PolyU ENG1003 AAE FP Week 3 Tutorial

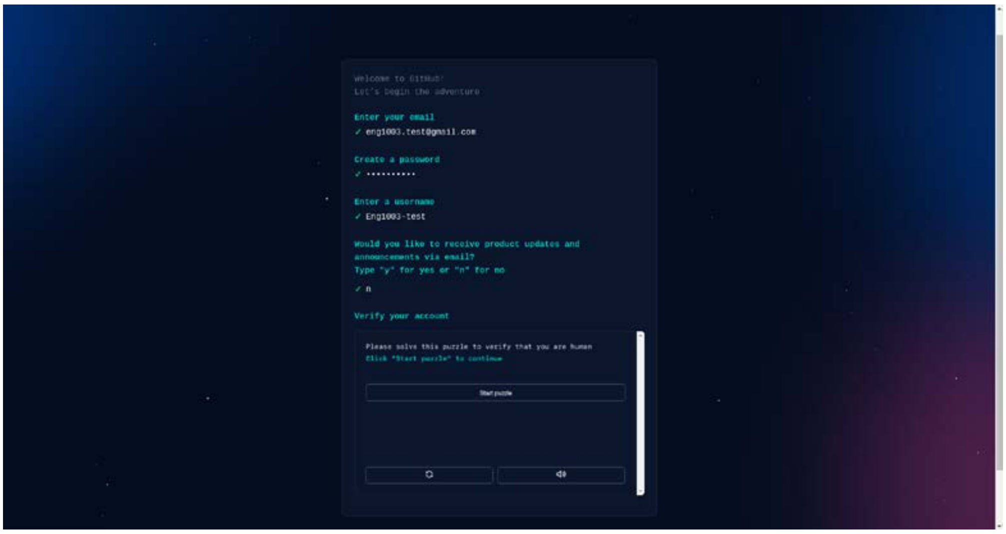
This tutorial is about the basic features of GitHub. Complete every task in this tutorial.

GitHub Setup (5 Marks)

This task requires everyone to create a Github account.

Setting up your Github account

1. Search for Github on Google and start the sign up process
2. Fill in the required fields and create the account. (There is no requirement on the username, treat it as your own personal account)



```
Welcome to GitHub!
Let's begin the adventure

Enter your email
✓ eng1003.test@gmail.com

Create a password
✓ ••••••••••

Enter a username
✓ Eng1003-test

Would you like to receive product updates and
announcements via email?
Type "y" for yes or "n" for no

✓ n

Verify your account

Please solve this puzzle to verify that you are human
Click "Start puzzle" to continue
```

3. After verifying with your email, you should be able to login to your account.
4. Go to your Github profile and add a bio
5. Show the TA your GitHub accounts

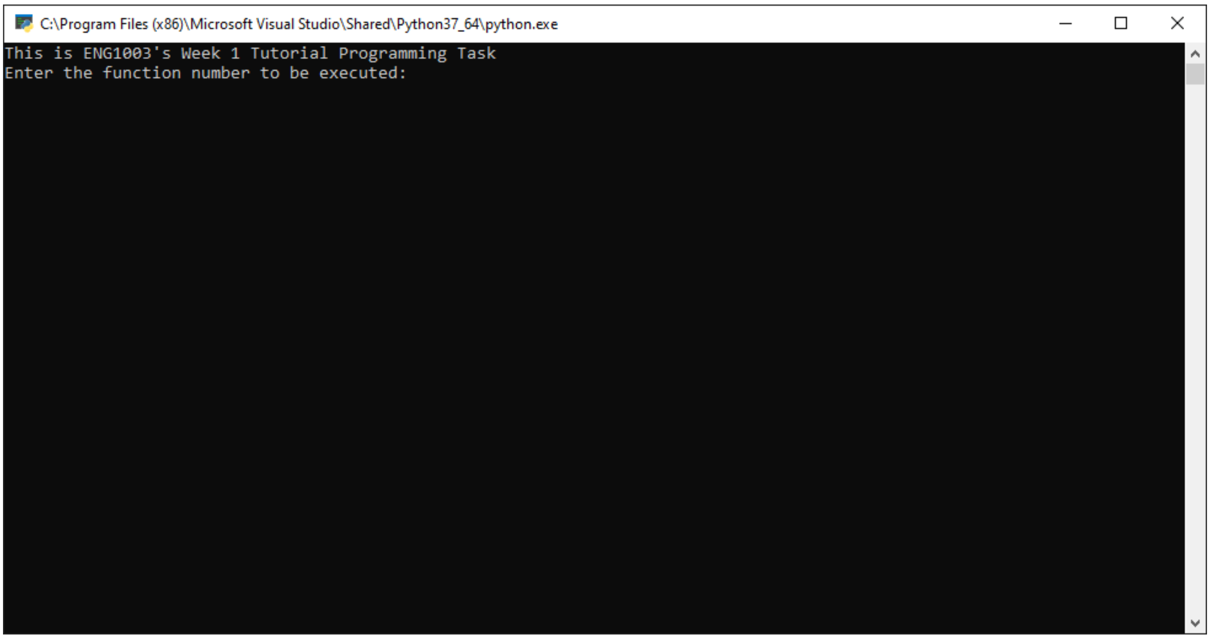
Programming Task

This is a task that requires programming collaboration on GitHub. After the leader created the main function, members **MUST** modify the programme using GitHub’s version control.

Complete the individual parts in VS code and combine them later in GitHub’s website. The Group needs to complete a programme which would be able to run 4 different simple functions.

For Group Leaders:

Create the main function that would output the following prompt. After entering an integer to the terminal, the programme needs to be able to **execute the corresponding functions created by group members** (4 in total) **(10 Marks)**


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
This is ENG1003's Week 1 Tutorial Programming Task
Enter the function number to be executed:
```

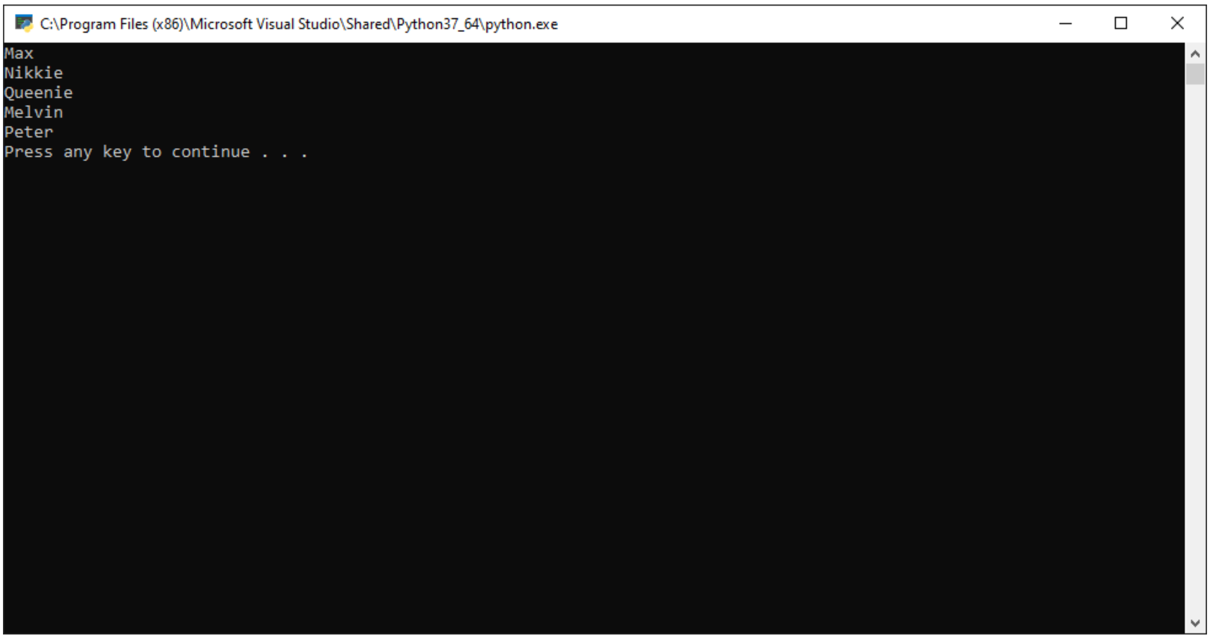
For Group Members:

Select one of the following functions, totalling FOUR functions per group. Each member should choose a unique function. Choosing Advanced ones will grant you extra marks.

Basic Functions: (10 Marks each)

1. **Printing Members' Names**

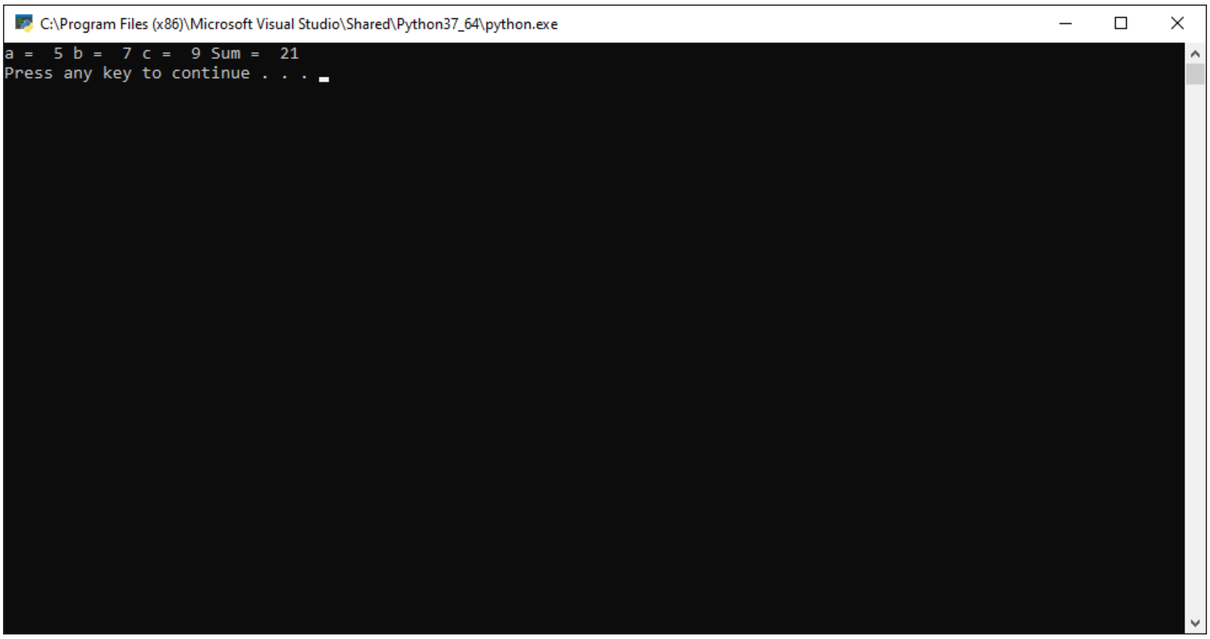
   Create a function that will output names of all group members in separate lines.


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
Max
Nikkie
Queenie
Melvin
Peter
Press any key to continue . . .
```

2. **Adding 3 Variables**

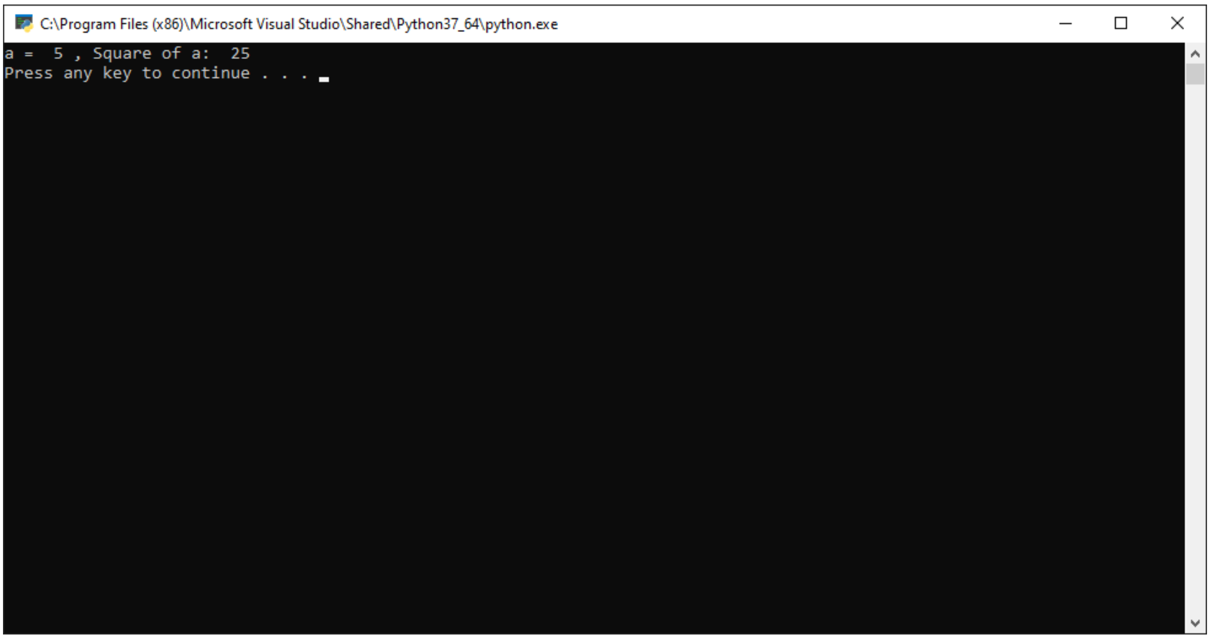
   Define 3 integer variables, output the 3 variables and the sum of the 3 variables.


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
a =  5 b =  7 c =  9 Sum =  21
Press any key to continue . . .
```

3. Variable Squaring

Define a variable, output the variable and the square of it.

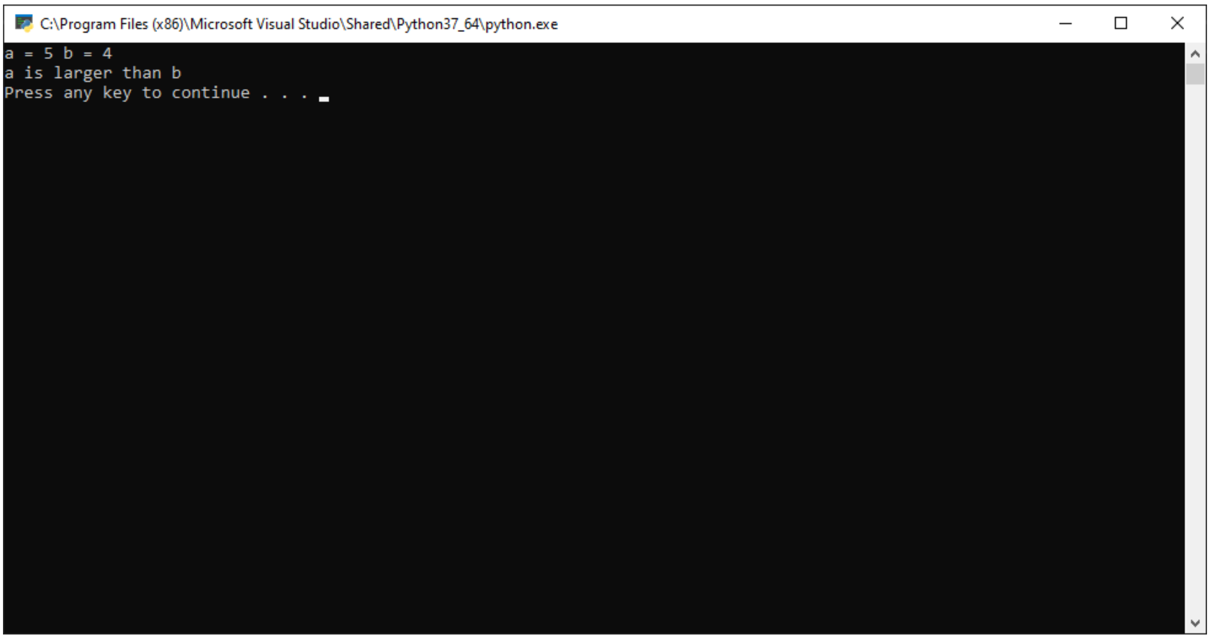


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
a =  5 , Square of a:  25
Press any key to continue . . .
```

4. Variable Comparison

Define 2 variables, output the result after comparing the 2 variables (<, > or =).



C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

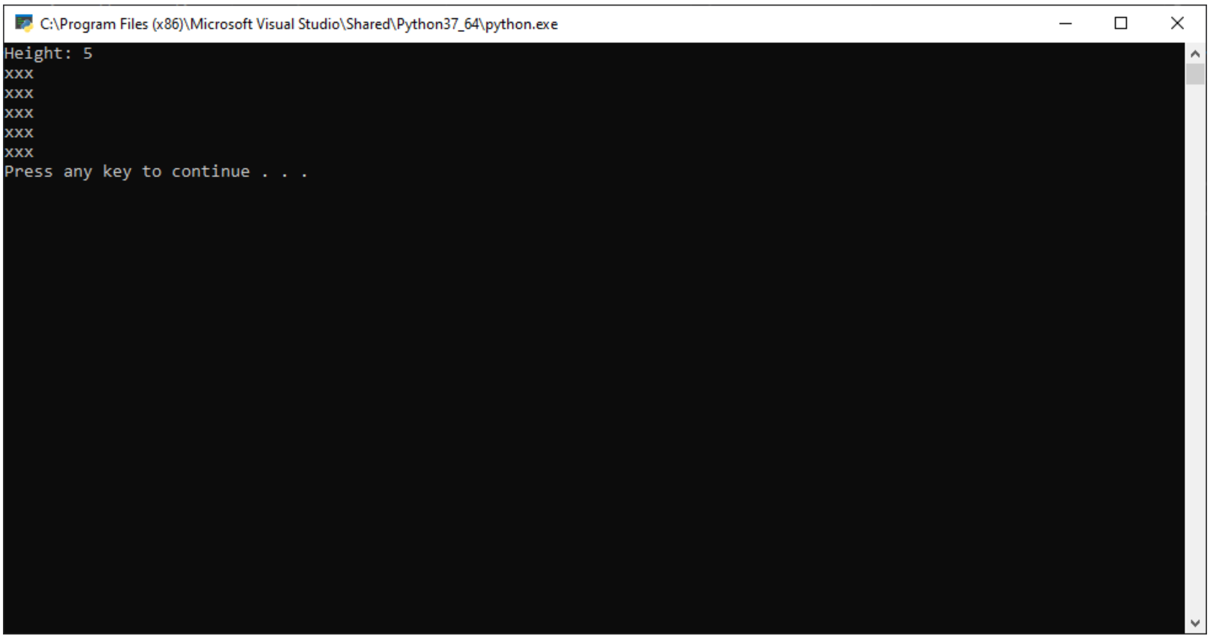
```
a = 5 b = 4
a is larger than b
Press any key to continue . . .
```

Advanced Functions List: (15 Marks each)

These functions require code that was not taught during the lecture, feel free to do some searching on the web.

1. **Tower Builder**

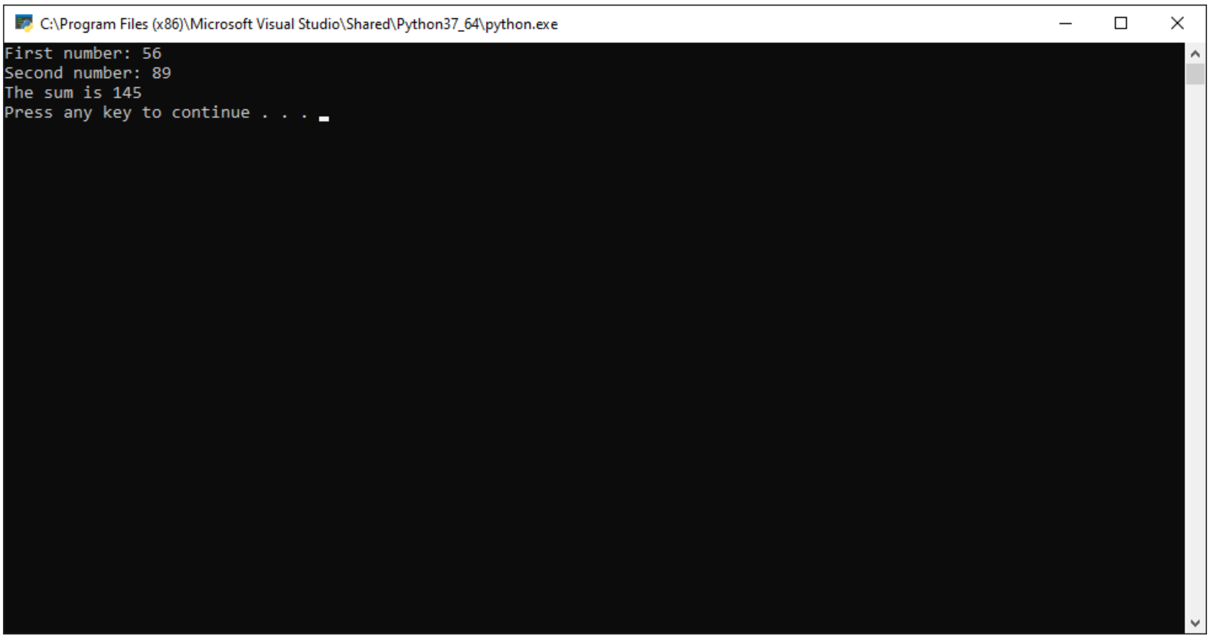
   Ask for an integer input to be the height. The tower should be 3 characters wide. Print the building using the ‘X’ character.


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
Height: 5
xxx
xxx
xxx
xxx
xxx
Press any key to continue . . .
```

2. **Addition Calculator**

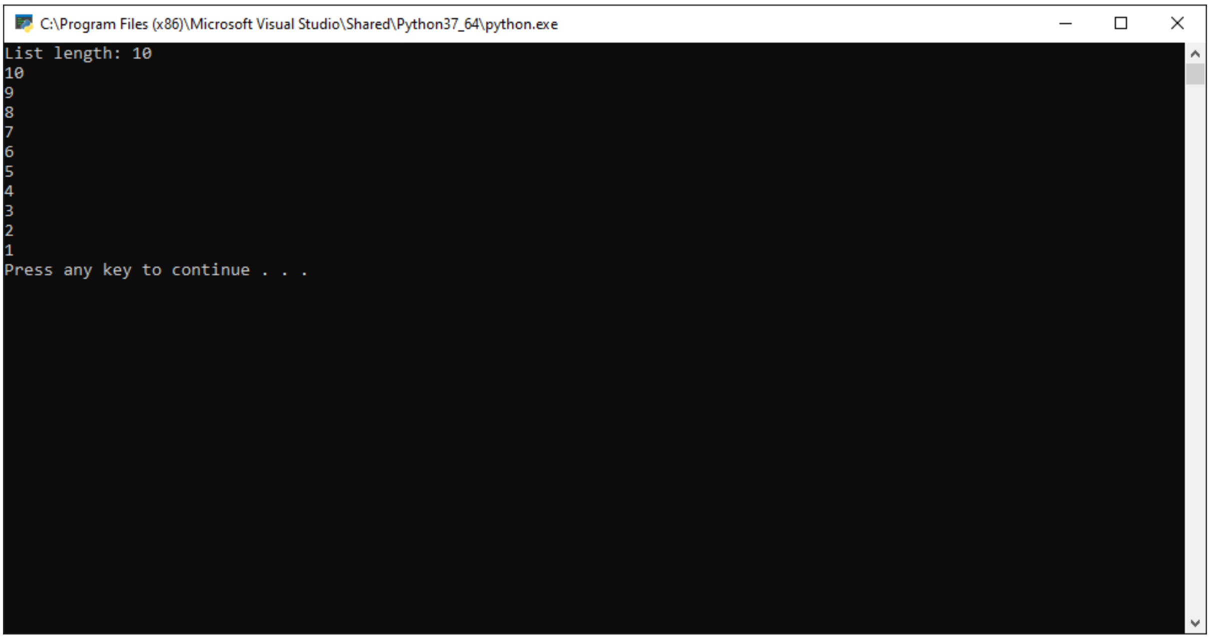
   Input 2 integers and output the sum of the 2 numbers.


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
First number: 56
Second number: 89
The sum is 145
Press any key to continue . . .
```

3. Reversed List

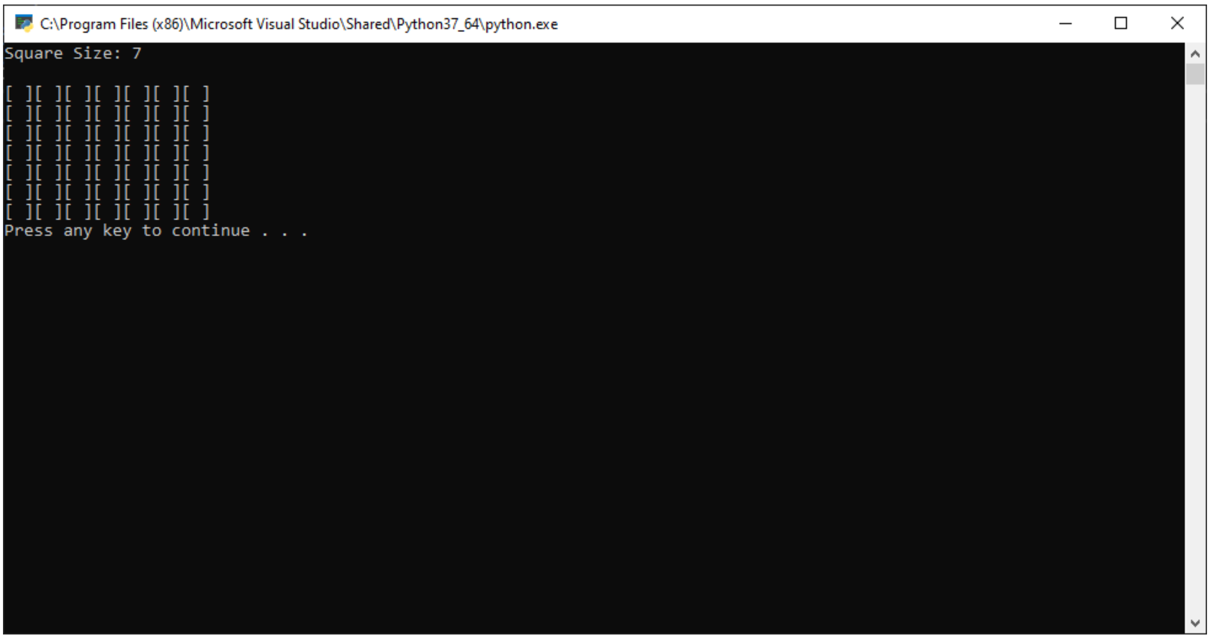
Input the length of the list and output a reversed integer list based on the input length.


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
List length: 10
10
9
8
7
6
5
4
3
2
1
Press any key to continue . . .
```

4. Square Printer

Input the size of the square and print it out using ‘[ ]’ as building blocks


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
Square Size: 7

[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]
Press any key to continue . . .
```

GitHub Collaboration: (30 Marks)

After everyone has completed their programming parts, it is time for you to combine them to the group leader's main function. You will be doing this using GitHub's version control feature, either via VS Code or GitHub itself.

<u>Follow the video tutorials (Youtube/AAE) for operating VS Code and GitHub:</u>

https://www.youtube.com/playlist?list=PLpPVLI0A0OkLBWbcctmGxxF6VHWSQw1hi

Group leaders

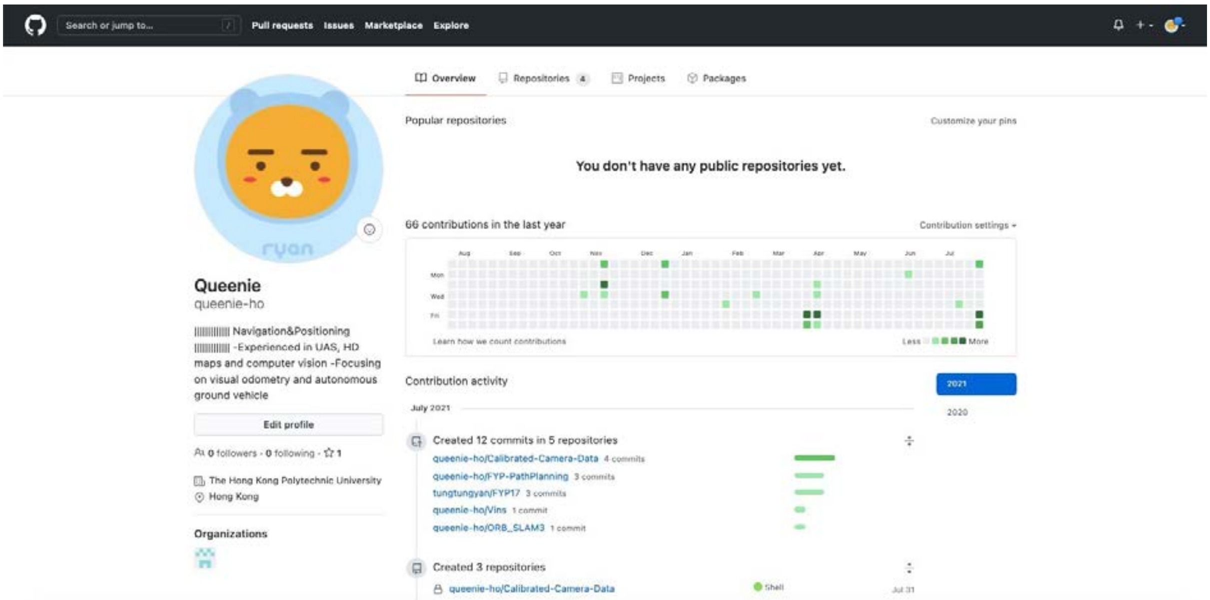
1. Login to GitHub via VS Code.
2. Program the main function in a VS Code.
3. Create a remote repository named ENG1003_w1_*GroupNumber* on GitHub, then add every group member and **the lecturer** (*https://github.com/eng1003-2021*) into the repository.
4. Upload your local work to the remote repository.
5. Manage and maintain the remote repository.

Group members

1. Login to GitHub via VS Code
2. Clone the repository created by the group leader to the local VS Code
3. Create your own separate branch from the main branch.
4. Work in your branch on your part of the programme
5. Create a pull request for the group leader once the changes are finished, this is where you combine your updated code with the code at the main branch.

Capture Your Profiles (5 points)

Everyone should do a screen capture of your own GitHub profile and upload it to the project repository’s **main branch**.



Queenie
queenie-ho

||||||||||| Navigation&Positioning ||||||||||| -Experienced in UAS, HD maps and computer vision -Focusing on visual odometry and autonomous ground vehicle

0 followers · 0 following · ☆ 1

The Hong Kong Polytechnic University
Hong Kong

Organizations

Popular repositories

You don't have any public repositories yet.

66 contributions in the last year

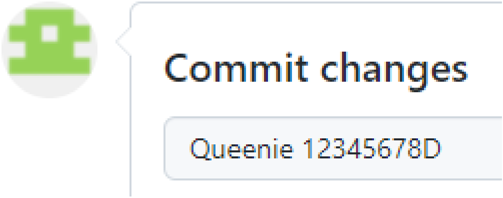
Contribution activity

July 2021

Created 12 commits in 5 repositories
queenie-ho/Calibrated-Camera-Data 4 commits
queenie-ho/FYP-PathPlanning 3 commits
tungtungyan/FYP17 3 commits
queenie-ho/Vins 1 commit
queenie-ho/ORB_SLAM3 1 commit

Created 3 repositories
queenie-ho/Calibrated-Camera-Data

After clicking the upload files button and attaching the image, type your full name and SID into the commit changes log.



Commit changes

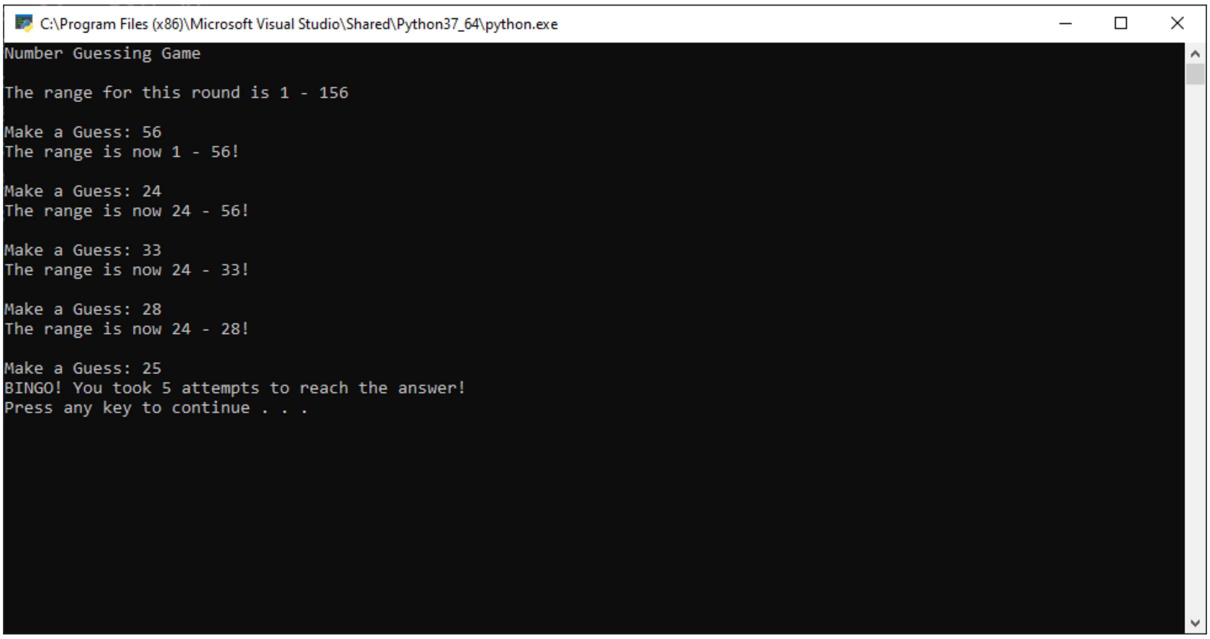
Queenie 12345678D

Bonus Task: (20 Bonus Marks)

If you finished all 4 functions and successfully combined all codes using GitHub's features, you can try this bonus programming task. Add this function to your .py file **as the 5th function**. You are not required to use GitHub's feature to complete this task.

Create a **Number Guessing Game** in python. Here are the requirements for the game:

1. The game should allow players to input multiple attempts until the player guesses the right answer.
2. The possible range of the integer should be randomized such that each time the game is loaded, the range will be different. The upper limit of the range should be between 50-200 and the lower limit should always be 1.
3. The end result should look something like this:


C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python37_64\python.exe

```
Number Guessing Game

The range for this round is 1 - 156

Make a Guess: 56
The range is now 1 - 56!

Make a Guess: 24
The range is now 24 - 56!

Make a Guess: 33
The range is now 24 - 33!

Make a Guess: 28
The range is now 24 - 28!

Make a Guess: 25
BINGO! You took 5 attempts to reach the answer!
Press any key to continue . . .
```

4. Include every feature in the example to get full marks!