

*RMIT University Vietnam - Saigon South Campus*  
***EEET2482 - Software Engineering Design***



# Assignment I Group Report

## Group 8

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***By submitting all the materials for this assessment, we declare that we have read, understood, and agreed to the content and expectations of the assessment's declaration.***

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# 1. Team

Our team members are:

- Vu Viet Minh (leader) - s3790708
- Nguyen Chu Son - s3742891
- Quach Gia Vi - s3757317

Consisting of 2 Information Technology students and a Software Engineering student who is our leader, we came together to form as group 8 for this EEET2482 - Software Engineering Design course with the goal of acing all the assignments and tests thrown at us as well as be able to learn and gain valuable knowledge and experience working together.

## 2. Assignment

### 2.1. Completion

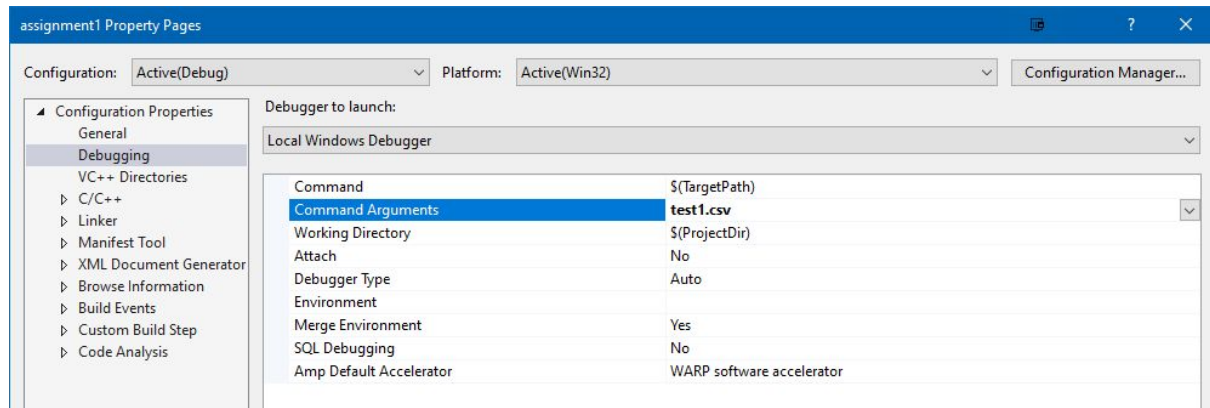
We are proud to announce that, within a short period of time, we have managed to complete all of the required tasks within the assignment's declarations for the coding component. The final source code contains a little over 1000 lines of code, with roughly 80% of the code being functions for the statistics calculations.

### 2.2. Testings

#### 2.2.1. Methodologies

Since the program will be relatively small, we decided to go ahead with testing each function one by one while writing the code and when the function is finished, though not optimal, it is sufficient for this sort of program.

To elaborate, functions were tested by having cout placed at certain lines within the functions to output variables into the console in order for us to check whether the value in the calculation was correct or not. In the case of program argument testing, we utilized both the Command Arguments in Microsoft Visual Studio Code 2017's project properties Debugging and Windows Command Prompt to test, but the latter option was preferred as it was more efficient.



*Image of Command Arguments in Microsoft Visual Studio 2017's project properties Debugging section*

## 2.2.2. Program outputs

Below will be a series of images of the program being run using Windows Command Prompt (cmd.exe) with a variety of scenarios:

- Running the program with "data1.csv" as an argument (data1.csv is the file included in the assessment for testing the program):

```

C:\> Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Software Engineering Design Assi
gnments\Group Assignment 1>assignment1_group8.exe data1.csv
DESCRIPTIVE STATISTICS
Mean values
mean_x = 44.9104 - mean_y = 101340.4247

Median values
median_x = 45.0000 - median_y = 96245.5000

Mode values
mode_x = 64.0000 - mode_y = 95419.0000

Variance and stand deviation values
var_x = 134.3161 - var_y = 645123047.4661
stdev_x = 11.5895 - stdev_y = 25399.2726

Mean Absolute Deviations values
mad_x = 10.0366 - mad_y = 21033.1248

First quartile values
q1_x = 35.0000 - q1_y = 82930.0000

Third quartile values
q3_x = 55.0000 - q3_y = 122413.5000

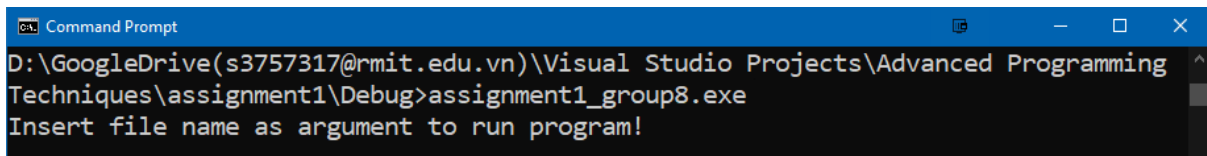
INFERENCEAL STATISTICS
Covariance values
cov(x_y) = 1139.1147

Correlation coefficient values
r(x_y) = 0.0039

Linear Regression
y = 8.4808 * x + 100959.5462

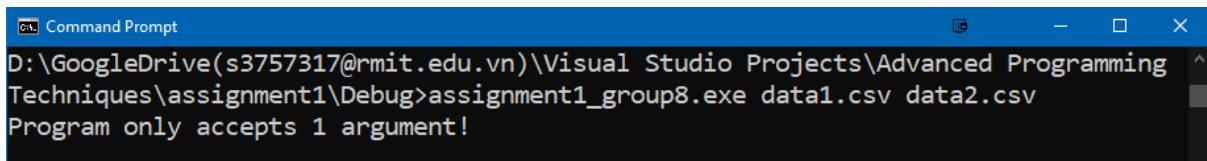
ASSIGNMENT 1 GROUP 8
s3790708, s3790708@rmit.edu.vn, Minh, Vu
s3742891, s3742891@rmit.edu.vn, Son, Nguyen
s3757317, s3757317@rmit.edu.vn, Vi, Quach
  
```

- Running the program without any arguments:



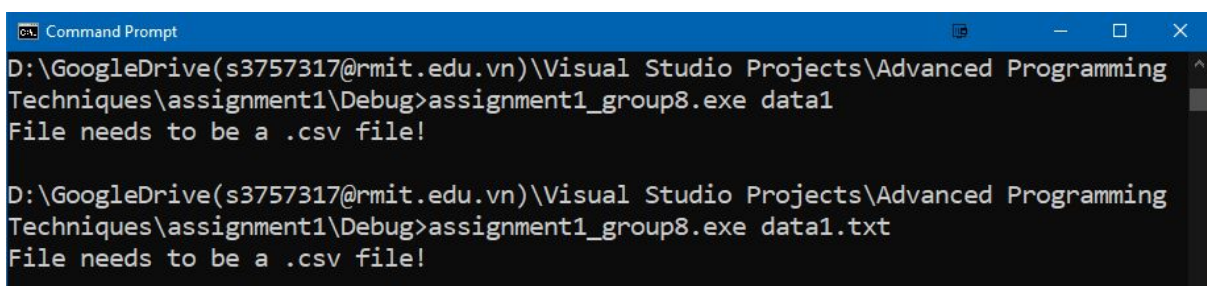
```
Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe
Insert file name as argument to run program!
```

- Running the program with more than one argument:



```
Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe data1.csv data2.csv
Program only accepts 1 argument!
```

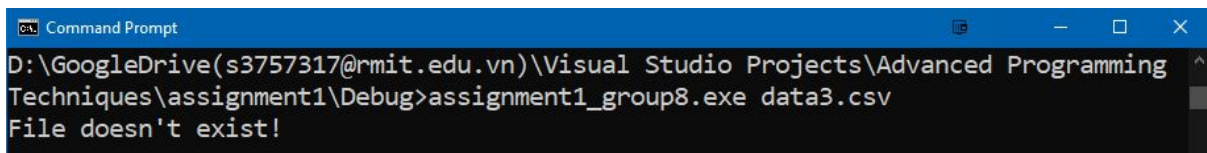
- Running the program with an argument but the name has no extension or the file is not a csv file:



```
Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe data1
File needs to be a .csv file!

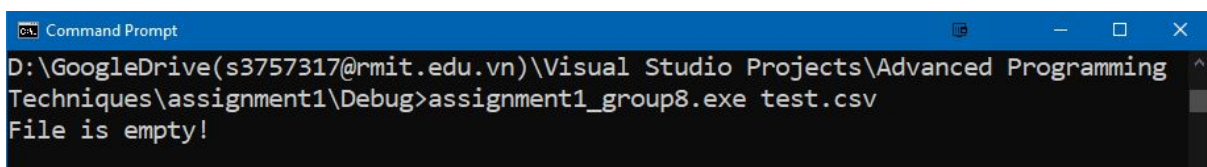
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe data1.txt
File needs to be a .csv file!
```

- Proper argument but the file does not exist:



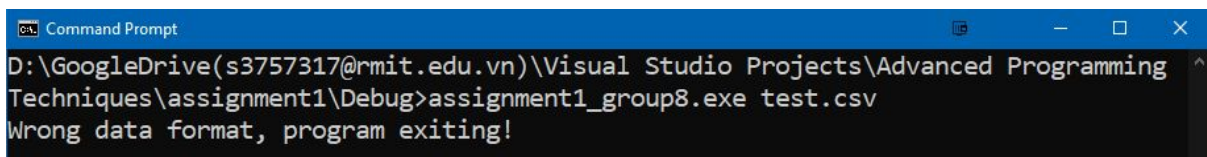
```
Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe data3.csv
File doesn't exist!
```

- File exists but is blank:



```
Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe test.csv
File is empty!
```

- File has improper data format:



```
Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming Techniques\assignment1\Debug>assignment1_group8.exe test.csv
Wrong data format, program exiting!
```

Data in test.csv file:

x,y,z

10,20,30

- File has no data:

```

Command Prompt
D:\GoogleDrive(s3757317@rmit.edu.vn)\Visual Studio Projects\Advanced Programming
Techniques\assignment1\Debug>assignment1_group8.exe test.csv
There's no data in file!

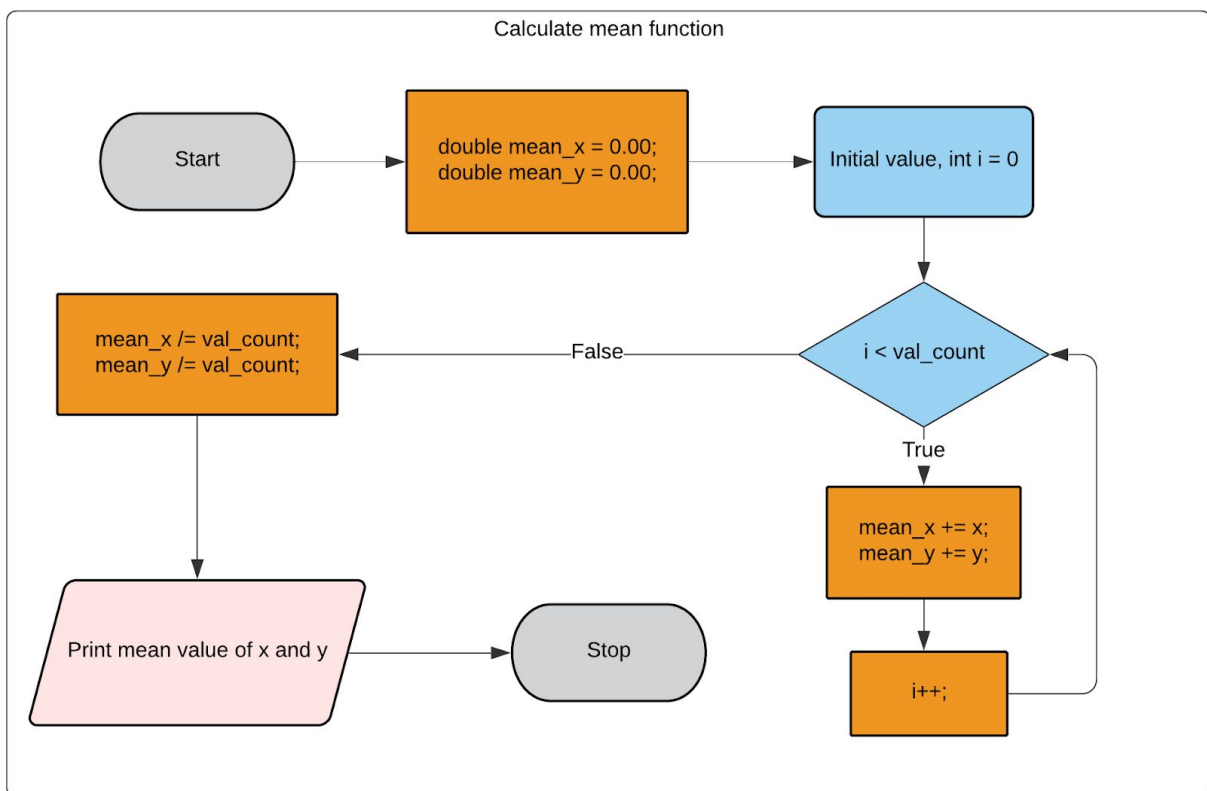
```

Data in test.csv file:

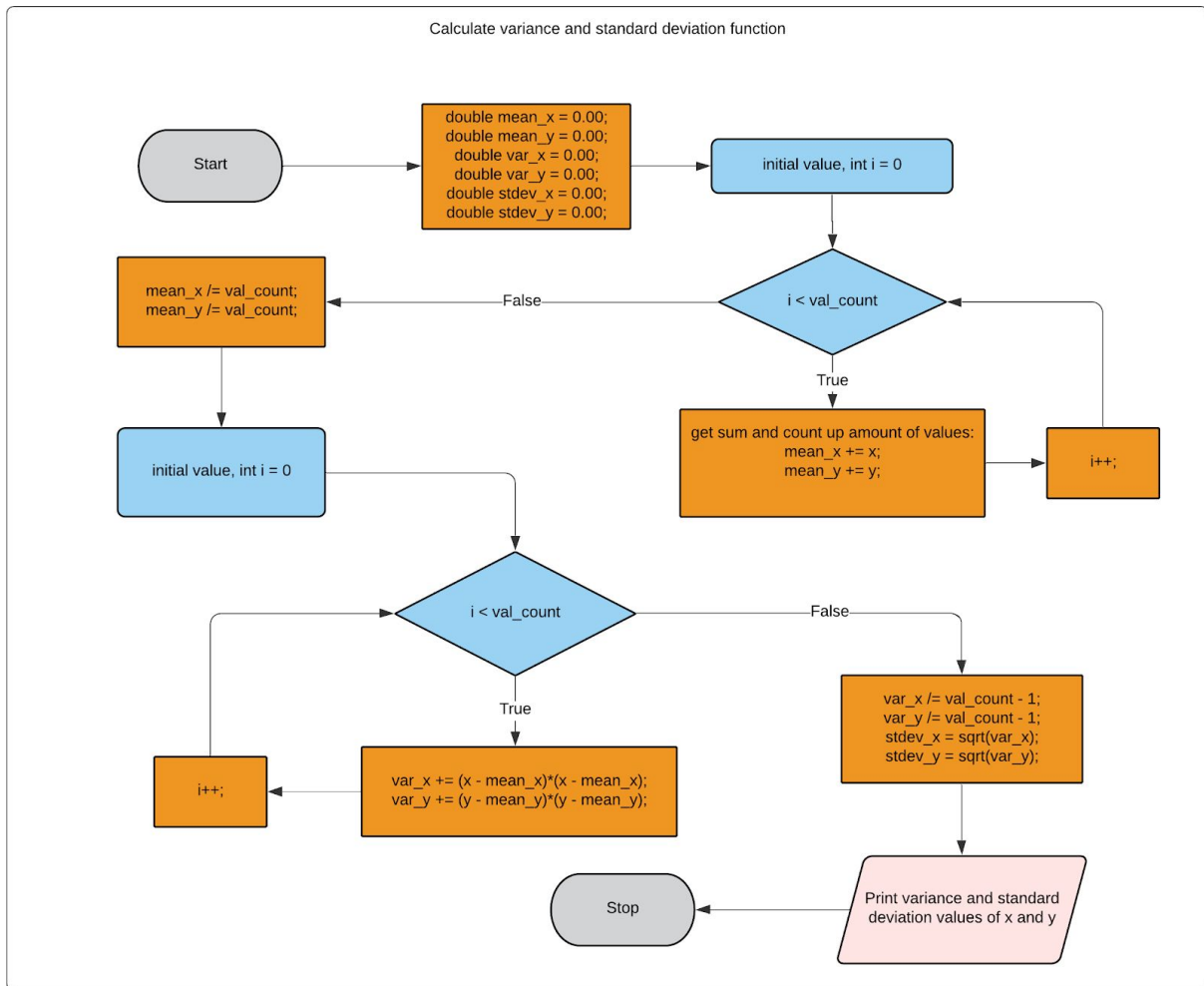
x,y

(rest of the lines are blank)

## 2.3. Flowcharts

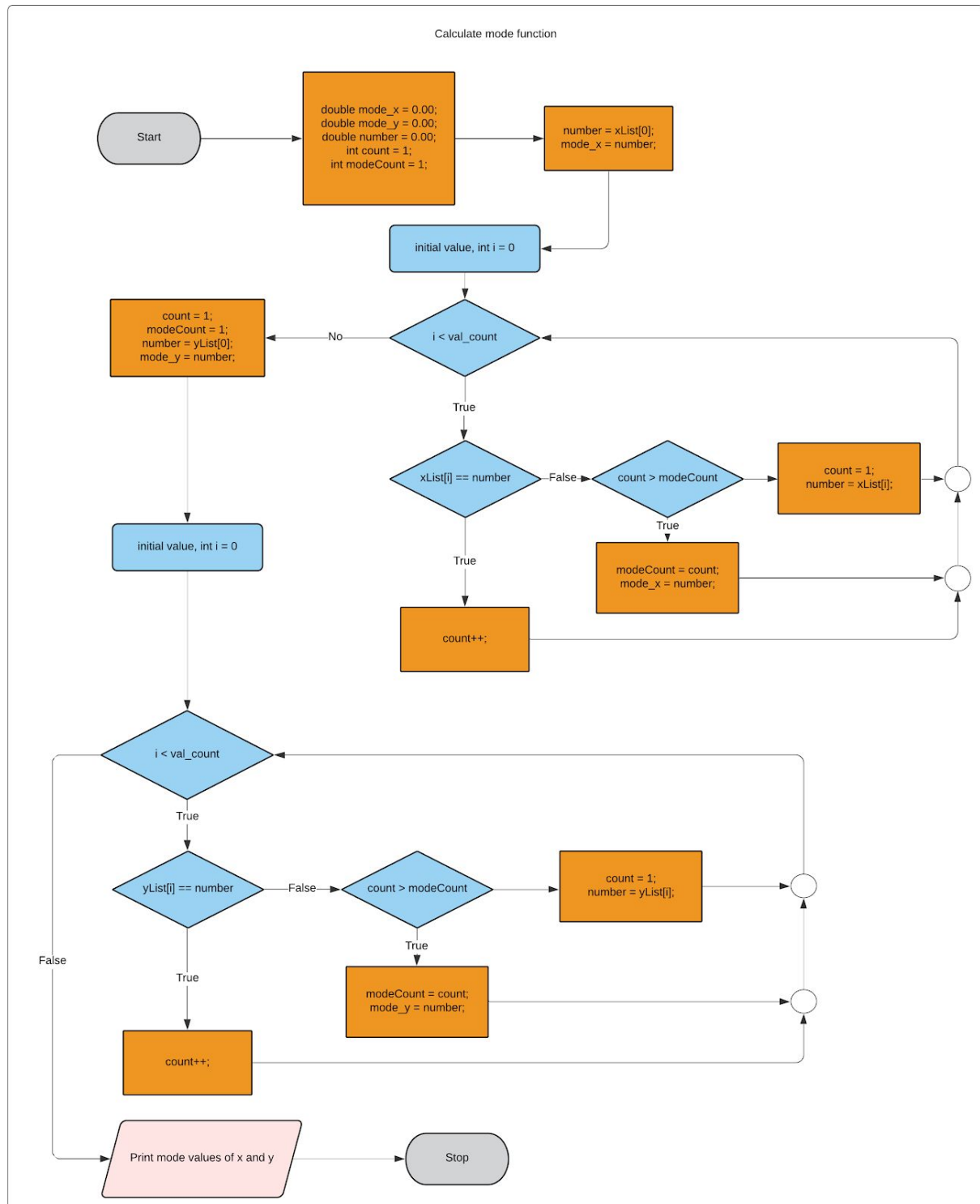


*Mean calculation function flowchart*



*Variance and standard deviation calculation function flowchart*





*Mode calculation function flowchart*

### 3. Conclusion

We realized the assessment requirements became more ambiguous the more we worked on each task in the assignment, we were constantly put in a situation where we had to make compromises to satisfy the specifications of the assignment from each person's point of view, but the predicament was quickly resolved by having

conflicting parties list out pros and cons in meetings as well as having debates. Furthermore, we had to brainstorm a wide range of test cases, which forced us to write more codes to prevent crashes and undesirable results.