

CECS 220 Assignment #1

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To solve Problem #1: The Future Value Calculator, first a scanner must be used for reading user inputs. To use scanner class, import from java.util.Scanner. Next, a function is needed to calculate the future values, a private function is created taking two double parameters investment amount and interest rate, then one integer parameter which is year. Doubles interestValue and total are declared in which interestValue is equal to  $1 + \text{interest rate to the years specified}$ . Total is equal to the investment amount times the interestValue. In the main function the user is prompted for the investment amount and interest rate. The scanner reads the inputs, then the calculator function is used to use the user inputs and calculate 3 times to 5, 10, and 20 years. The results are then outputted to the user, then the program terminates.

The following snapshots are of success and attempts to break the program by not using decimals.

```
<terminated> Main (1) [Java Application] C:\P
Enter investment amount:
100
Enter interest rate as a decimal:
.2
5 Years:
$248.83
10 Years:
$619.17
20 Years:
$3833.76
```

```
Enter investment amount:
100
Enter interest rate as a decimal:
10
Re-Enter interest rate as a decimal
10
Re-Enter interest rate as a decimal
.06
5 Years:
$133.82
10 Years:
$179.08
```

To solve Problem #2: The Coins, first import `javax.swing` for `JFrame` and `java.awt` for graphics and color. Use the paint function from graphics to create the circles required for the coins. The following functions must be used to draw, set the color, fill the circles, and add the string: `drawOval`, `setColor`, `fillOval`, `drawString`. Next, in the main, create a `JFrame`, set the size and default close of the `JFrame`, and then create a `Circles` object named `coins`, add that to the `JFrame`, then lastly set the `JFrame` to visible.

The following is a snapshot of the coins in `JFrame`.

