

# Tip Calculator Application

## 1 TIPCALCAPP.JAVA

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### 1.1 DESCRIPTION

This application takes in the user input for the bill amount and tip percentage and returns the tip amount and total (bill amount + tip amount).

After taking in the user input as a string datatype, the application checks to see if the input is able to be parsed by checking a series of conditions:

1. Input length
2. Input contains only digits or decimal points
3. Input has at least one digit
4. Input has no more than one decimal point

If one of these conditions fail, the user is asked to re-enter both the bill amount and the tip percentage until the user input is able to be parsed. After the input is parsed, the tip amount is calculated and the results are shown below the user input.

### 1.2 INSTRUCTIONS

Please follow this series of tests to ensure that the application is validating properly:

#### 1.2.1 Test 1 – Normal run

##### 1.2.1.1 Input

Bill Amount: 100      Tip Percent: 0.10

##### 1.2.1.2 Results

Bill Amount: 100.0      Tip Percent: 0.1      Tip Amount: 10.0      Total Amount: 110.0

#### 1.2.2 Test 2 – Normal run with different formatting

##### 1.2.2.1 Input

Bill Amount: 100.1      Tip Percent: .1

##### 1.2.2.2 Results

Bill Amount: 100.1      Tip Percent: 0.1      Tip Amount: 10.01      Total Amount: 110.1

#### 1.2.3 Test 3 – Run with negative input values

##### 1.2.3.1 Input

Bill Amount: -100      Tip Percent: -0.10

##### 1.2.3.2 Results

N/a. Application will prompt for a retry.

## 1.2.4 Test 4 – Run with letters

### 1.2.4.1 Input

Bill Amount: bill            Tip Percent: tip

### 1.2.4.2 Results

N/a. Application will prompt for a retry.

## 1.2.5 Test 5 – Run with bill amount < 1 and tip percent > 1

### 1.2.5.1 Input

Bill Amount: 0.10            Tip Percent: 1.1

### 1.2.5.2 Results

N/a. Application will prompt for a retry.

## 1.3 SUCCESSFUL RUN

```
C:\Users\Omiew\Dropbox\School\2016\Information Science 383\TestCalcApp\Java>javac TipCalcApp.java
C:\Users\Omiew\Dropbox\School\2016\Information Science 383\TestCalcApp\Java>java TipCalcApp
-----
Tip Calculator Java Application
Calculte tip amounts and total from the bill amount and tip percentage
By: Omie Walls, Student No.: 99-121-7982-80

Test Description: Test 1 - Normal Run

Enter Bill Amount: 100
Enter Tip Amount: 0.10

Bill Amount: 100.0
Tip Percent: 0.1
Tip Amount: 10.0
Total Amount: 110.0

C:\Users\Omiew\Dropbox\School\2016\Information Science 383\TestCalcApp\Java>java TipCalcApp
-----
Tip Calculator Java Application
Calculte tip amounts and total from the bill amount and tip percentage
By: Omie Walls, Student No.: 99-121-7982-80

Test Description: Test 2 - Normal Run in Different Formatting

Enter Bill Amount: 100.1
Enter Tip Amount: .1

Bill Amount: 100.1
Tip Percent: 0.1
Tip Amount: 10.01
Total Amount: 110.11
```

## 2 TIPCALCAPPTESTER.JAVA

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### 2.1 DESCRIPTION

TipCalcAppTester.java works the same as TipCalcApp.java, but this was created for TDD purposes to ensure that the program was explicitly following every step in the validation process appropriately.

### 2.2 INSTRUCTIONS

Instructions for testing are the same as above, but there is an extra print-out in the debugging section.

### 2.3 SUCCESSFUL RUN

```
C:\Users\Omiew\Dropbox\School\2016\Information Science 383\TestCalcApp\Java>java TipCalcAppTester
```

```
-----  
Tip Calculator Java Application  
Calculate tip amounts and total from the bill amount and tip percentage  
By: Omie Walls, Student No.: 99-121-7982-80
```

```
Test Description: Test 1 - Normal Run  
Enter Bill Amount [must be greater than or equal to 1]: 100  
Enter Tip Amount [must be less than or equal to 1]: 0.10  
-----
```

```
Debug Mode for Bill Amount
```

```
-----  
Bill Amount input: 100
```

```
Valid length! String is 3 characters long.  
Valid character! Character '1' is a digit.  
String now has 1 digit(s).
```

```
Valid character! Character '0' is a digit.  
String now has 2 digit(s).
```

```
Valid character! Character '0' is a digit.  
String now has 3 digit(s).
```

```
Valid Digit Count! There are enough digits to parse this string. Digit count: 3
```

```
100 is a parseable Bill Amount value.
```

```
-----  
End Debug Mode for Bill Amount  
-----
```

```
Debug Mode for Tip Percent
```

```
-----  
Tip Percent input: 0.10
```

```
Valid length! String is 4 characters long.  
Valid character! Character '0' is a digit.  
String now has 1 digit(s).
```

```
-----
                Debug Mode for Tip Percent
-----
Tip Percent input: 0.10

Valid length! String is 4 characters long.
Valid character! Character '0' is a digit.
String now has 1 digit(s).

Valid character! Character '.' at substring 1 is a decimal point.
String now has 1 decimal point(s).

Valid character! Character '1' is a digit.
String now has 2 digit(s).

Valid character! Character '0' is a digit.
String now has 3 digit(s).

Valid Digit Count! There are enough digits to parse this string. Digit count: 3
```

```
-----
                Decimal Index Test
-----
String has a decimal point.
Decimal point is has an index of: 1
Valid Decimal Count! String only has one decimal point.

The search for an extra decimal resulted in an index of: -1

0.10 is a parseable Tip Percent value.
```

```
-----
                End Debug Mode for Tip Percent
-----
```

```
-----
                Checking for Calculation Errors
-----
```

```
100.0 is a valid input for the Bill Amount.
0.1 is a valid input for the Tip Percentage.
```

```
-----
                End Debug Mode for Tip Percent
-----
```

```
-----
                Checking for Calculation Errors
-----
```

```
100.0 is a valid input for the Bill Amount.
0.1 is a valid input for the Tip Percentage.
```

```
-----
Bill Amount: 100.0
Tip Percent: 0.1
Tip Amount: 10.0
Total Amount: 110.0
```

```
C:\Users\Omiew\Dropbox\School\2016\Information Science 383\TestCalcApp\Java>_
```