

ASSIGNMENT 1

Compound Interest Calculator

Due Date: Friday, 30th Sep., 11:59 PM PDT

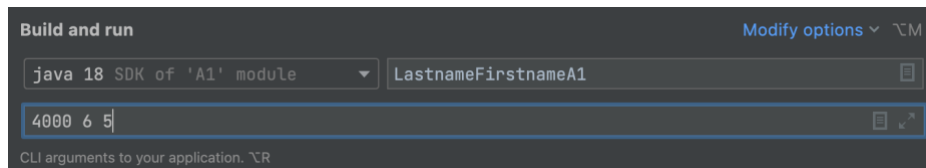
Morty decided to save early and start a compound interest saving account. Create a compound interest* calculation Java class to help Morty determine the **total amount in his account** given an original deposit amount (P), an annual interest rate (R), and time in years (T), assuming interest will be **compounded quarterly**†.

Requirements:

1. Create and execute your program using IntelliJ IDEA.
2. Name your Java class ***LastnameFirstnameA1*** (replace LastnameFirstname with your name).
3. Pass P, R, T as command-line arguments.

```
java LastnameFirstnameA1 4000 6 5    //in terminal
```

Or in Run/Debug Configurations



4. The following usage should be displayed if arguments are missing or invalid arguments are passed to the program.

```
Usage: java LastnameFirstnameA1 original_deposit_amount annual_interest_rate
time_in_years
```

5. Your output should be like the following test samples.

* Compound Interest: the interest you earn on your account's original deposit (the principal) plus previous interest.

† Compound quarterly: the interest you earned would be added to your original investment amount every three months.

Sample Test Cases:

Test Case 1 – `java LastnameFirstnameA1 4000 6 5`

Output –

There will be \$5387.42 in the account if deposit \$4000 with 6% interest rate after 5 years.

Program Completed

Test Case 2 - `java LastnameFirstnameA1 2500 5.25 8.5`

Output –

There will be \$3894.78 in the account if deposit \$2500 with 5.25% interest rate after 8.5 years.

Program Completed

Test Case 3 – `java LastnameFirstnameA1 800 R`

Output –

Usage: `java LastnameFirstnameA1 original_deposit_amount annual_interest_rate time_in_years`

Program Completed

Notes:

1. The program should always print '**Program Completed**' before exiting.
2. Check if your program works properly by giving different inputs.
3. Give comments to increase code readability.
4. Mention the sources used to complete the assignment.
5. Save the file as `LastnameFirstnameA1.java`
6. **Submit .java file and a screenshot of terminal when you run the program.**

Tips:

To run the program using command prompt/terminal:

1. Make sure the java path is set on the terminal by running

```
➤ java -version
```

command on the prompt. In case it does not work, then please follow the links below to set the path on the terminal.

- For mac OS, visit this [link](#).
- For Windows, visit this [link](#).

2. Go to the directory where your LastnameFirstnameA1.java files were created/saved and run:

To compile and run the program, execute the below commands.

```
➤ javac LastnameFirstnameA1.java
```

```
➤ java LastnameFirstnameA1 4000 6 5
```