Python Lab 2.1: Conditionals

In `lab2_1.py` in the text editor at top-right, write a few python commands to:

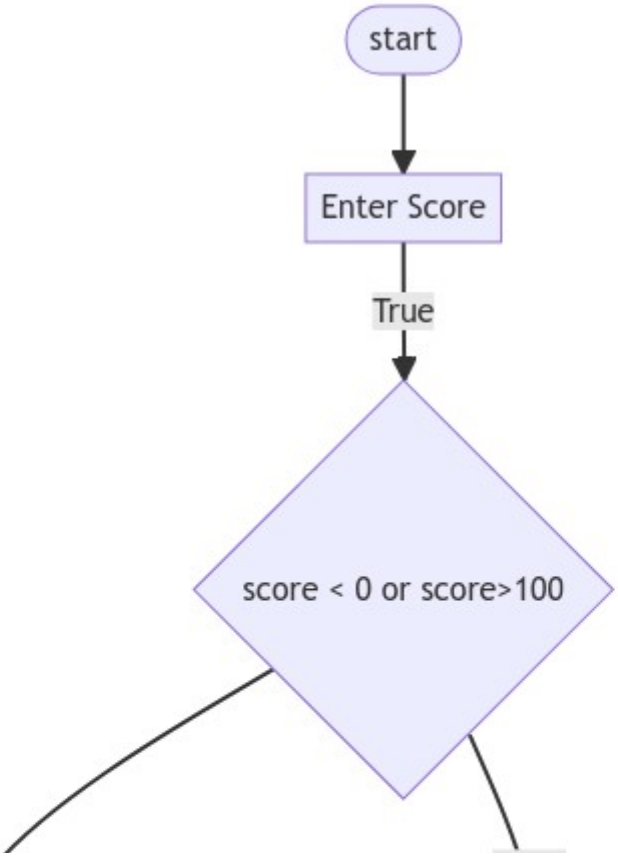
1. Ask the user to type their score in a test and store it in a variable
2. Test if the score entered by the user falls within the valid range from 0 to 100. If not display `Invalid score`.
3. If the user enters character/s instead of a number display `Wrong input`.
4. Using the following table to find and display the letter grade of the user score.

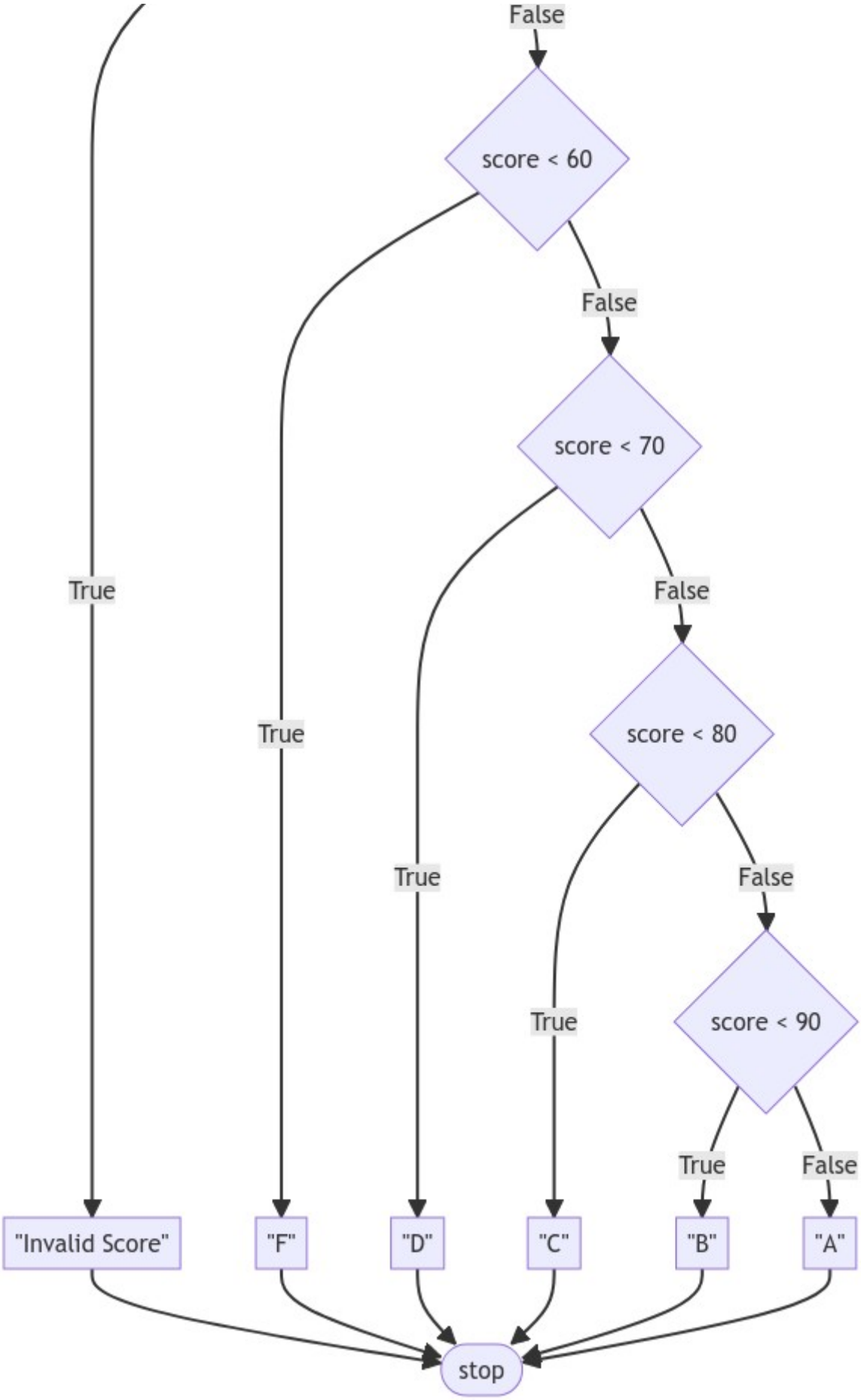
Low Range	High Range	Letter grade
0	59	F
60	69	D
70	79	C
80	89	B
90	100	A

Click next to see the flowchart of this algorithm... {% next %}

Flowchart v1

This Flowchart represents the logic of this program...

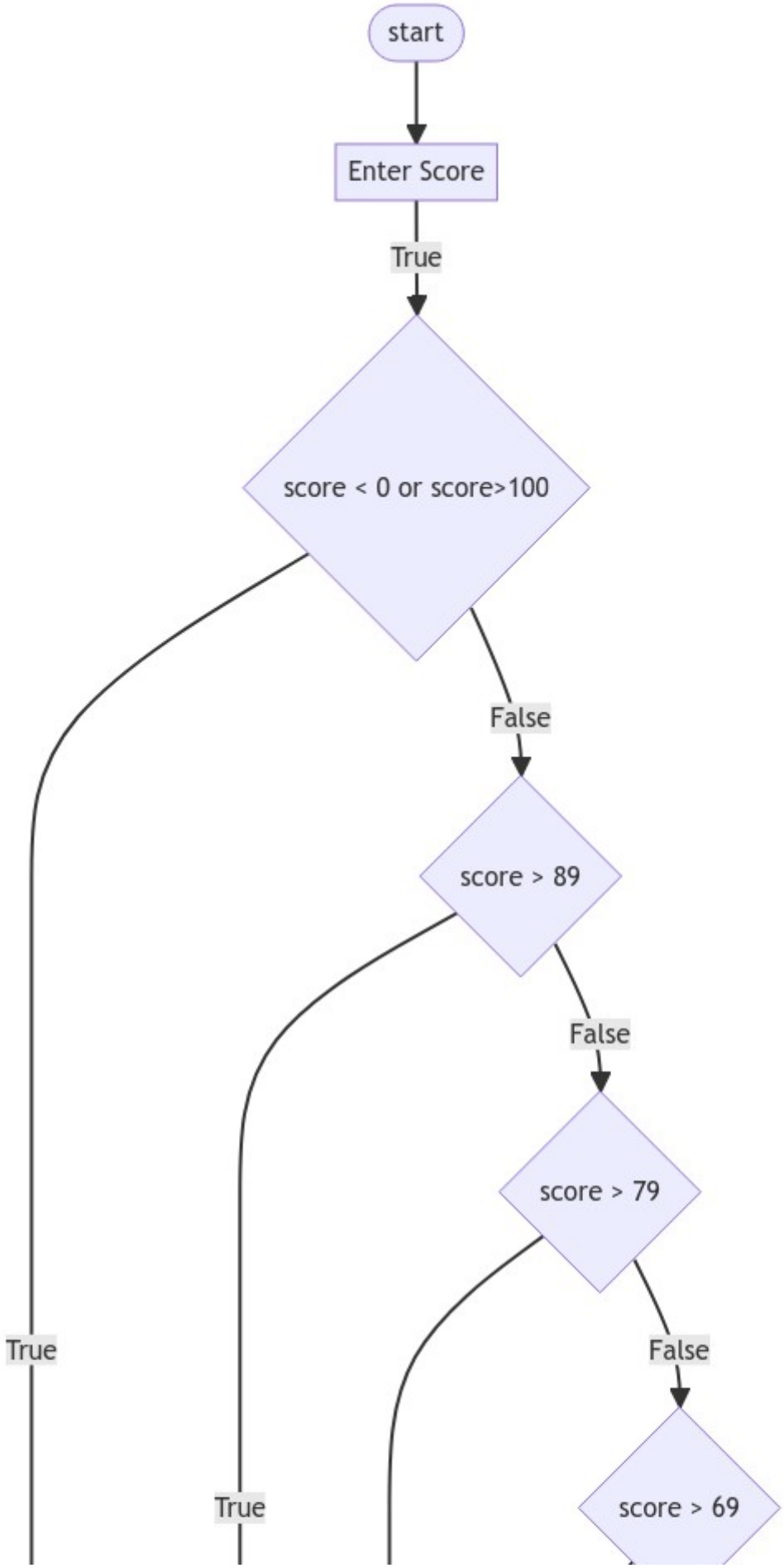


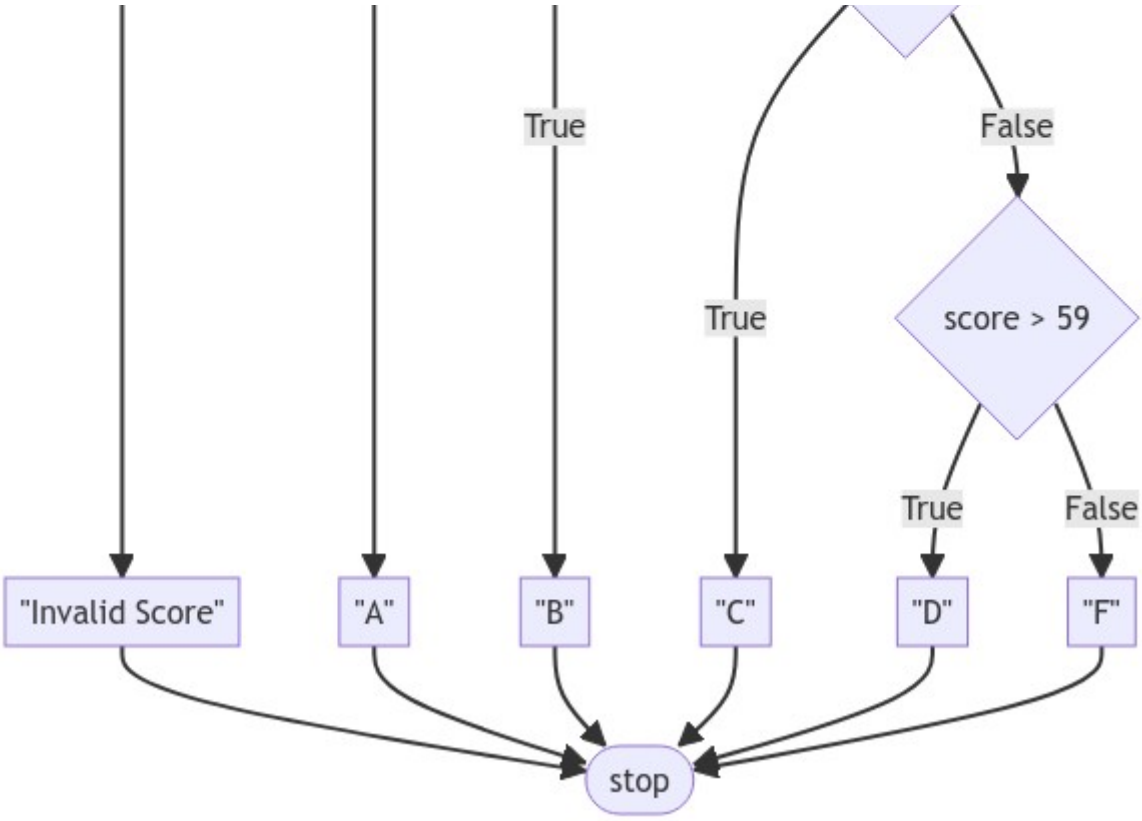


Remember that you can reverse the checks and still have a valid program! So click next to see a reverse flowchart...

{% next %}

Reverse Flowchart





Now, click next to start coding...

{% next %}

First ask the user to type a score and validate the range

▶ Hint 1 : Validate range

```
if score < 0 or score > 100 :
    print('Invalid score')`
```

What is the user types a letter instead of a number?

▶ Hint 2 : Invalid Input

use a try/except block after reading the score which will include the conversion to a floating point number... and exit the program if the input is invalid.

```
try:
    score = float(score)
except:
    print('Wrong input')
    quit()
```

Now complete the if statement...

▶ Hint 3 : Finding the letter grade

```
if score < 0 or score > 100:
    print('Invalid score')
elif score < 60:
    print('F')
elif score < 70:
    print('D')
elif score < 80:
    print('C')
elif score < 90:
    print('B')
else:
    print('A')
```

{% next %}

Keep in mind that the sample solution is not the only solution. There are different ways to reach to the same result...

▶ Solution : Putting it all together...

```
try:
    score = float(score)
except:
    print('Wrong input')
    quit()

if score < 0 or score > 100:
    print('Invalid score')
elif score < 60:
    print('F')
elif score < 70:
    print('D')
elif score < 80:
    print('C')
elif score < 90:
    print('B')
else:
    print('A')
```

{% next %}

Execute your program

Remember in order to execute your code you type in the terminal:

```
python lab2_1.py
```

Use the following test data to make sure your program produces correct resutls.

TEST 1:

Enter your score: 35

F

TEST 2:

Enter your score: 102

Invalid score

TEST 3:

Enter your score: 60

D

{% next %}

Check Your Code

Execute the below to evaluate the correctness of your code using `check50`, but be sure to test it yourself using:

- [x] a number out of the valid range
- [x] a character or word as input
- [x] a number below 60
- [x] a number in every possible range 🎉

```
check50 mkotsovoulou/ods6001a/main/labs/lab2_1
```

Execute the below to evaluate the style of your code using `style50`.

```
style50 lab2_1.py
```

{% next %}

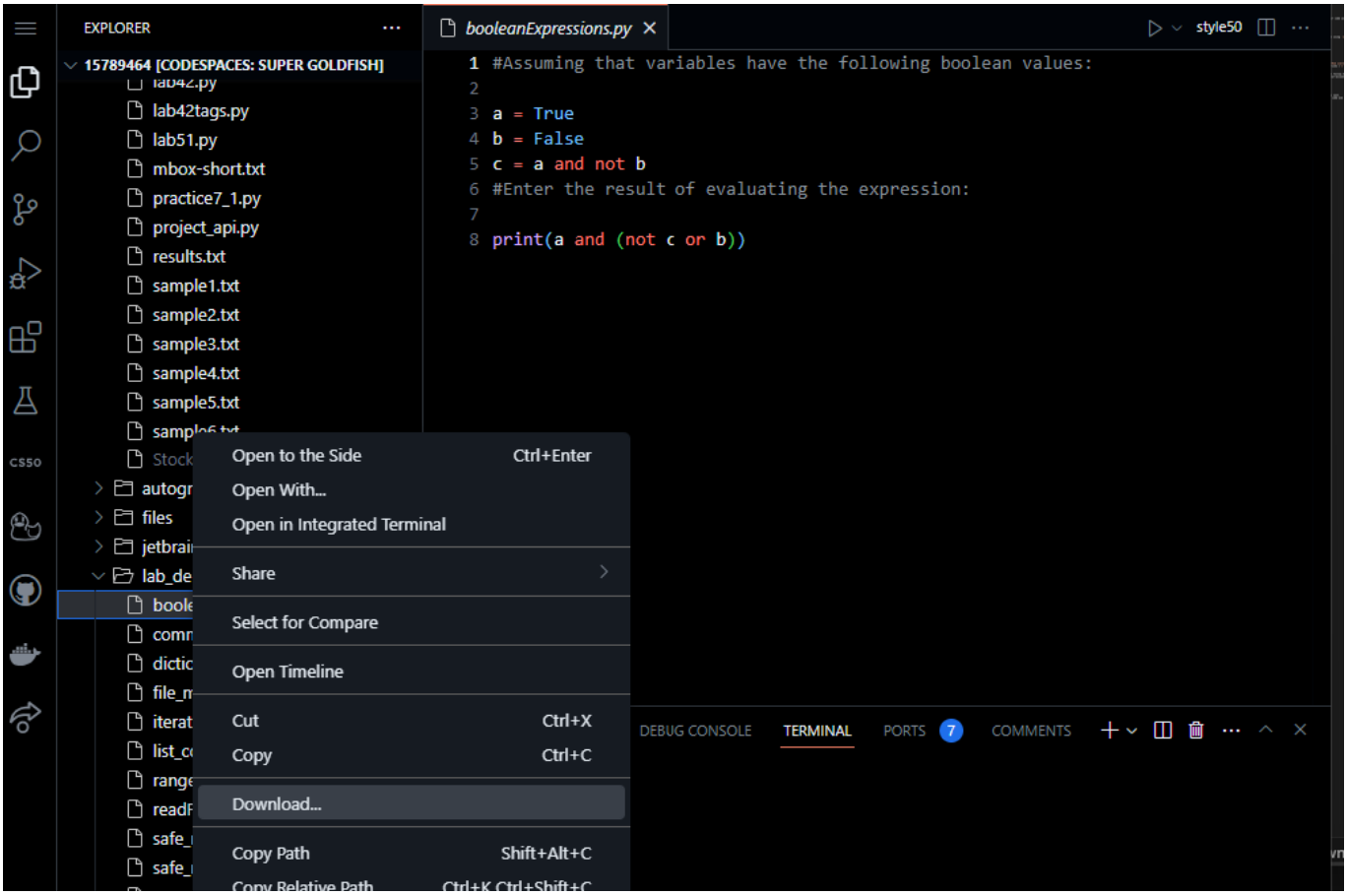
Submit your code

Execute the command below, logging in with your `GitHub username` and `Personal Access Token` when prompted. For security, you'll see asterisks (`*`) instead of the actual characters in your token.

If you do not have generated a Personal Access ToKen follow the instructions: https://docs.github.com/en/authentication/keeping-your-account-and-data-secure/creating-a-personal-access-token

```
submit50 mkotsovoulou/ods6001a/main/labs/lab2_1
```

You can re-submit your solution as many times as you want. When you are happy with your solution, download the code and upload it to Canvas.



Done!

🎉