    returnedBooleanArray[9] = success10;

    return returnedBooleanArray;
  } //END response


  // In this method the boolean values for the answers are used in a for loop which rolls a dice
each time a question is correct and assigns that dice score to the answer.
  public static int[] diceroll(boolean[] returnedBooleanArray) {
    int score = 0;
    int dice1 = 0;
    int dice2 = 0;
    int dice3 = 0;
    int dice4 = 0;
    int dice5 = 0;
    int dice6 = 0;
    int dice7 = 0;
    int dice8 = 0;
    int dice9 = 0;
    int dice10 = 0;
    for (int i = 1; i <= 10; i++) {
      if (i == 1) {
        if (returnedBooleanArray[0]) {
          Random roll = new Random();
          dice1 = roll.nextInt(6) + 1;
          print("Question 1 is correct, you have recieved " + dice1 + " marks");
        } else {
          print("Question 1 is incorrect, no marks given");
  }
}

if (i == 2) {
  if (returnedBooleanArray[1]) {
    Random roll = new Random();
    dice2 = roll.nextInt(6) + 1;
    print("Question 2 is correct, you have recieved " + dice2 + " marks");
  } else {
    print("Question 2 is incorrect, no marks given");
  }
}

if (i == 3) {
  if (returnedBooleanArray[2]) {
    Random roll = new Random();
    dice3 = roll.nextInt(6) + 1;
    print("Question 3 is correct, you have recieved " + dice3 + " marks");
  } else {
    print("Question 3 is incorrect, no marks given");
  }
}

if (i == 4) {
  if (returnedBooleanArray[3]) {
    Random roll = new Random();
    dice4 = roll.nextInt(6) + 1;
    print("Question 4 is correct, you have recieved " + dice4 + " marks");
  } else {
    print("Question 4 is incorrect, no marks given");
  }
}

if (i == 5) {
  if (returnedBooleanArray[4]) {
    Random roll = new Random();
    dice5 = roll.nextInt(6) + 1;
    print("Question 5 is correct, you have recieved " + dice5 + " marks");
  } else {
    print("Question 5 is incorrect, no marks given");
  }
}
```

```
if (i == 6) {
  if (returnedBooleanArray[5]) {
    Random roll = new Random();
    dice6 = roll.nextInt(6) + 1;
    print("Question 6 is correct, you have recieved " + dice6 + " marks");
  } else {
    print("Question 6 is incorrect, no marks given");
  }
}

if (i == 7) {
  if (returnedBooleanArray[6]) {
    Random roll = new Random();
    dice7 = roll.nextInt(6) + 1;
    print("Question 7 is correct, you have recieved " + dice7 + " marks");
  } else {
    print("Question 7 is incorrect, no marks given");
  }
}

if (i == 8) {
  if (returnedBooleanArray[7]) {
    Random roll = new Random();
    dice8 = roll.nextInt(6) + 1;
    print("Question 8 is correct, you have recieved " + dice8 + " marks");
  } else {
    print("Question 8 is incorrect, no marks given");
  }
}

if (i == 9) {
  if (returnedBooleanArray[8]) {
    Random roll = new Random();
    dice9 = roll.nextInt(6) + 1;
    print("Question 9 is correct, you have recieved " + dice9 + " marks");
  } else {
    print("Question 9 is incorrect, no marks given");
  }
}

if (i == 10) {
  if (returnedBooleanArray[9]) {
    Random roll = new Random();
```

```
          dice10 = roll.nextInt(6) + 1;
          print("Question 10 is correct, you have recieved " + dice10 + " marks");
        } else {
          print("Question 10 is incorrect, no marks given");
        }
      }
      }
      score = score + dice1 + dice2 + dice3 + dice4 + dice5 + dice6 + dice7 + dice8 + dice9 +
dice10; // sums each of the dice scores to give a total score.
      print("your total score is " + score);

      int[] returnedDiceArray = new int[10];
      returnedDiceArray[0] = dice1;
      returnedDiceArray[1] = dice2;
      returnedDiceArray[2] = dice3;
      returnedDiceArray[3] = dice4;
      returnedDiceArray[4] = dice5;
      returnedDiceArray[5] = dice6;
      returnedDiceArray[6] = dice7;
      returnedDiceArray[7] = dice8;
      returnedDiceArray[8] = dice9;
      returnedDiceArray[9] = dice10;
      return returnedDiceArray;
   } //END diceroll


   // this bubblesort method compares the values together and switches position depending on
which value in  the comparisson is larger.
   public static void bubble_srt(int[] returnedDiceArray, String[] returnedStringArray, Question[]
questionArray) {
        int n = returnedDiceArray.length;
        int k;
        for (int m = n; m >= 0; m--) {
            for (int i = 0; i < n - 1; i++) {
                k = i + 1;
                if (returnedDiceArray[i] > returnedDiceArray[k]) {
                    swapDice(i, k, returnedDiceArray, returnedStringArray, questionArray); // calls upon
swap dice to switch the values for array positions (k) and (i).
                }
            }
        }
    return;
    } //END bubble_srt
```

```
  // this method asks the user if they would like to print out a table of the sorted values starting
from the highest score.
  public static void table(int[] returnedDiceArray, String[] returnedStringArray, Question[]
questionArray){
   String option = JOptionPane.showInputDialog(null, "Do you want to print out a table of
answers, Yes or No");
   if (option.equalsIgnoreCase("Yes"))
   {
    JOptionPane.showMessageDialog(null, "<html>" + getQuestion(questionArray[9]) + "
Answer: " + returnedStringArray[9] + "  Marks: " + returnedDiceArray[9] + "<br>"
                                            + getQuestion(questionArray[8]) + "  Answer: " +
returnedStringArray[8] + "  Marks: " + returnedDiceArray[8] + "<br>"
                                            + getQuestion(questionArray[7]) + "  Answer: " +
returnedStringArray[7] + "  Marks: " + returnedDiceArray[7] + "<br>"
                                            + getQuestion(questionArray[6]) + "  Answer: " +
returnedStringArray[6] + "  Marks: " + returnedDiceArray[6] + "<br>"
                                            + getQuestion(questionArray[5]) + "  Answer: " +
returnedStringArray[5] + "  Marks: " + returnedDiceArray[5] + "<br>"
                                            + getQuestion(questionArray[4]) + "  Answer: " +
returnedStringArray[4] + "  Marks: " + returnedDiceArray[4] + "<br>"
                                            + getQuestion(questionArray[3]) + "  Answer: " +
returnedStringArray[3] + "  Marks: " + returnedDiceArray[3] + "<br>"
                                            + getQuestion(questionArray[2]) + "  Answer: " +
returnedStringArray[2] + "  Marks: " + returnedDiceArray[2] + "<br>"
                                            + getQuestion(questionArray[1]) + "  Answer: " +
returnedStringArray[1] + "  Marks: " + returnedDiceArray[1] + "<br>"
                                            + getQuestion(questionArray[0]) + "  Answer: " +
returnedStringArray[0] + "  Marks: " + returnedDiceArray[0]);
   }
   else {}
   return;
   } //END table


  // This method is used to assign temp values to each of the (i) arrays and swap them around
with the (k) arrays.
  private static void swapDice(int i, int k, int[] returnedDiceArray, String[] returnedStringArray,
Question[] questionArray) {
       int temp1;
       String temp2;
       Question temp3;
```

```
      temp1 = returnedDiceArray[i];
      temp2 = returnedStringArray[i];
      temp3 = questionArray[i];
      returnedDiceArray[i] = returnedDiceArray[k];
      returnedDiceArray[k] = temp1;
      returnedStringArray[i] = returnedStringArray[k];
      returnedStringArray[k] = temp2;
      questionArray[i] = questionArray[k];
      questionArray[k] = temp3;
  } //END swapDice


  public static String getQuestion(Question q) {
    return q.q;
  } //END getQuestion

  public static Question setQuestion(Question q, String question) {
    q.q = question;
    return q;
  } //END setQuestion

  public static void print(String message) {
    System.out.println(message);
    return;
  } //END print

}

class Question {
  String q; // record for each of the 10 questions in the questionnaire.
} //END class Question
```