ReflectionLog: MathTutor

Youdis

```
import java.util.Scanner;
import java.text.DecimalFormat;
public class mathtutor
{

    Run | Debug
    public static void main(String args[])
    {
            // Create a Scanner object to take input from the user
            Scanner Input = new Scanner(System.in);

            // Create a DecimalFormat object to format answers to two decimal places
            DecimalFormat formatter = new DecimalFormat(pattern:"#.##");
```

Imported scanner and decimal format and created new scanner and decimalformat to be used later on

```
    // Generate two random numbers between 1 and 10
    int randNum1 = (int)(((10 - 1 + 1)*Math.random()) + 1);
    int randNum2 = (int)(((10 - 1 + 1)*Math.random()) + 1);

    // Set the operation type (1: +, 2: -, 3: *, 4: /) - currently always division
    int randOpNum = (int)(((4 - 1 + 1)*Math.random()) + 1);
```

Declared and initialized the 2 for equation and a number from1 to 4 in another variable to help decide what operation to use with the first 2 randomized numbers.

```
    double answer, userAns;
```

Declared variable for answer for equation created and another variable to record what the user thinks the answer is

```
// Use a switch statement to choose the operation based on randOpNum
switch(randOpNum) {
    // Case 1: Addition
    case 1:
        // Calculate sum
        answer = randNum1 + randNum2;
        //Prompt user for their answer then record what they input
        System.out.print("What is " + randNum1 + " + " + randNum2 + ":");
        userAns = Input.nextInt();

        // Check if the user's answer is correct
        if (userAns == answer) {
            System.out.print(s:"correct");
        } else {
            System.out.print(s:"Incorrect");
        }
        break;
```

Use switch case on random number for operators case one is addition where both randomized numbers will be added and user will input their answer then both will be compared if they are the same user wins.

```
        // Case 2: Subtraction
        case 2:
            // Calculate difference
            answer = randNum1 - randNum2;
            //Prompt user for their answer then record what they input
            System.out.print("What is " + randNum1 + " - " + randNum2 + ":");
            userAns = Input.nextInt();

            // Check if the user's answer is correct
            if (userAns == answer) {
                System.out.print(s:"correct");
            } else {
                System.out.print(s:"Incorrect");
            }
            break;

        // Case 3: Multiplication
        case 3:
            // Calculate product
            answer = randNum1 * randNum2;
            //Prompt user for their answer then record what they input
            System.out.print("What is " + randNum1 + " * " + randNum2 + ":");
            userAns = Input.nextInt();

            // Check if the user's answer is correct
            if (userAns == answer) {
                System.out.print(s:"correct");
            } else {
                System.out.print(s:"Incorrect");
            }
            break;
```

In case 2 its the same as case number 1 but instead of adding the 2 numbers this time we find the difference of them then compare it to the user's answer. In case 3 it's the same but its multiplication of the two numbers.

```java
// Case 4: Division
case 4:
    // Calculate quotient with division of two numbers as double values
    answer = (((Double.valueOf(randNum1) / Double.valueOf(randNum2))));

    // Format the correct answer to two decimal places
    String formatAns = formatter.format(answer);

    // Ask the user for the quotient and remind them to round to hundredth place
    System.out.print("What is " + randNum1 + " / " + randNum2 + " Please answer to the hundredth place rounded: ");
    userAns = Input.nextDouble();

    // Format the user's answer to two decimal places
    String formattedUserAns = formatter.format(userAns);

    // Compare correct answer with  user answer
    if (formattedUserAns.equals(formatAns)) {
        System.out.print(s:"correct");
    } else {
        System.out.print(s:"Incorrect");
    }
    break;
```

In case 4 it's the same thing but with division of the 2 numbers but we ask the user for their answer up to the hundredth place and format the answer the computer generated by using decimalformat to format it to the hundredths place.