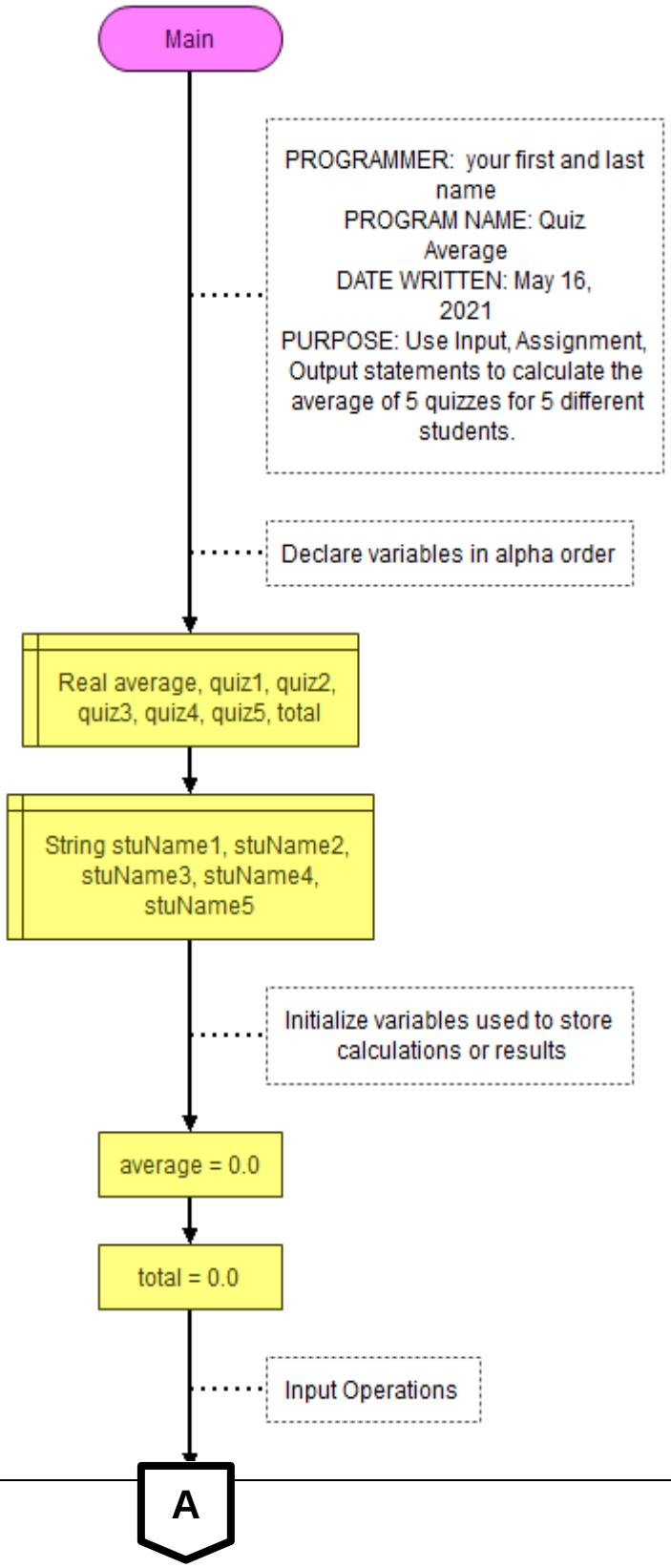
PRACTICE EXERCISE #02

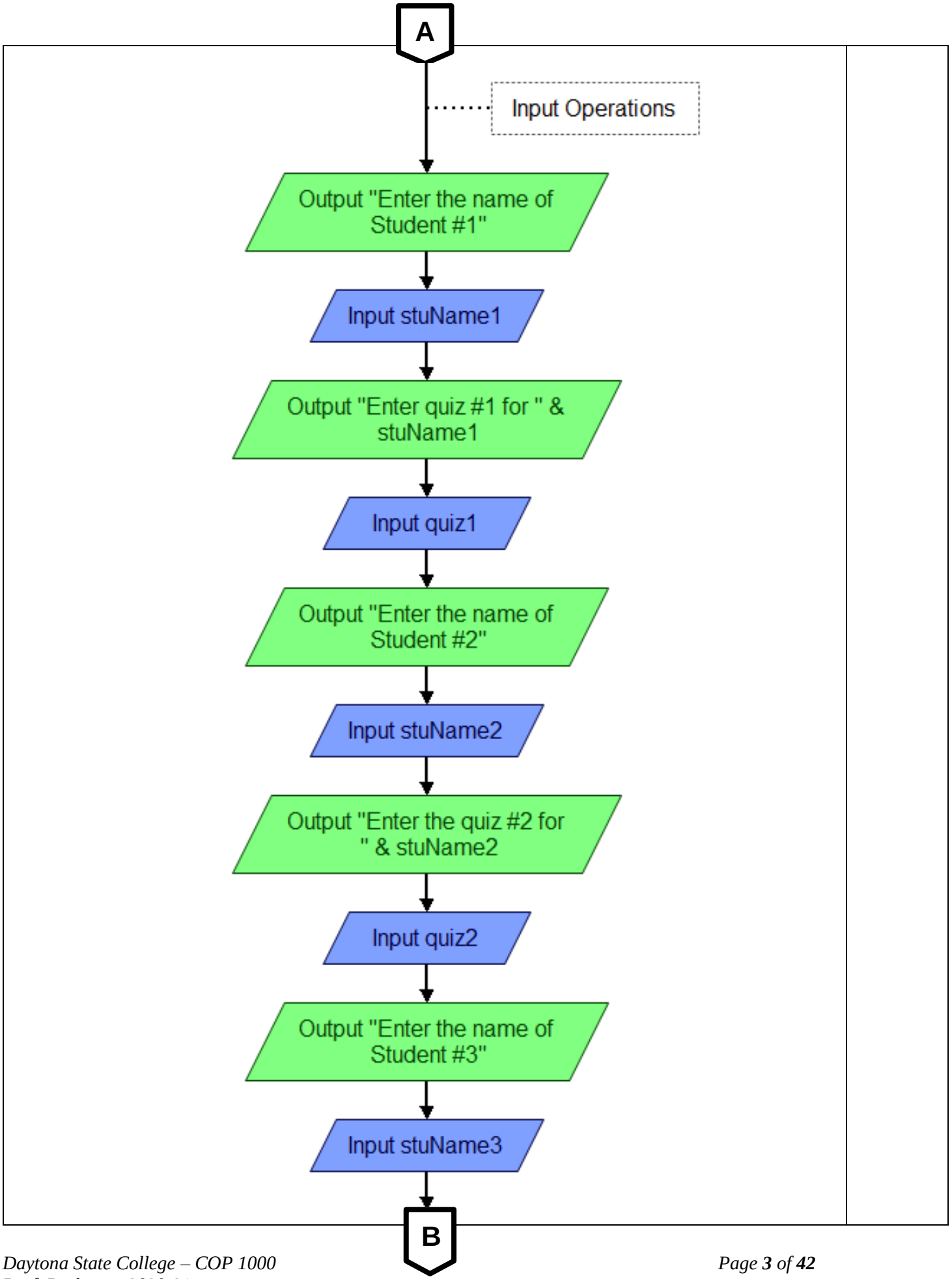
RESOURCES NEEDED TO COMPLETE ASSIGNMENT: • Read Python textbook - Chapter 2 Input, Processing, Output, and calculations • See LINKS & VIDEOS under CONTENT LINK FOR WEEK #2	Score
Description for Assignment #01 –	

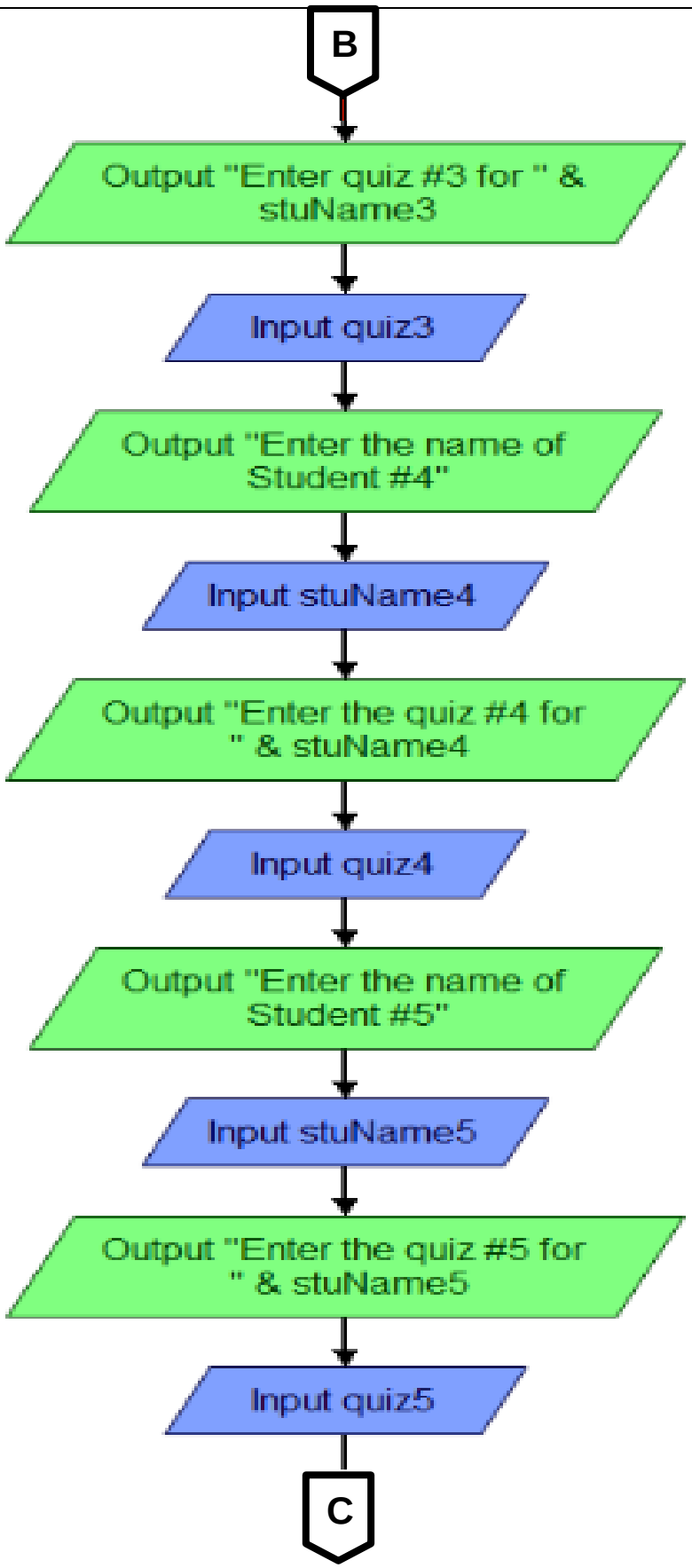
PART 1: PRACTICE EXERCISE:
LastName_FirstName_A1_Student_Quiz_Average.fprg It is located under the content link of Week #2 and under the Assignment #01 Drop box. You will download it in either location and open it.
 	
DEMONSTRATING HOW TO CREATE INPUT, ASSIGNMENT, and OUTPUT statements and use the following object:
• **Variables**
• **Data Types**
• **And String Objects.**
 	
This practice exercise will ask a user to enter:
• **The names of 5 students and their corresponding quiz scores**
• **The total of the quizzes will be calculated**
• **The average of the quizzes will be calculated**
• **Print A report of the Quizzes which consists of output statements to print:**
  ○ **A column heading report (Centered)**
  ○ **Student Name and Quiz Column heading**
  ○ **All 5 of the student names and corresponding quizzes in two columns as shown on the next page:**
  ○ **The total of all the quizzes**
  ○ **An average of all the quizzes**
• **Next, a file to save the output will be created.**	

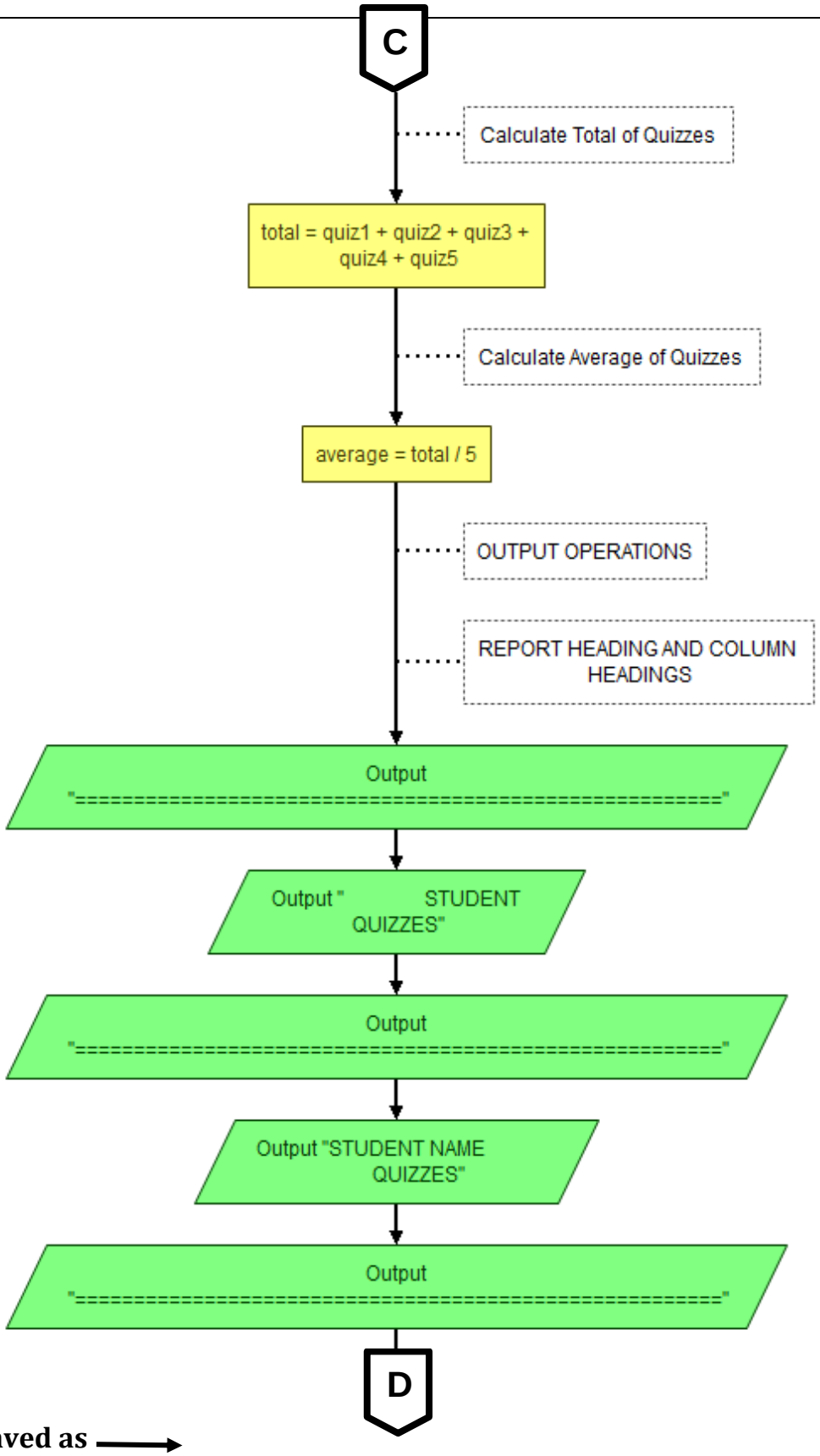
VIEW THE VIDEOS UNDER WEEK #02 TO UNDERSTAND HOW TO CREATE THE FOLLOWING FLOWGORITHM PROGRAM:

Actual flowgorithm source

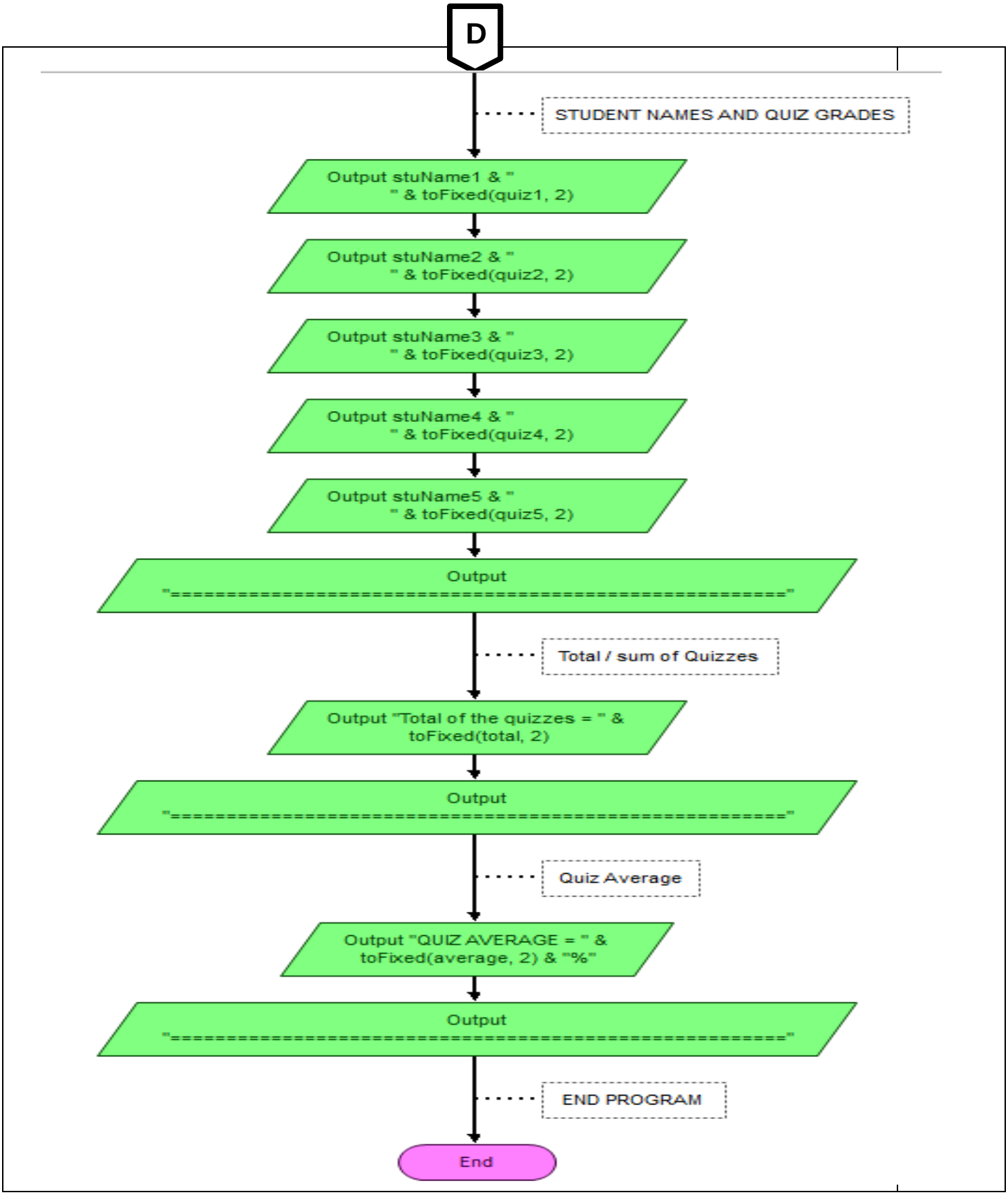



A
Input Operations
Output "Enter the name of Student #1"
Input stuName1
Output "Enter quiz #1 for " & stuName1
Input quiz1
Output "Enter the name of Student #2"
Input stuName2
Output "Enter the quiz #2 for " & stuName2
Input quiz2
Output "Enter the name of Student #3"
Input stuName3
B


B
Output "Enter quiz #3 for " & stuName3
Input quiz3
Output "Enter the name of Student #4"
Input stuName4
Output "Enter the quiz #4 for " & stuName4
Input quiz4
Output "Enter the name of Student #5"
Input stuName5
Output "Enter the quiz #5 for " & stuName5
Input quiz5
C



This file Is saved as ⟶
LastName_FirstName_A1_Student_Quiz_Average.fprg



REMINDER: This actual Flowgorithm program is located under the CONTENT LINK, WEEK #02 for you to download and open. It can also be downloaded under the ASSIGNMENT LINK, Assignment #01 drop box

This flowgorithm assignment has been saved as
LastName_FirstName_A1_Student_Quiz_Average

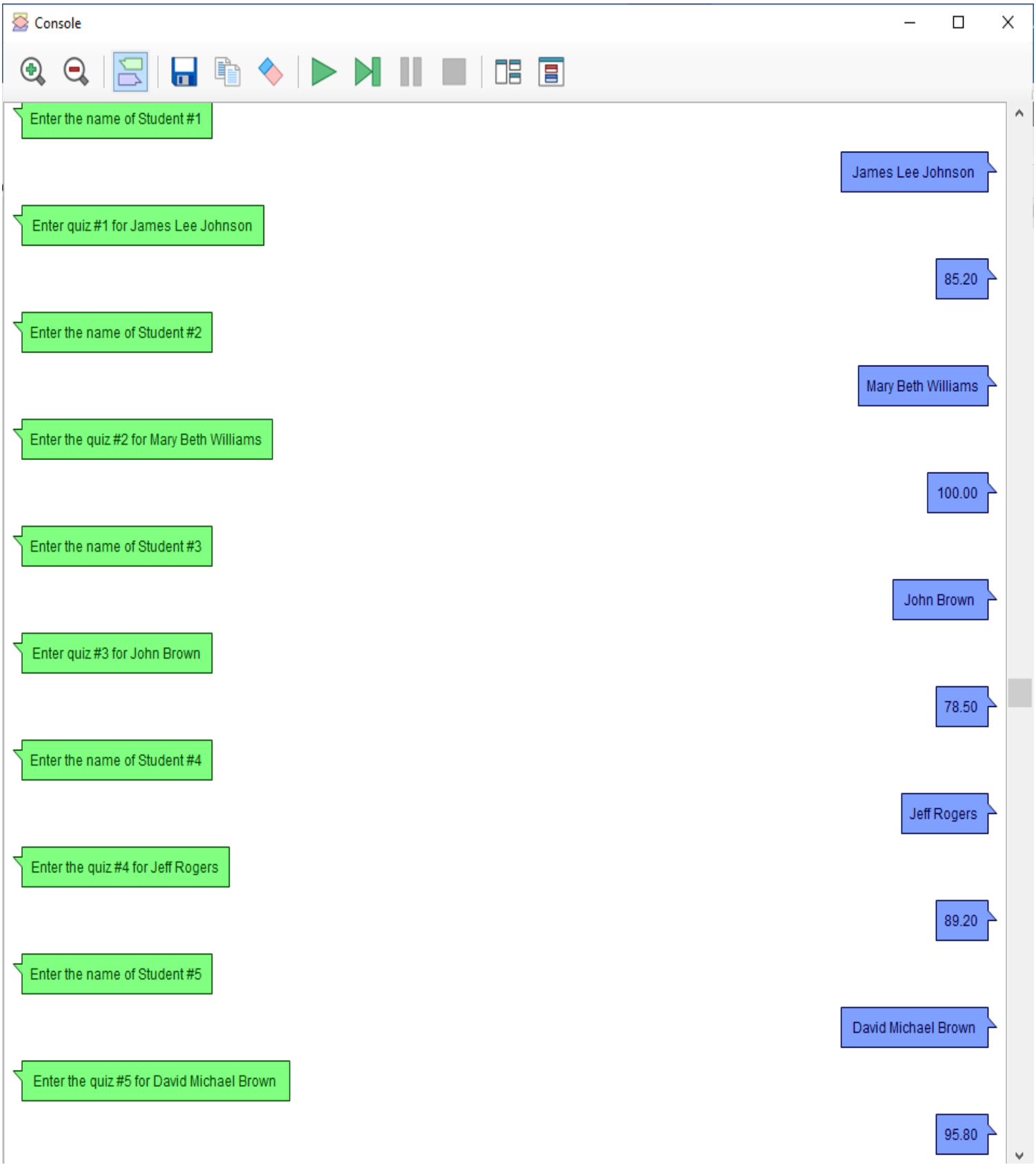
- **As you view the video, make sure you understand each symbol and statements. You may view as often as necessary to understand.**

STORING THE RESULTS FROM THE SCREEN/MONITOR to AN OUTPUT FILE OR CREATING A FILE TO STORE THE OUTPUT

IN THE NEXT STEP YOU WILL RUN/EXECUTE THE FLOWGORITHM FLOW CHART: as shown on the next page

Continue on Next Page

RUN the program by clicking F5 key or the play button and enter the following: [Chat Bubble display]

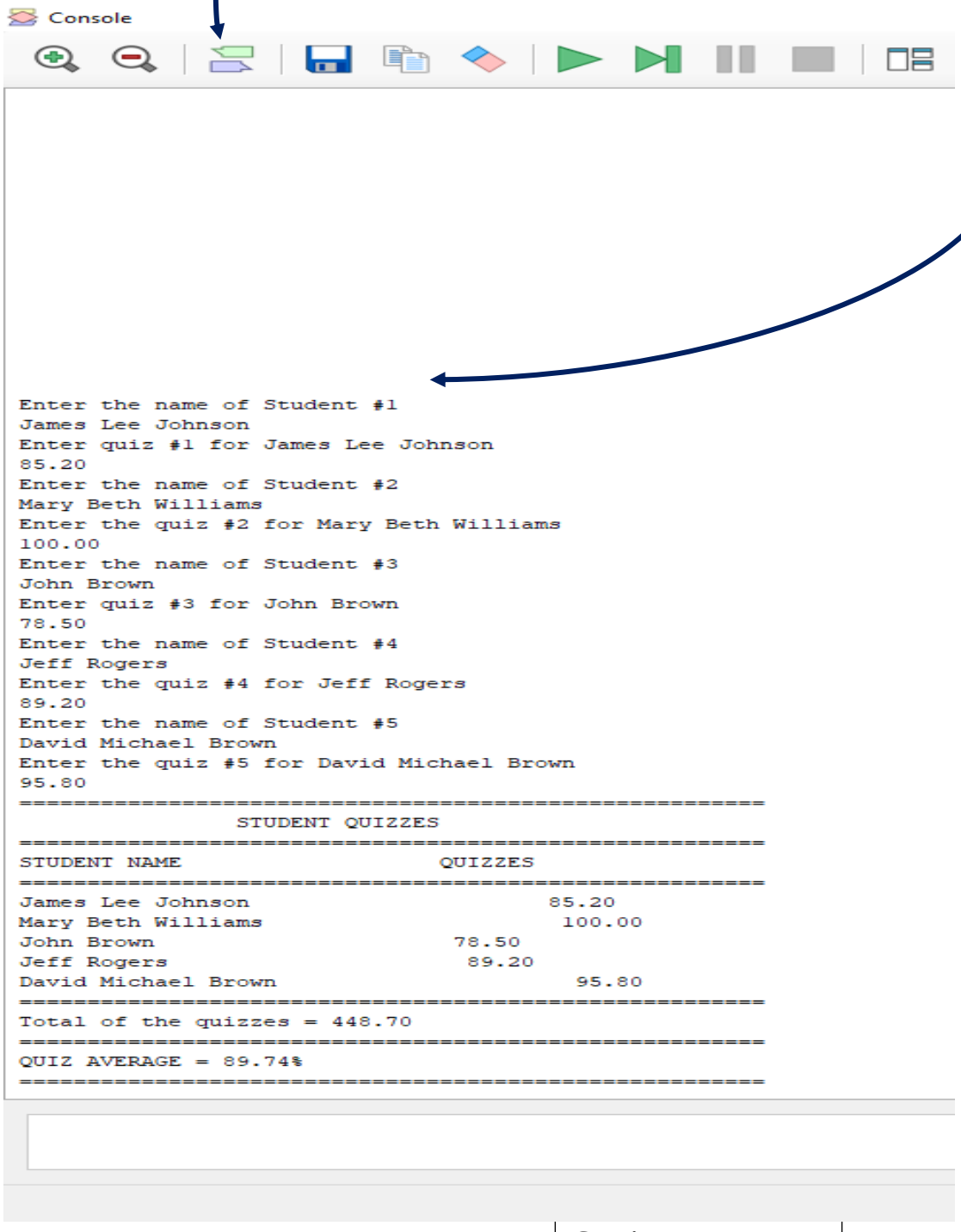


The Flowgorithm Program produces the following OUTPUT:

Click the CHAT BUBBLE ICON and output will display as a text version.

Enter the data below with the CHAT BUBBLE displaying as text version of the output: Shown below:

Clicking the CHAT BUBBLE Toggles between the chat bubble display and the text display.

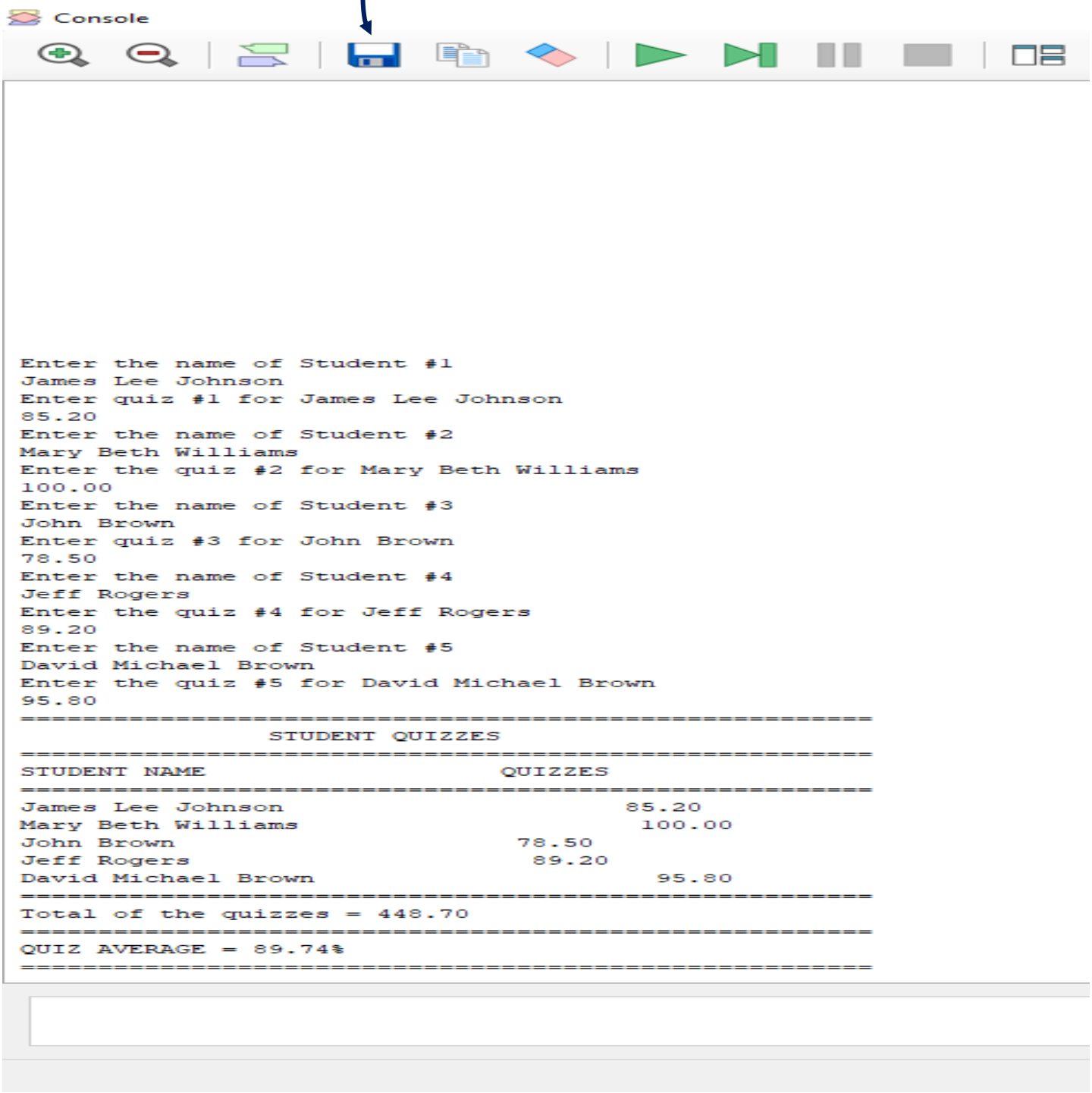


Continue next page

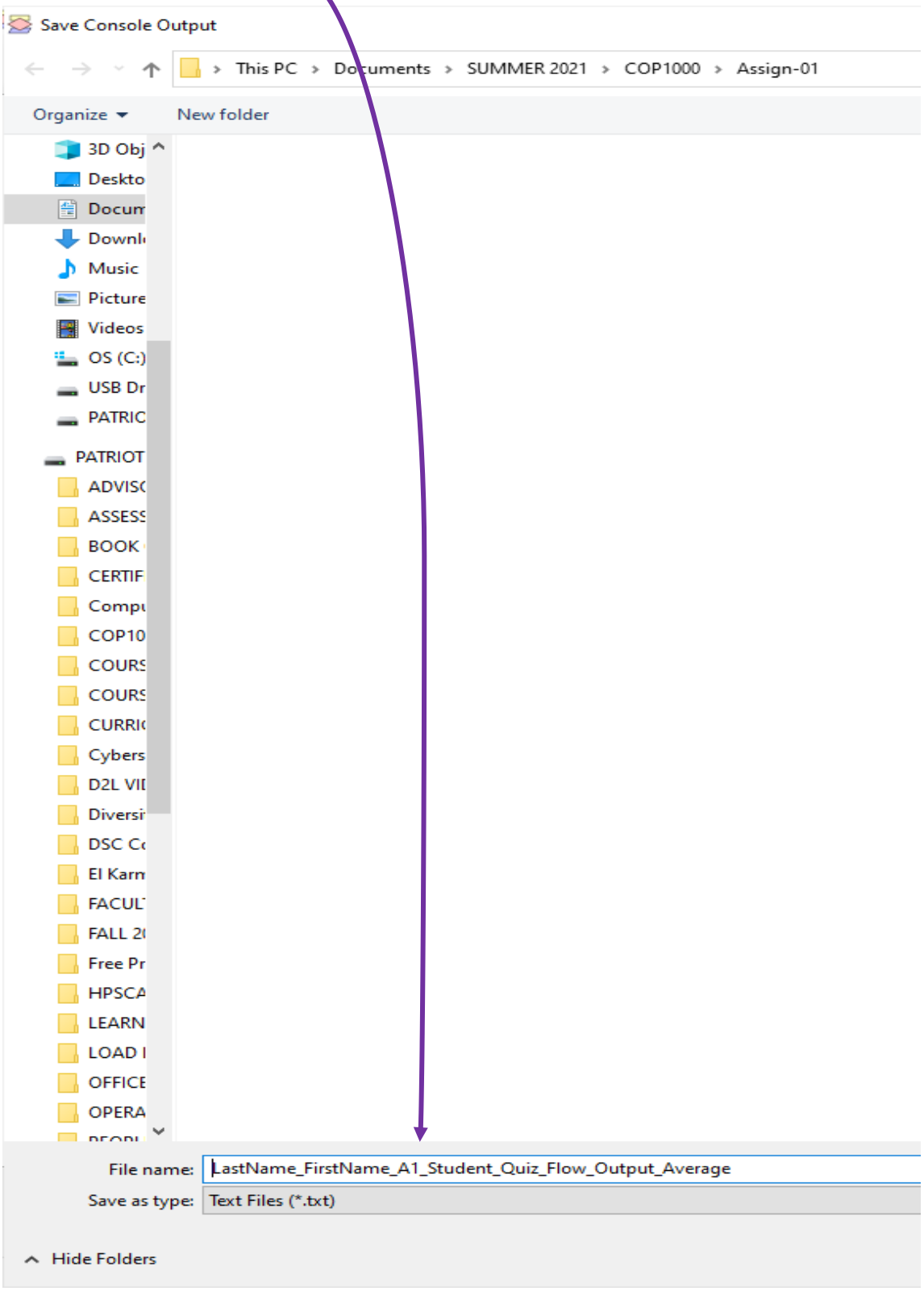
Keep this output from the previous page and this page on your console / screen so that you may be able to save the results to a dedicated / separate file (text file).

To create the text file, do the following:

1. ☐ Click the save button on the Console screen that contains the output, not the file that contains the actual flowgorithm program.

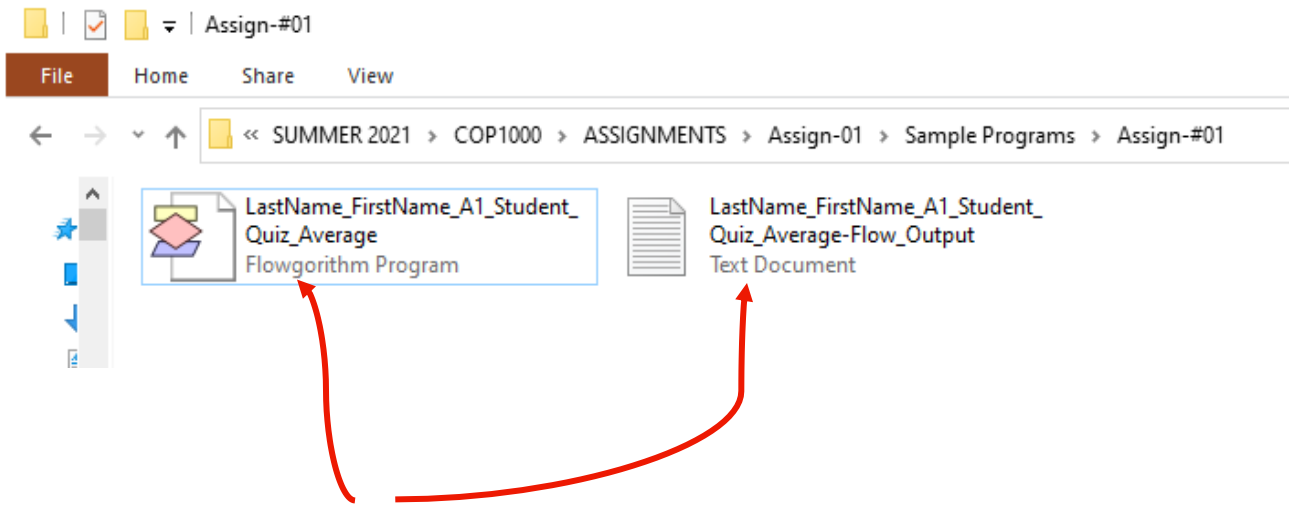


2. ☐ Type **LastName_FirstName_A1_Student_Quiz_Average-Flow_Output.txt and press the SAVE BUTTON. [This is a text file and not the flowgorithm source code]**



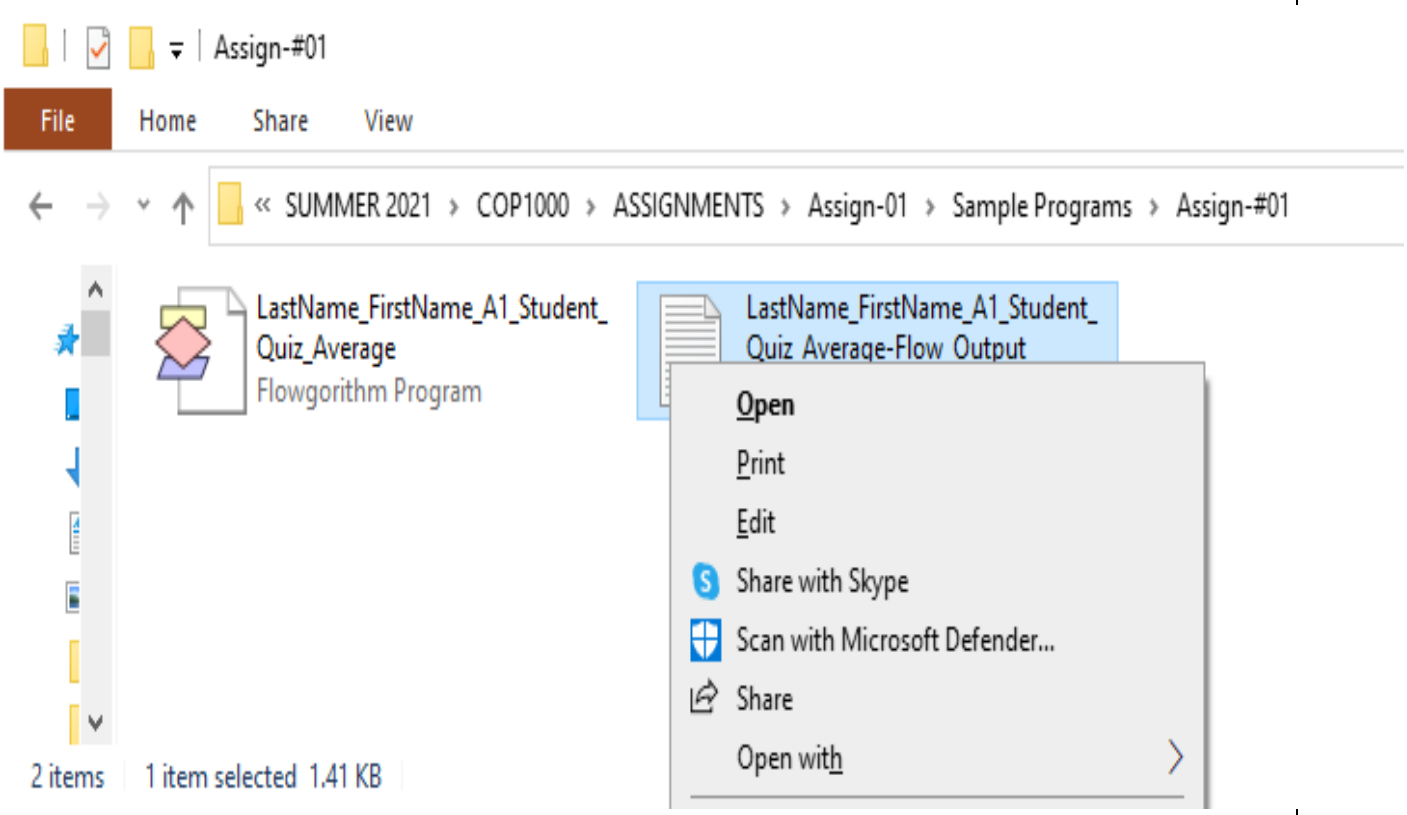
Continue next page

3. ☐ Once the SAVE BUTTON is pressed the **file should display as follows inside your storage location as a text file:**

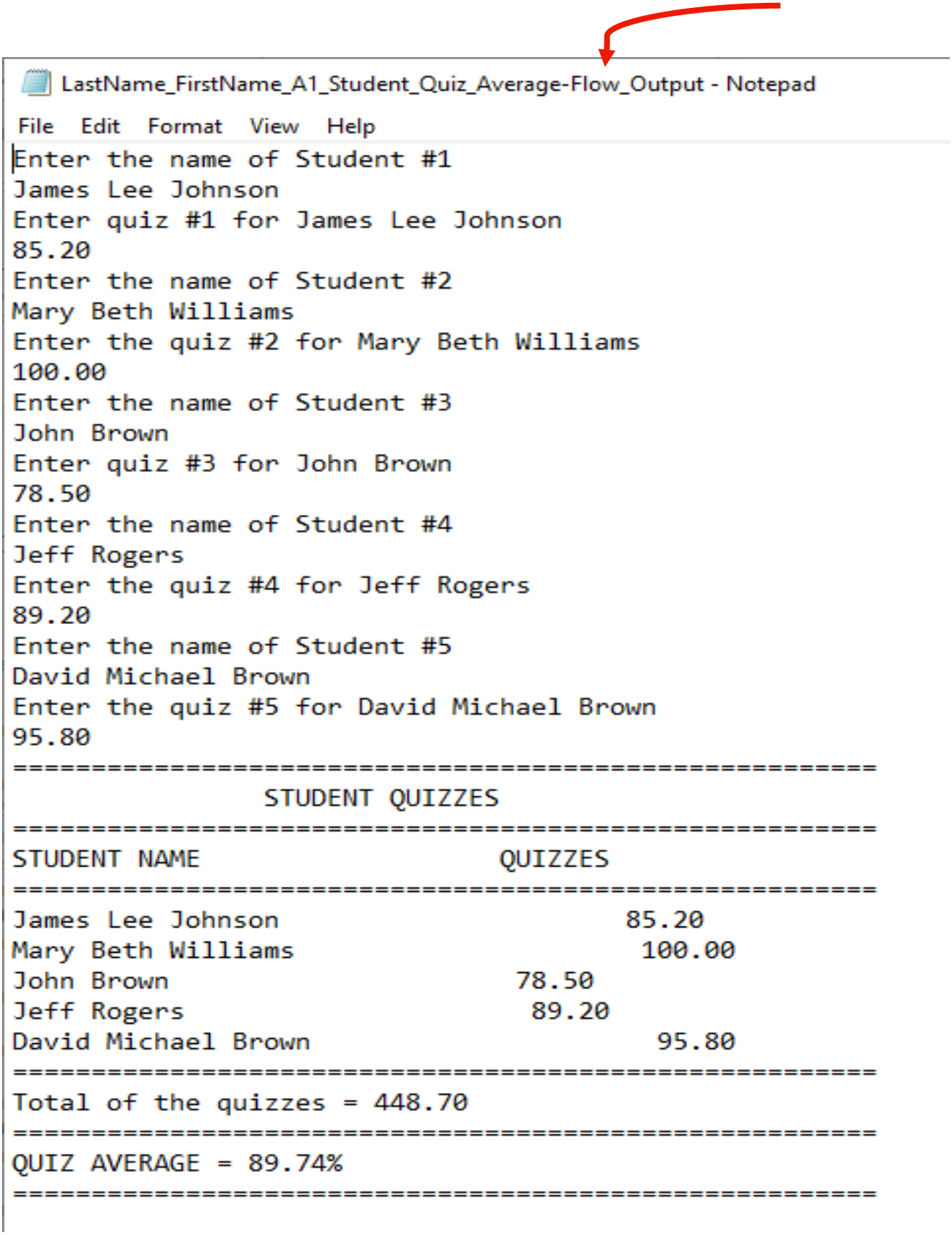


4. ☐ There should be two files in the location where you stored the actual source code flowgorithm flowchart and the text file used to store the results. As shown

5. ☐ Next, open the text file by Right Clicking on the flowgorithm output.txt file and choose Open option:



CONTENTS OF THE OPENED FILE SAVED AS A TEXT FILE INSIDE NOTE PAD.



LastName_FirstName_A1_Student_Quiz_Average-Flow_Output - Notepad

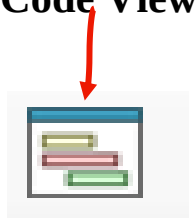
File Edit Format View Help

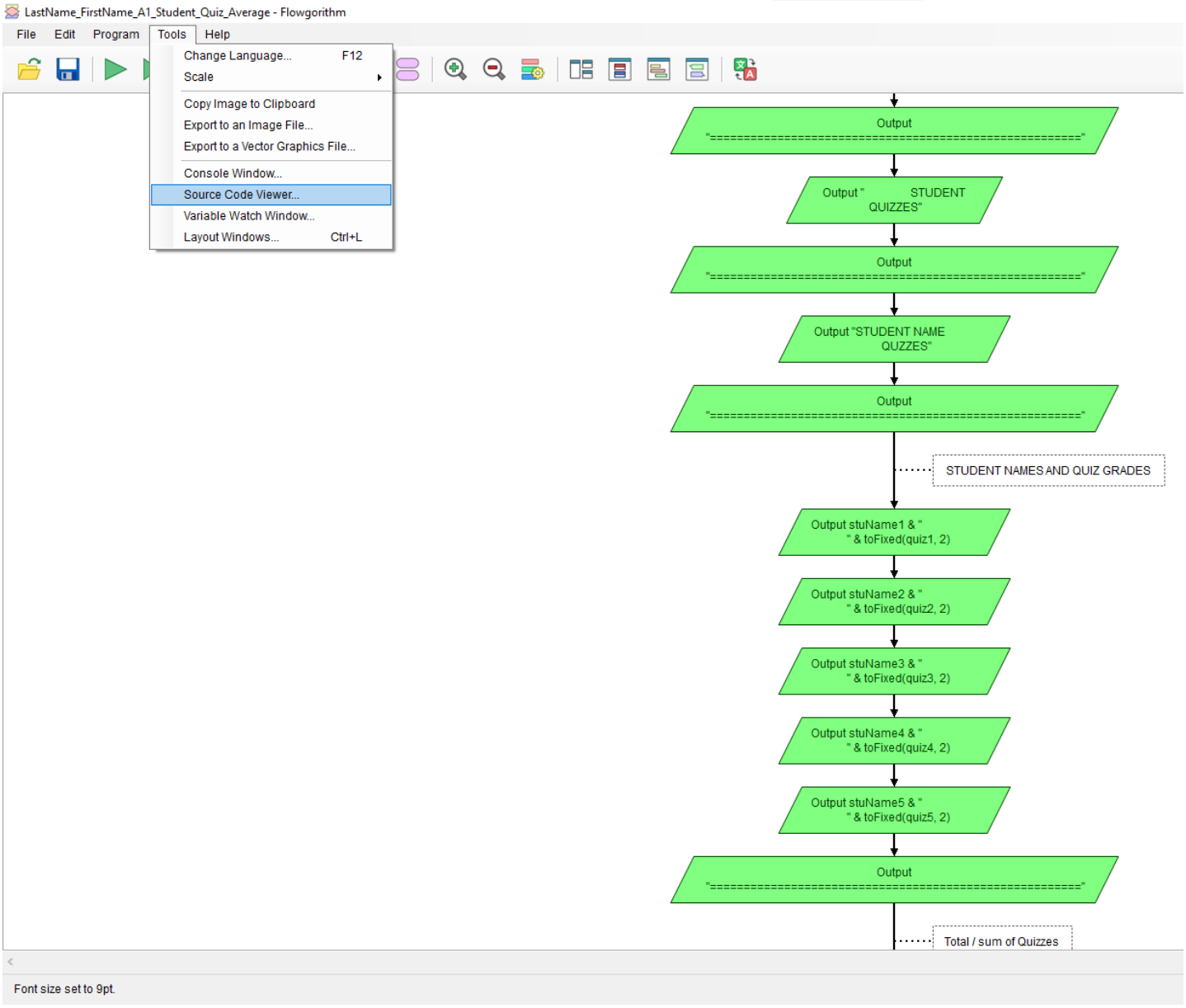
```
Enter the name of Student #1
James Lee Johnson
Enter quiz #1 for James Lee Johnson
85.20
Enter the name of Student #2
Mary Beth Williams
Enter the quiz #2 for Mary Beth Williams
100.00
Enter the name of Student #3
John Brown
Enter quiz #3 for John Brown
78.50
Enter the name of Student #4
Jeff Rogers
Enter the quiz #4 for Jeff Rogers
89.20
Enter the name of Student #5
David Michael Brown
Enter the quiz #5 for David Michael Brown
95.80
=========================================================
                  STUDENT QUIZZES
=========================================================
STUDENT NAME                        QUIZZES
=========================================================
James Lee Johnson                              85.20
Mary Beth Williams                              100.00
John Brown                             78.50
Jeff Rogers                             89.20
David Michael Brown                              95.80
=========================================================
Total of the quizzes = 448.70
=========================================================
QUIZ AVERAGE = 89.74%
=========================================================
```

PART 2: CONVERTING FLOWGORITHM TO PYTHON CODE:

☐ **NEXT express the flowgorithm program into Python: The flowgorithm program will be converted to python.**

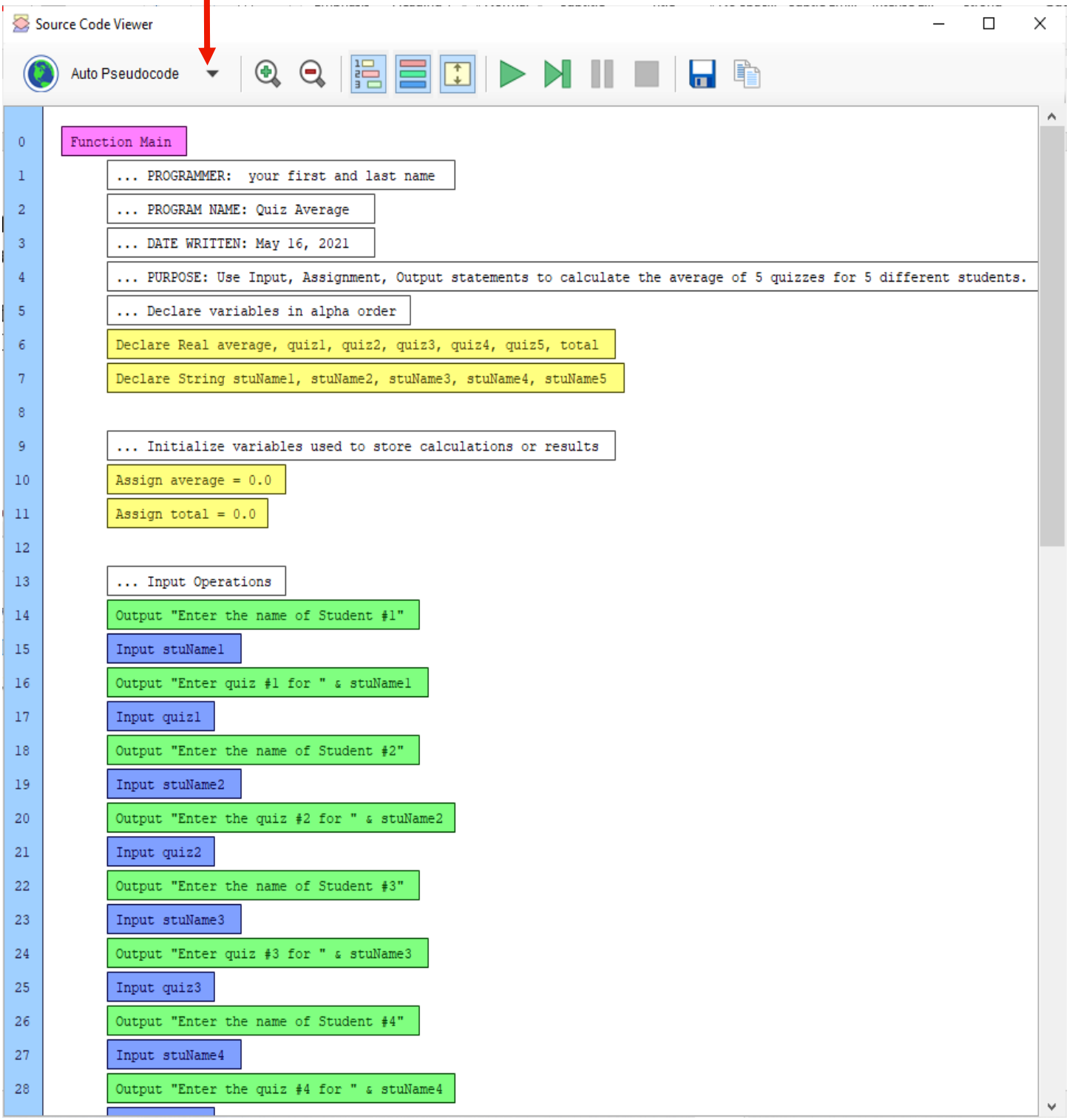
1. ☐ **Go back to the flowgorithm source Code program**
2. ☐ **Click the Tools Menu and choose the Source Code Viewer Option**





Continue next page

3. ☐ **Once selected, the following screen will appear:**
4. ☐ **Click the down arrow / more button next to the Auto Pseudocode label and a list of different programs will appear that can be chosen to convert over to.**



The flowgorithm flowchart can be converted to the any of following programs / languages listed below:

5. ☐ Click the **Python option** located in the 2nd column (middle)

6. ☐ Once the Python option is selected the following screen appears:

Source Code Viewer

Python

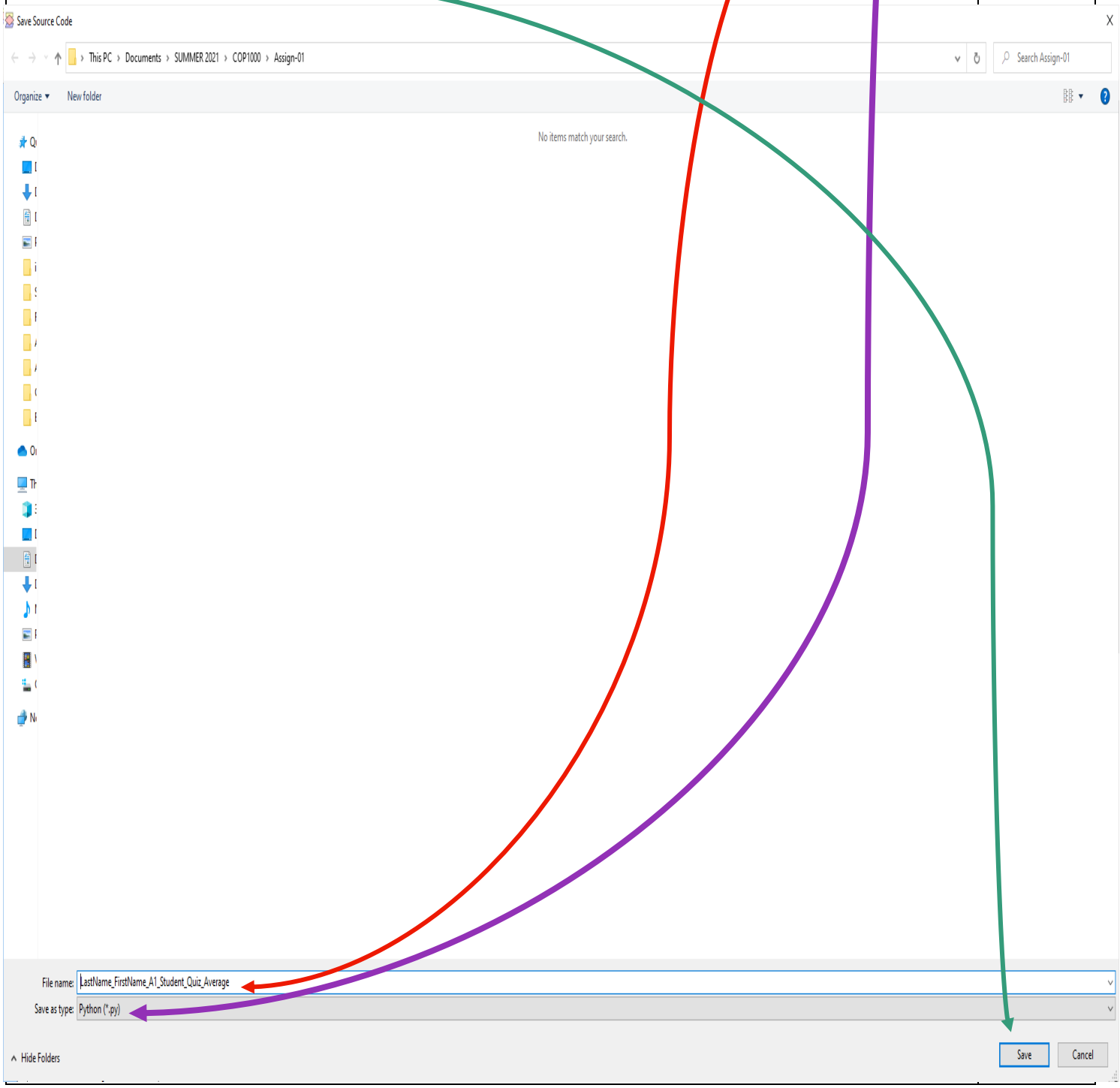
```
0   def toFixed(value, digits):
1         return "%.*f" % (digits, value)
2
3   # PROGRAMMER:  your first and last name
4   # PROGRAM NAME: Quiz Average
5   # DATE WRITTEN: May 16, 2021
6   # PURPOSE: Use Input, Assignment, Output statements to calculate the average of 5 quizzes for 5 different students.
7   # Declare variables in alpha order
8   # Initialize variables used to store calculations or results
9   average = 0.0
10  total = 0.0
11
12  # Input Operations
13  print("Enter the name of Student #1")
14  stuName1 = input()
15  print("Enter quiz #1 for " + stuName1)
16  quiz1 = float(input())
17  print("Enter the name of Student #2")
18  stuName2 = input()
19  print("Enter the quiz #2 for " + stuName2)
20  quiz2 = float(input())
21  print("Enter the name of Student #3")
22  stuName3 = input()
23  print("Enter quiz #3 for " + stuName3)
24  quiz3 = float(input())
25  print("Enter the name of Student #4")
26  stuName4 = input()
27  print("Enter the quiz #4 for " + stuName4)
28  quiz4 = float(input())
29  print("Enter the name of Student #5")
30  stuName5 = input()
31  print("Enter the quiz #5 for " + stuName5)
32  quiz5 = float(input())
33
```

```
33
34  # Calculate Total of Quizzes
35  total = quiz1 + quiz2 + quiz3 + quiz4 + quiz5
36
37  # Calculate Average of Quizzes
38  average = total / 5
39
40  # OUTPUT OPERATIONS
41  # REPORT HEADING AND COLUMN HEADINGS
42  print("=========================================================")
43  print("                 STUDENT QUIZZES")
44  print("=========================================================")
45  print("STUDENT NAME                    QUIZZES")
46  print("=========================================================")
47
48  # STUDENT NAMES AND QUIZ GRADES
49  print(stuName1 + "                          " + toFixed(quiz1,2))
50  print(stuName2 + "                          " + toFixed(quiz2,2))
51  print(stuName3 + "                          " + toFixed(quiz3,2))
52  print(stuName4 + "                          " + toFixed(quiz4,2))
53  print(stuName5 + "                          " + toFixed(quiz5,2))
54  print("=========================================================")
55
56  # Total / sum of Quizzes
57  print("Total of the quizzes = " + toFixed(total,2))
58  print("=========================================================")
59
60  # Quiz Average
61  print("QUIZ AVERAGE = " + toFixed(average,2) + "%")
62  print("=========================================================")
63
64  # END PROGRAM
```

7. ☐ YOU MUST NOW SAVE THE CODE ON THE SCREEN AS PYTHON CODE BY CLICKING THE SAVE ICON BUTTON

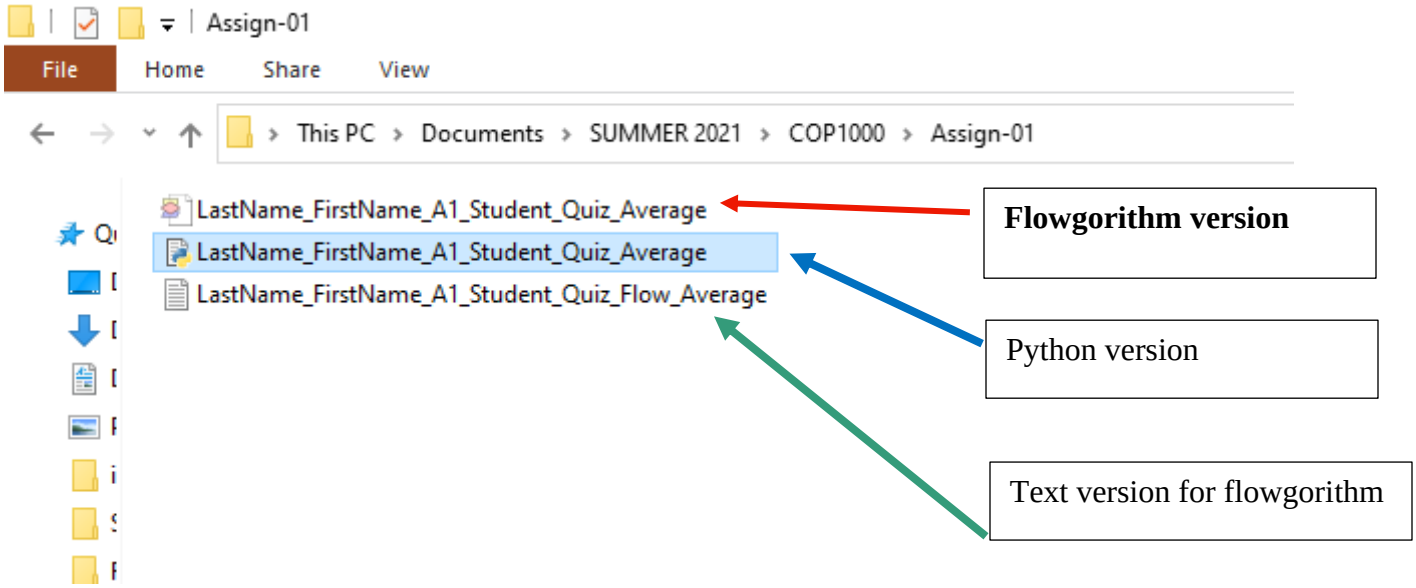

```
0   def toFixed(value, digits):
1       return "%.*f" % (digits, value)
2
3   # PROGRAMMER:  your first and last name
4   # PROGRAM NAME: Quiz Average
5   # DATE WRITTEN: May 16, 2021
6   # PURPOSE: Use Input, Assignment, Output statements to calculate the average of 5 quizzes for 5 different students.
7   # Declare variables in alpha order
8   # Initialize variables used to store calculations or results
9   average = 0.0
10  total = 0.0
11
12  # Input Operations
13  print("Enter the name of Student #1")
14  stuName1 = input()
15  print("Enter quiz #1 for " + stuName1)
16  quiz1 = float(input())
17  print("Enter the name of Student #2")
18  stuName2 = input()
19  print("Enter the quiz #2 for " + stuName2)
20  quiz2 = float(input())
21  print("Enter the name of Student #3")
22  stuName3 = input()
23  print("Enter quiz #3 for " + stuName3)
24  quiz3 = float(input())
25  print("Enter the name of Student #4")
26  stuName4 = input()
27  print("Enter the quiz #4 for " + stuName4)
28  quiz4 = float(input())
29  print("Enter the name of Student #5")
30  stuName5 = input()
31  print("Enter the quiz #5 for " + stuName5)
32  quiz5 = float(input())
33
```

8. ☐ **Click the <u>Save Icon</u> and the program will save as Python code using the same file name as the flowgorithm version, but with a different suffix or extension (.py)**
   Once you click the save Icon button,
9. ☐ **Press the save button at the bottom of the screen**

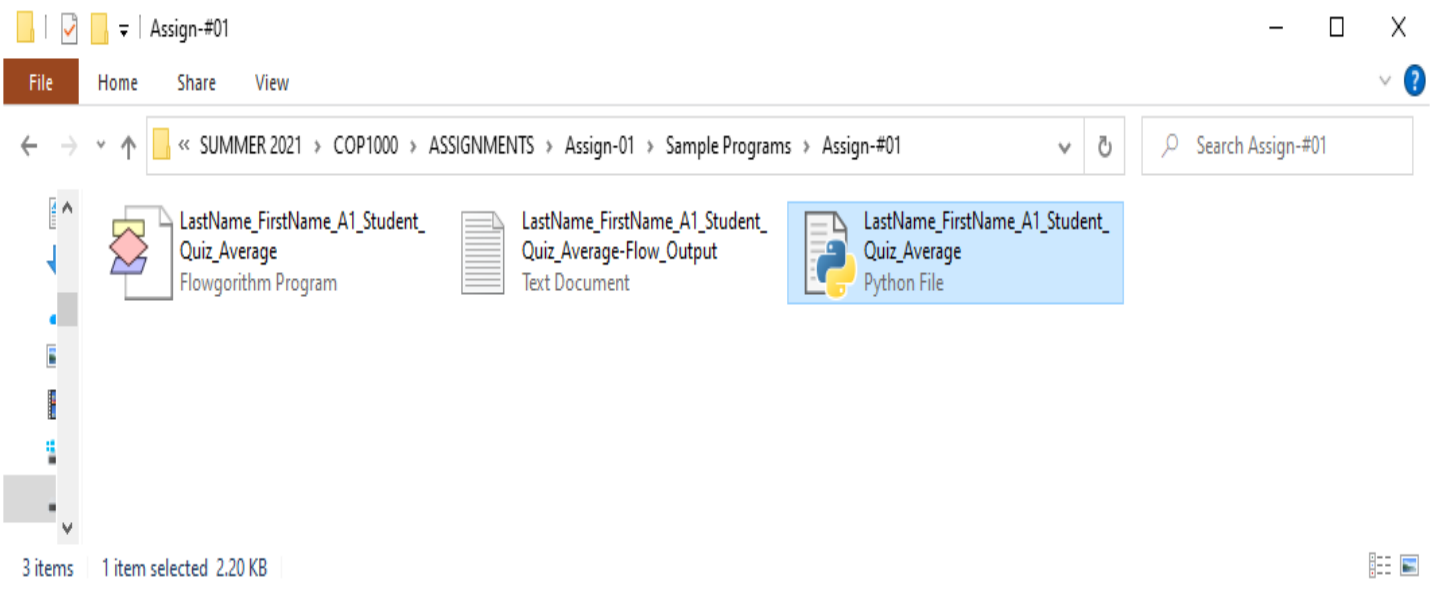


10. ☐ After the Python file has been saved, close the Source Code Viewer window.

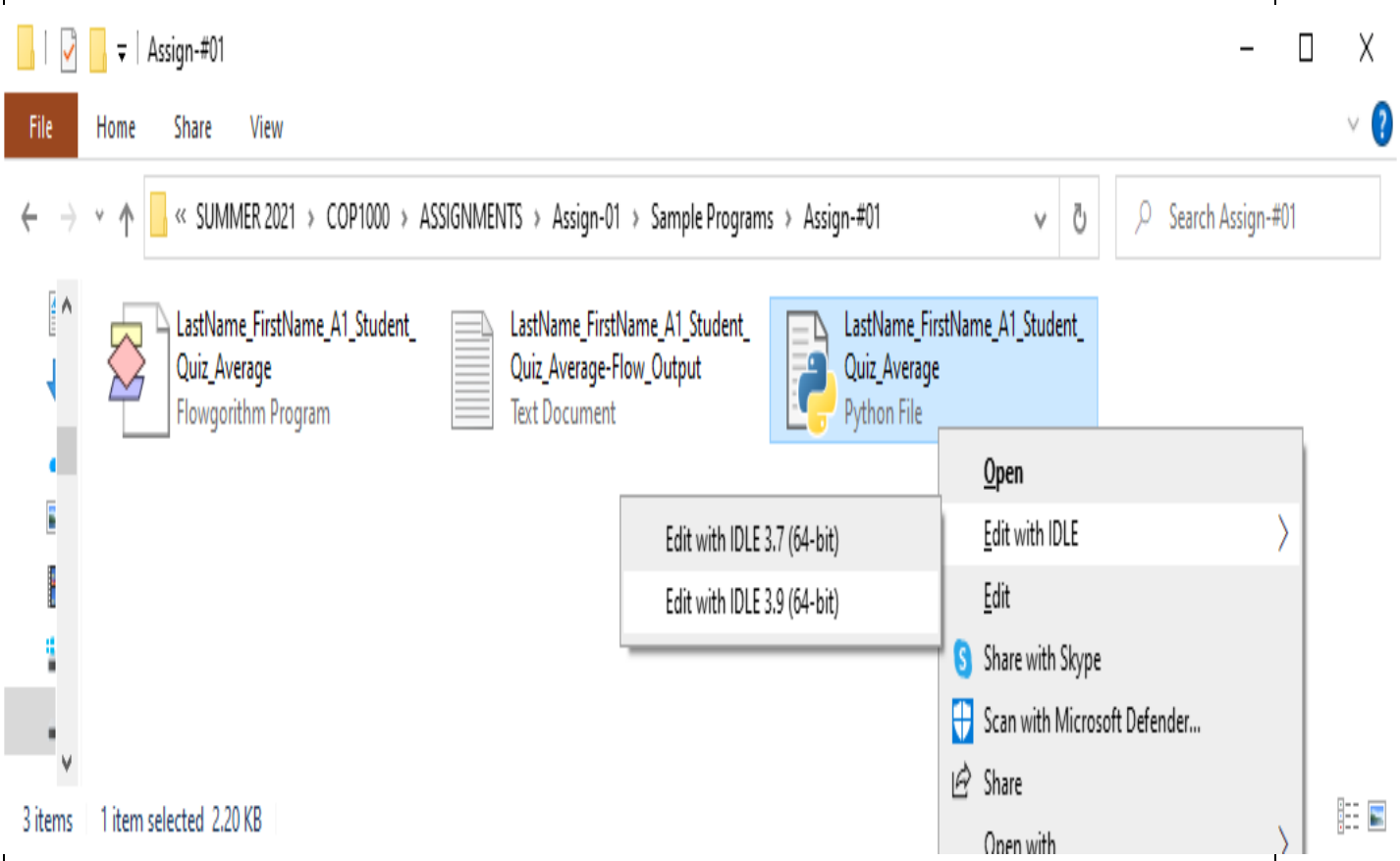
11. ☐ Go to the location where the source code for Python was saved and open. This python program will save in the same folder where the flowgorithm file was saved. Your screen will resemble the following when you go to the location where the file was stored:



IF YOU CHANGE TO THE <u>TILE VIEW</u> IN THE FILE FOLDER OR DIRECTORY WHERE THE FILES ARE STORED THIS IS WHAT DISPLAYS:



12. ☐ Open the Python file:
    a. ☐ Right click on the Python file name
    b. ☐ Click the Edit with IDLE option [not the open option]
    c. ☐ Edit with Idle, and
    d. ☐ Choose Edit with Idle 3.9(64-bit): [The file will then open] as shown below:



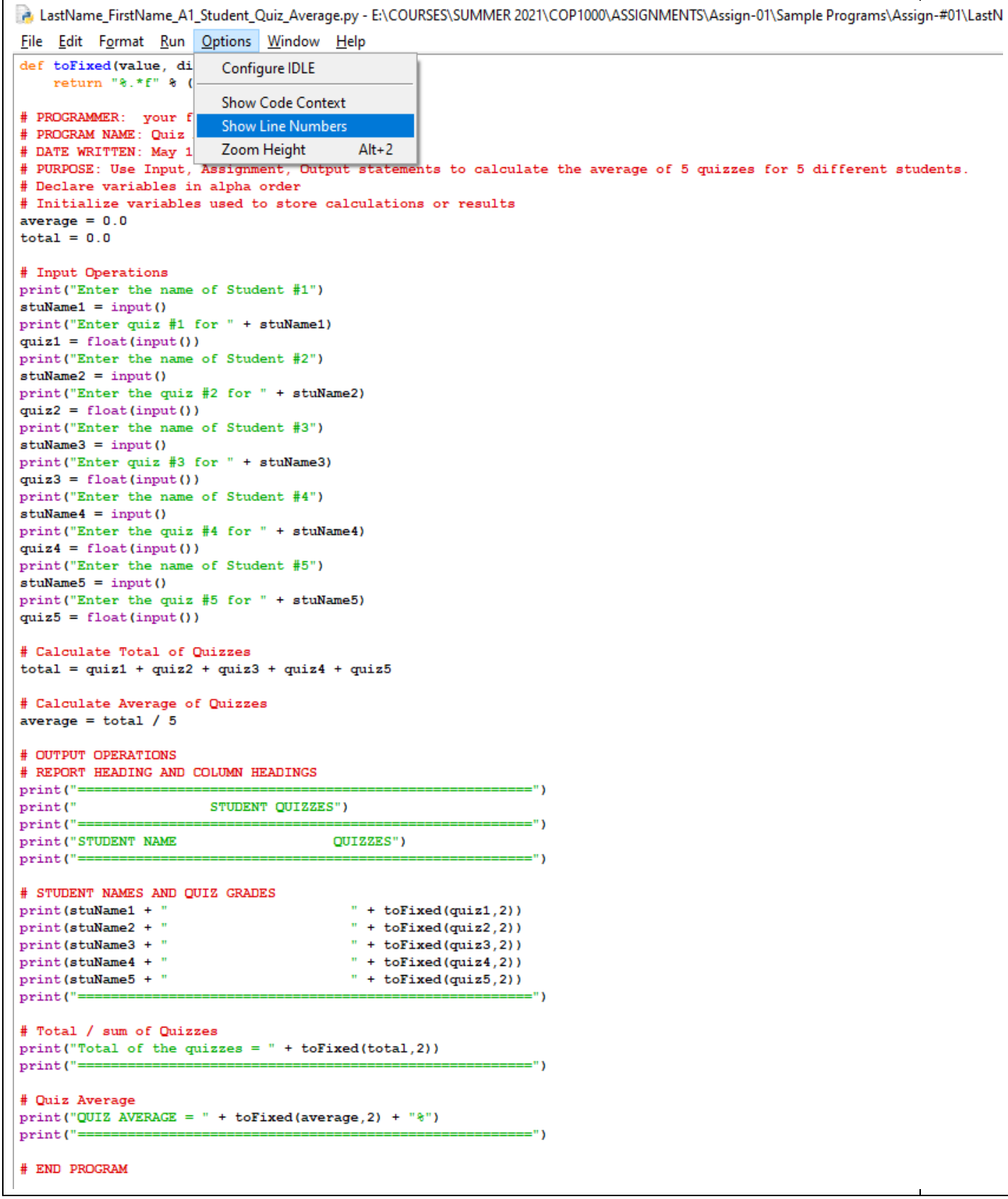
The Python program will display as shown below:

LastName_FirstName_A1_Student_Quiz_Average.py - E:\COURSES\SUMMER 2021\COP1000\ASSIGNMENTS\Assign-01\Sample Programs\Assign-#01\LastI

File Edit Format Run Options Window Help

```
def toFixed(value, digits):
    return "%.*f" % (digits, value)

# PROGRAMMER:  your first and last name
# PROGRAM NAME: Quiz Average
# DATE WRITTEN: May 16, 2021
# PURPOSE: Use Input, Assignment, Output statements to calculate the average of 5 quizzes for 5 different students.
# Declare variables in alpha order
# Initialize variables used to store calculations or results
average = 0.0
total = 0.0

# Input Operations
print("Enter the name of Student #1")
stuName1 = input()
print("Enter quiz #1 for " + stuName1)
quiz1 = float(input())
print("Enter the name of Student #2")
stuName2 = input()
print("Enter the quiz #2 for " + stuName2)
quiz2 = float(input())
print("Enter the name of Student #3")
stuName3 = input()
print("Enter quiz #3 for " + stuName3)
quiz3 = float(input())
print("Enter the name of Student #4")
stuName4 = input()
print("Enter the quiz #4 for " + stuName4)
quiz4 = float(input())
print("Enter the name of Student #5")
stuName5 = input()
print("Enter the quiz #5 for " + stuName5)
quiz5 = float(input())

# Calculate Total of Quizzes
total = quiz1 + quiz2 + quiz3 + quiz4 + quiz5

# Calculate Average of Quizzes
average = total / 5

# OUTPUT OPERATIONS
# REPORT HEADING AND COLUMN HEADINGS
print("=========================================================")
print("                STUDENT QUIZZES")
print("=========================================================")
print("STUDENT NAME                    QUIZZES")
print("=========================================================")

# STUDENT NAMES AND QUIZ GRADES
print(stuName1 + "                        " + toFixed(quiz1,2))
print(stuName2 + "                        " + toFixed(quiz2,2))
print(stuName3 + "                        " + toFixed(quiz3,2))
print(stuName4 + "                        " + toFixed(quiz4,2))
print(stuName5 + "                        " + toFixed(quiz5,2))
print("=========================================================")

# Total / sum of Quizzes
print("Total of the quizzes = " + toFixed(total,2))
print("=========================================================")

# Quiz Average
print("QUIZ AVERAGE = " + toFixed(average,2) + "%")
print("=========================================================")

# END PROGRAM
```

13. ☐ Before you run or execute the python program, **please show the line numbers** in Python.
14. ☐ Click the OPTIONS MENU:




```
def toFixed(value, di
    return "%.*f" % (

# PROGRAMMER:  your f
# PROGRAM NAME: Quiz
# DATE WRITTEN: May 1
# PURPOSE: Use Input, Assignment, Output statements to calculate the average of 5 quizzes for 5 different students.
# Declare variables in alpha order
# Initialize variables used to store calculations or results
average = 0.0
total = 0.0

# Input Operations
print("Enter the name of Student #1")
stuName1 = input()
print("Enter quiz #1 for " + stuName1)
quiz1 = float(input())
print("Enter the name of Student #2")
stuName2 = input()
print("Enter the quiz #2 for " + stuName2)
quiz2 = float(input())
print("Enter the name of Student #3")
stuName3 = input()
print("Enter quiz #3 for " + stuName3)
quiz3 = float(input())
print("Enter the name of Student #4")
stuName4 = input()
print("Enter the quiz #4 for " + stuName4)
quiz4 = float(input())
print("Enter the name of Student #5")
stuName5 = input()
print("Enter the quiz #5 for " + stuName5)
quiz5 = float(input())

# Calculate Total of Quizzes
total = quiz1 + quiz2 + quiz3 + quiz4 + quiz5

# Calculate Average of Quizzes
average = total / 5

# OUTPUT OPERATIONS
# REPORT HEADING AND COLUMN HEADINGS
print("=========================================================")
print("                  STUDENT QUIZZES")
print("=========================================================")
print("STUDENT NAME                    QUIZZES")
print("=========================================================")

# STUDENT NAMES AND QUIZ GRADES
print(stuName1 + "                        " + toFixed(quiz1,2))
print(stuName2 + "                        " + toFixed(quiz2,2))
print(stuName3 + "                        " + toFixed(quiz3,2))
print(stuName4 + "                        " + toFixed(quiz4,2))
print(stuName5 + "                        " + toFixed(quiz5,2))
print("=========================================================")

# Total / sum of Quizzes
print("Total of the quizzes = " + toFixed(total,2))
print("=========================================================")

# Quiz Average
print("QUIZ AVERAGE = " + toFixed(average,2) + "%")
print("=========================================================")

# END PROGRAM
```

PYTHON PROGRAM WITH LINE NUMBERS DISPLAYING:

LastName_FirstName_A1_Student_Quiz_Average.py - E:\COURSES\SUMMER 2021\COP1000\ASSIGNMENTS\Assign-01\Sample Programs\Assign-#01\LastNa

File Edit Format Run Options Window Help

```
1  def toFixed(value, digits):
2      return "%.*f" % (digits, value)
3
4  # PROGRAMMER:  your first and last name
5  # PROGRAM NAME: Quiz Average
6  # DATE WRITTEN: May 16, 2021
7  # PURPOSE: Use Input, Assignment, Output statements to calculate the average of 5 quizzes for 5 different students.
8  # Declare variables in alpha order
9  # Initialize variables used to store calculations or results
10 average = 0.0
11 total = 0.0
12
13 # Input Operations
14 print("Enter the name of Student #1")
15 stuName1 = input()
16 print("Enter quiz #1 for " + stuName1)
17 quiz1 = float(input())
18 print("Enter the name of Student #2")
19 stuName2 = input()
20 print("Enter the quiz #2 for " + stuName2)
21 quiz2 = float(input())
22 print("Enter the name of Student #3")
23 stuName3 = input()
24 print("Enter quiz #3 for " + stuName3)
25 quiz3 = float(input())
26 print("Enter the name of Student #4")
27 stuName4 = input()
28 print("Enter the quiz #4 for " + stuName4)
29 quiz4 = float(input())
30 print("Enter the name of Student #5")
31 stuName5 = input()
32 print("Enter the quiz #5 for " + stuName5)
33 quiz5 = float(input())
34
35 # Calculate Total of Quizzes
36 total = quiz1 + quiz2 + quiz3 + quiz4 + quiz5
37
38 # Calculate Average of Quizzes
39 average = total / 5
40
41 # OUTPUT OPERATIONS
42 # REPORT HEADING AND COLUMN HEADINGS
43 print("============================================================")
44 print("                  STUDENT QUIZZES")
45 print("============================================================")
46 print("STUDENT NAME                      QUIZZES")
47 print("============================================================")
48
49 # STUDENT NAMES AND QUIZ GRADES
50 print(stuName1 + "                          " + toFixed(quiz1,2))
51 print(stuName2 + "                          " + toFixed(quiz2,2))
52 print(stuName3 + "                          " + toFixed(quiz3,2))
53 print(stuName4 + "                          " + toFixed(quiz4,2))
54 print(stuName5 + "                          " + toFixed(quiz5,2))
55 print("============================================================")
56
57 # Total / sum of Quizzes
58 print("Total of the quizzes = " + toFixed(total,2))
59 print("============================================================")
60
61 # Quiz Average
62 print("QUIZ AVERAGE = " + toFixed(average,2) + "%")
63 print("============================================================")
64
65 # END PROGRAM
66
```

RUN / EXECUTE THE PYTHON PROGRAM:

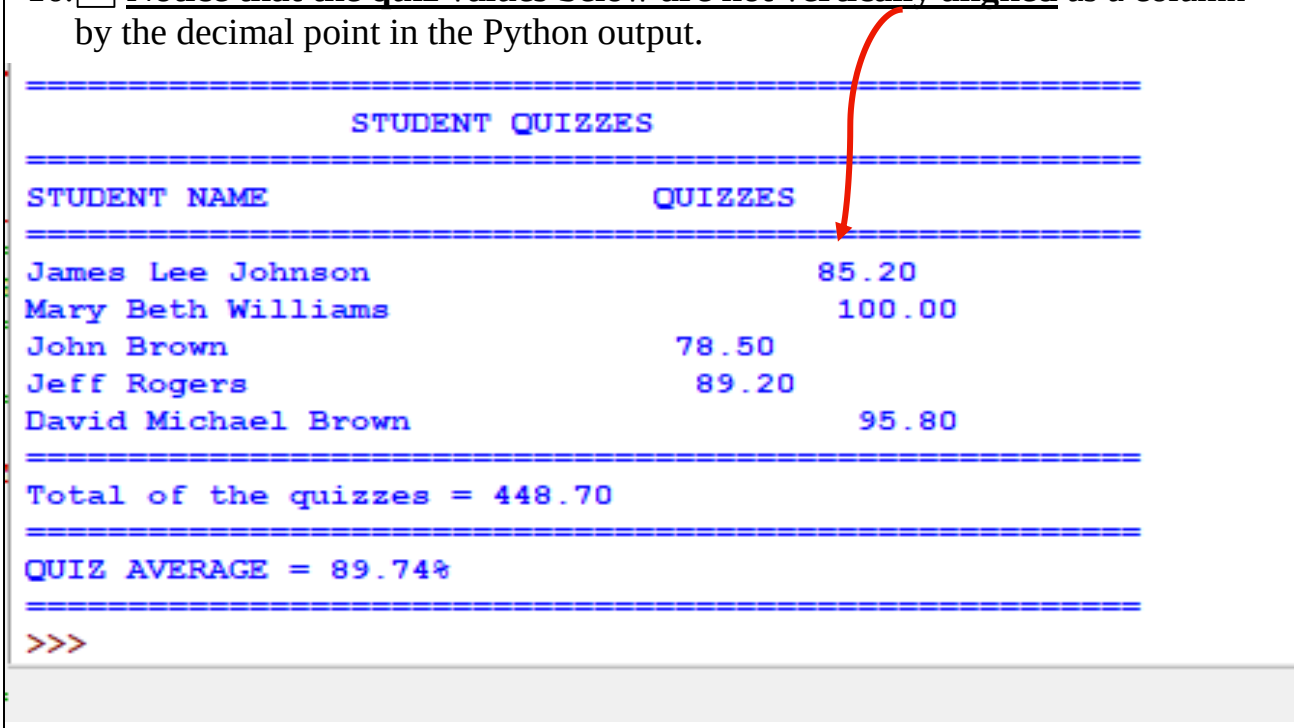
15. ☐ CLICK F5 key or Click the RUN MENU and choose the Run Module

RUN/EXECUTION:

```
Enter the name of Student #1
James Lee Johnson
Enter quiz #1 for James Lee Johnson
85.20
Enter the name of Student #2
Mary Beth Williams
Enter the quiz #2 for Mary Beth Williams
100
Enter the name of Student #3
John Brown
Enter quiz #3 for John Brown
78.50
Enter the name of Student #4
Jeff Rogers
Enter the quiz #4 for Jeff Rogers
89.20
Enter the name of Student #5
David Michael Brown
Enter the quiz #5 for David Michael Brown
95.80
============================================================
                  STUDENT QUIZZES
============================================================
STUDENT NAME                          QUIZZES
============================================================
James Lee Johnson                              85.20
Mary Beth Williams                              100.00
John Brown                             78.50
Jeff Rogers                             89.20
David Michael Brown                              95.80
============================================================
Total of the quizzes = 448.70
============================================================
QUIZ AVERAGE = 89.74%
============================================================
>>>
```

15. ☐ Remember, this is a ***basic python version***. This program can be expanded to apply a myriad of python **functions, formats, f' string other dynamic statements to manipulate the program to align with real world results and layouts as explained in Chapter 2 of the required Python textbook..**

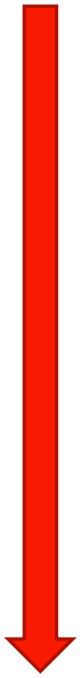
16. ☐ **Notice that the quiz values below are not vertically aligned** as a column by the decimal point in the Python output.



```
==========================================================
                  STUDENT QUIZZES
==========================================================
STUDENT NAME                          QUIZZES
==========================================================
James Lee Johnson                          85.20
Mary Beth Williams                          100.00
John Brown                            78.50
Jeff Rogers                            89.20
David Michael Brown                          95.80
==========================================================
Total of the quizzes = 448.70
==========================================================
QUIZ AVERAGE = 89.74%
==========================================================
>>>
```

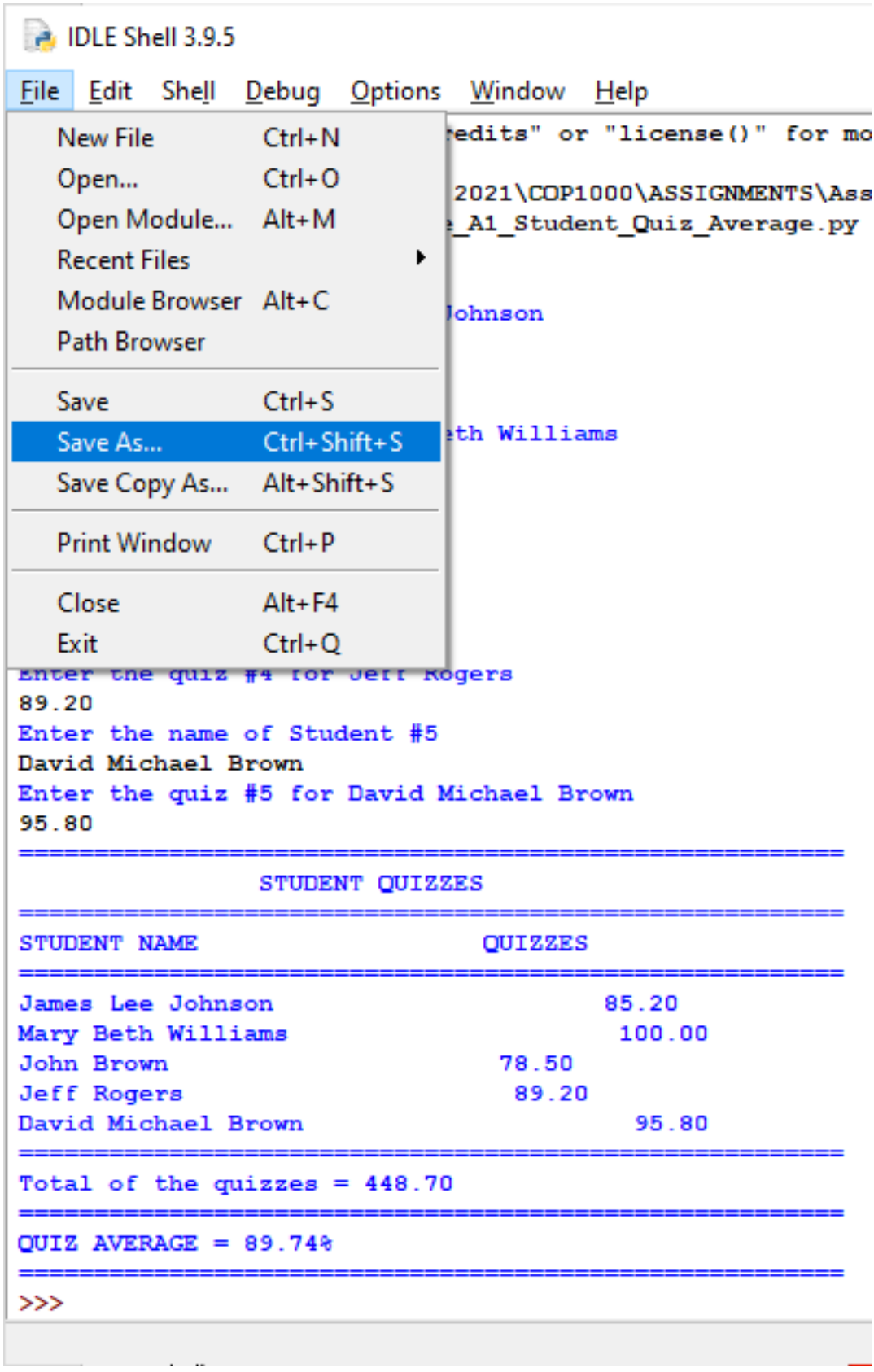
CREATING AN OUTPUT FILE FROM THE PYTHON PROGRAM TO STORE THE RESULTS:

17. ☐ Make sure the input from the user and output / results are displaying on the screen as shown below:



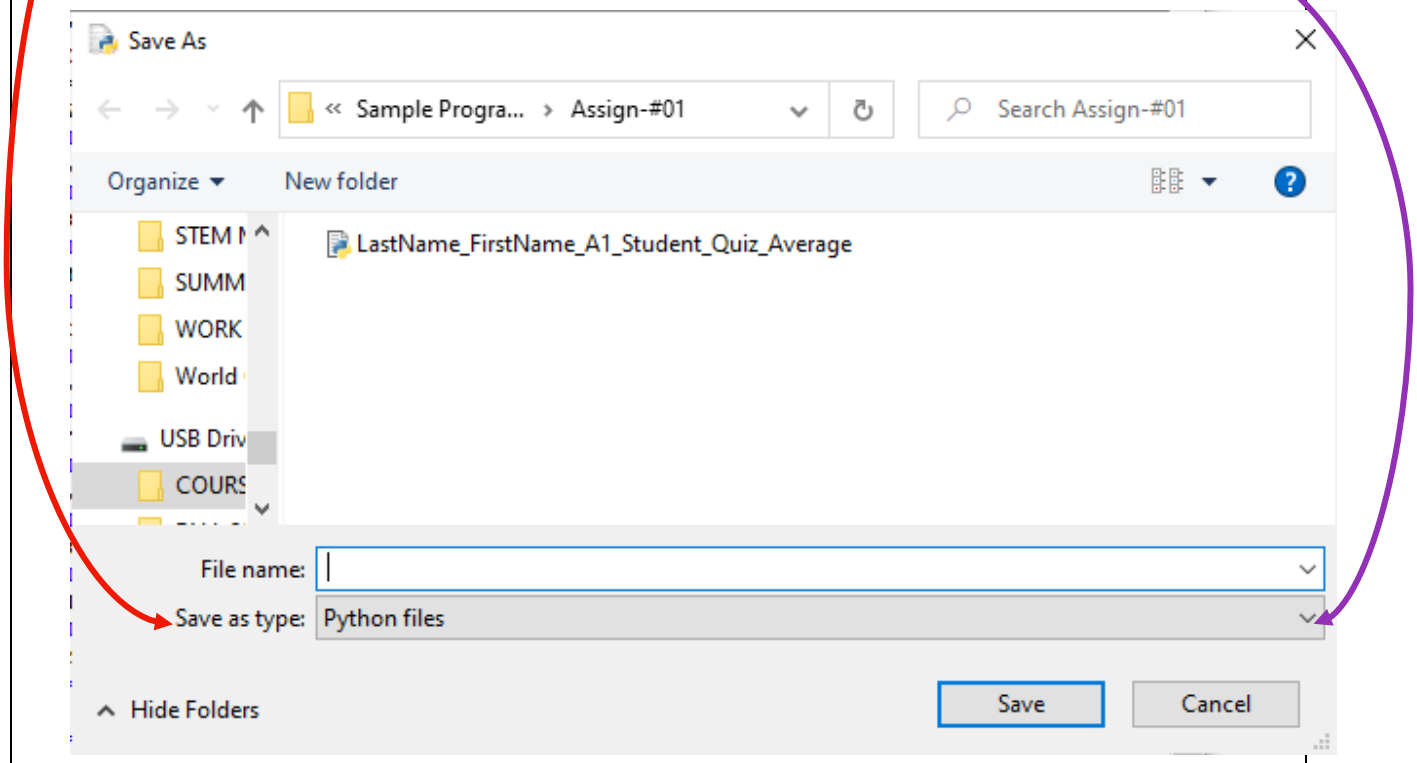
Continue Next Page

18. ☐ **Click the File menu**
19. ☐ **Click the Save As option**

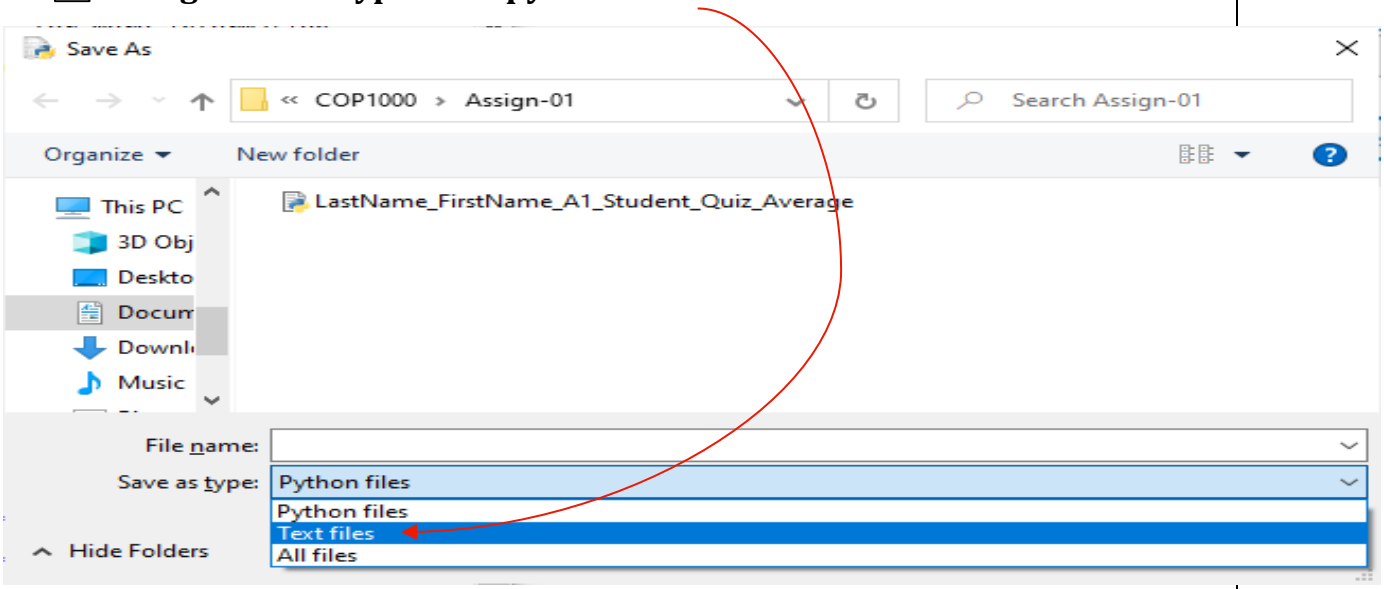


20. ☐ **Go to the bottom of the Save As Window Dialog Box below and locate the Save as Type Option**

Save As Window Dialog box, and locate the Save as Type Option -
Next, click the down arrow located on the far-right side of the Dialog box

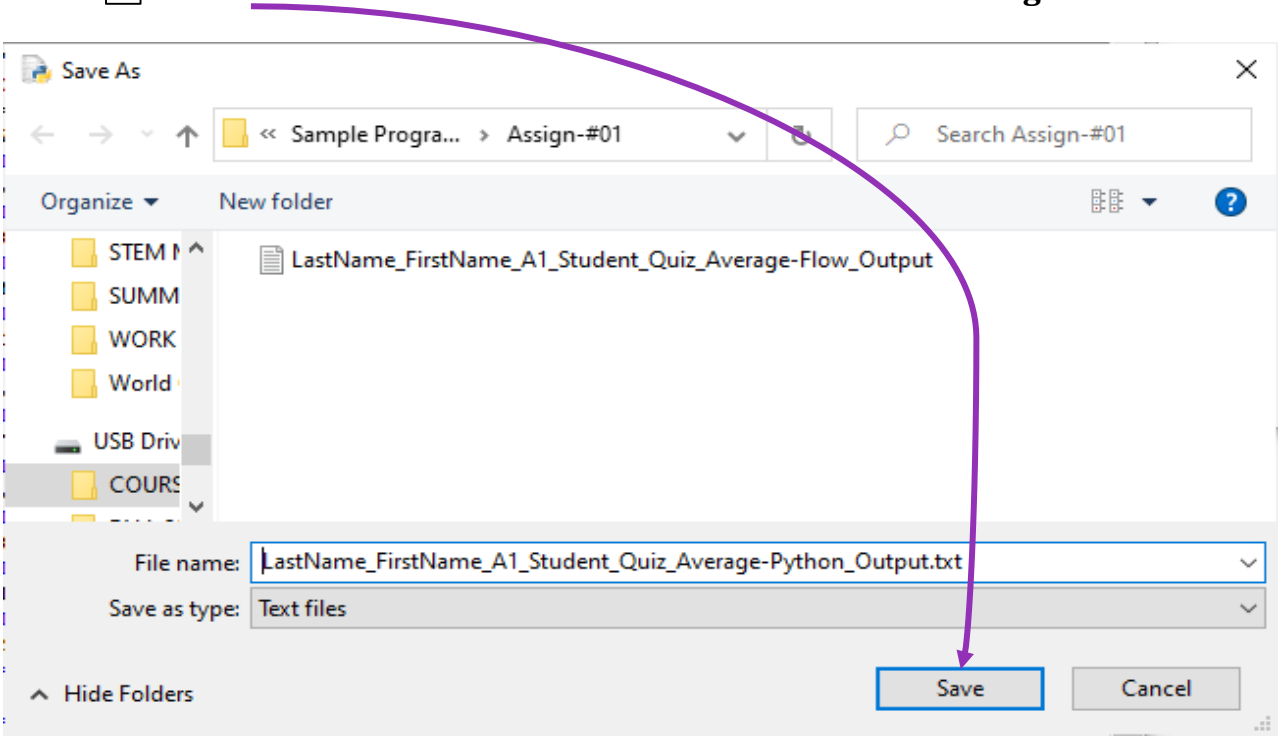


21. ☐ **Change the file type from python to text**

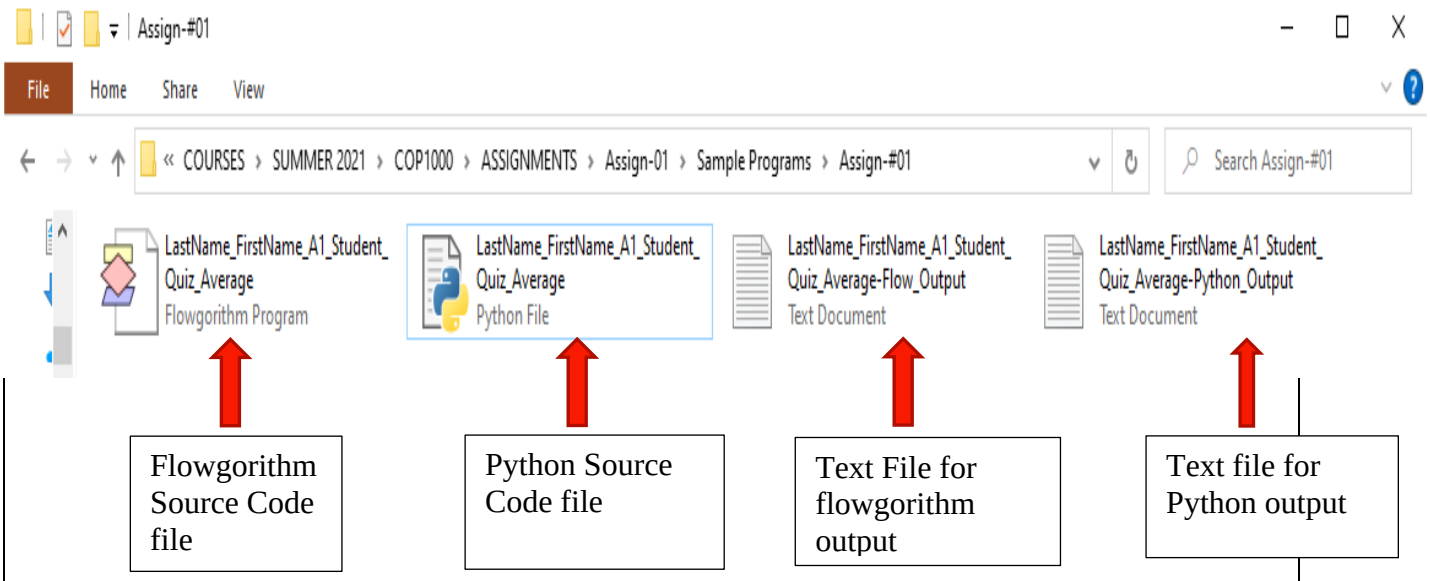


22. ☐ **Next, type the file name as:**
LastName_FirstName_A1_Student_Quiz_Average-Python_Output.txt

23. ☐ **Click the Save button at the bottom of the Save As Dialog box:**



24. ☐ **The file will be saved in the save folder where the other files are saved as shown below:**



Flowgorithm Source Code file

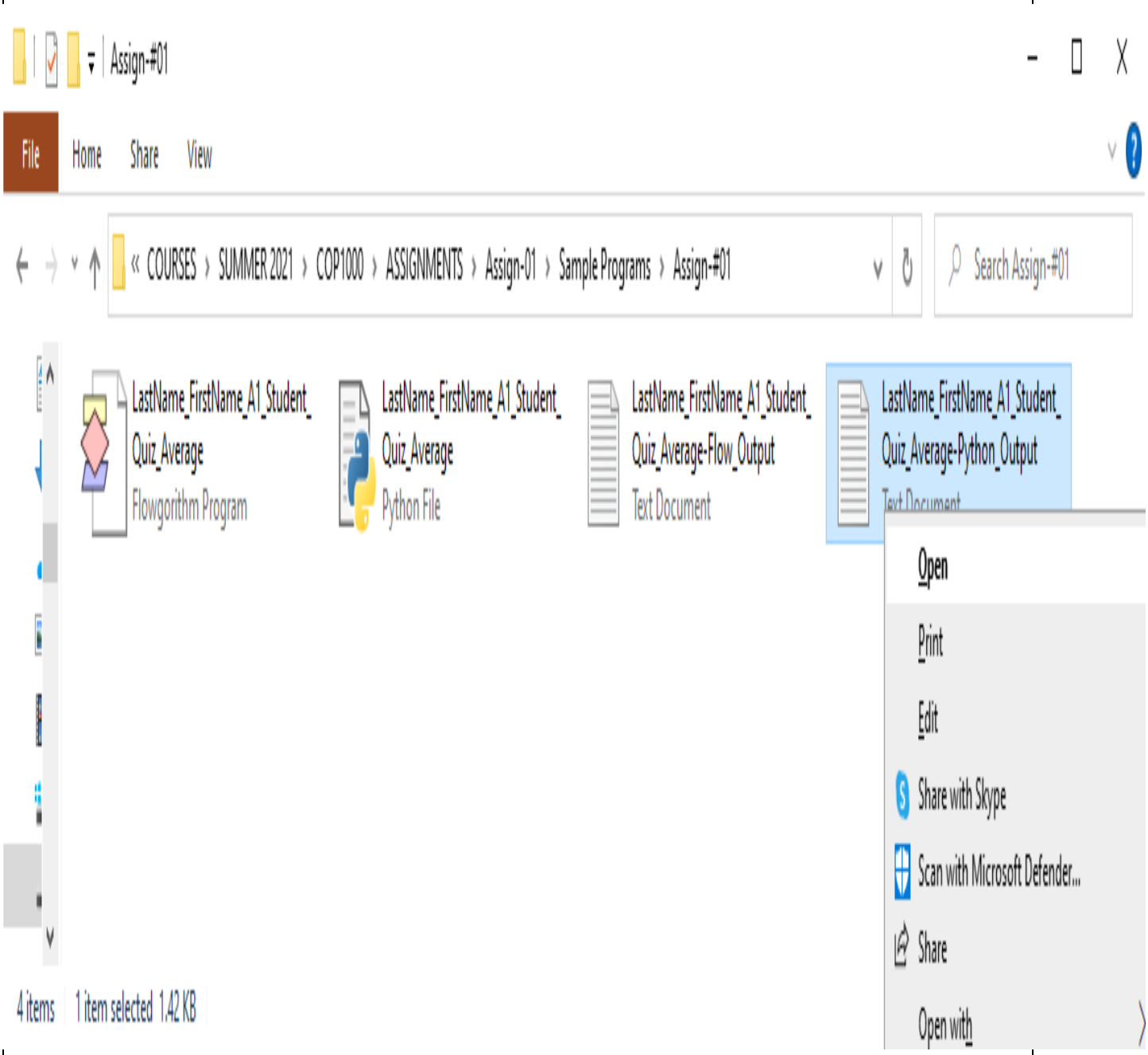
Python Source Code file

Text File for flowgorithm output

Text file for Python output

All four assignments are saved in the designated folder

25. ☐ **OPEN THE PYTHON OUTPUT TEXT FILE:**



PYTHON OUTPUT FILE

LastName_FirstName_A1_Student_Quiz_Average-Python_Output - Notepad

File Edit Format View Help

```
Python 3.9.5 (tags/v3.9.5:0a7dcbd, May  3 2021, 17:27:52) [MSC v.1928 64 bit (AMD6
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\COURSES\SUMMER 2021\COP1000\ASSIGNMENTS\Assign-01\Sample Programs\As
Enter the name of Student #1
James Lee Johnson
Enter quiz #1 for James Lee Johnson
85.20
Enter the name of Student #2
Mary Beth Williams
Enter the quiz #2 for Mary Beth Williams
100
Enter the name of Student #3
John Brown
Enter quiz #3 for John Brown
78.50
Enter the name of Student #4
Jeff Rogers
Enter the quiz #4 for Jeff Rogers
89.20
Enter the name of Student #5
David Michael Brown
Enter the quiz #5 for David Michael Brown
95.80
=========================================================
                STUDENT QUIZZES
=========================================================
STUDENT NAME                      QUIZZES
=========================================================
James Lee Johnson                          85.20
Mary Beth Williams                          100.00
John Brown                           78.50
Jeff Rogers                           89.20
David Michael Brown                          95.80
=========================================================
Total of the quizzes = 448.70
=========================================================
QUIZ AVERAGE = 89.74%
=========================================================
>>>
```

Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-8

26. ☐ NOTICE THAT THE IN THE QUIZZES COLUMN, the Quizzes ARE NOT ALIGNED VERTICALLY BY THE DECIMAL POINT under the Quizzes column [as previously mentioned]

The values under the <u>quizzes column</u> can be changed by applying either the:

- **format function with a specific format specifier,**
- **the f' String or short cut method for the format specifier or the**
- **String format Method (with positional formatting)**

27. ☐ Below is the output displayed using the built-in function toFixed from the flowgorithm conversion;

```
42 # REPORT HEADING AND COLUMN HEADINGS
43 print("=============================================================")
44 print("                  STUDENT QUIZZES")
45 print("=============================================================")
46 print("STUDENT NAME                          QUIZZES")
47 print("=============================================================")
48
49 # STUDENT NAMES AND QUIZ GRADES
50 print(stuName1 + "                            " + toFixed(quiz1,2))
51 print(stuName2 + "                            " + toFixed(quiz2,2))
52 print(stuName3 + "                            " + toFixed(quiz3,2))
53 print(stuName4 + "                            " + toFixed(quiz4,2))
54 print(stuName5 + "                            " + toFixed(quiz5,2))
55 print("=============================================================")
56
57 # Total / sum of Quizzes
58 print("Total of the quizzes = " + toFixed(total,2))
59 print("=============================================================")
60
61 # Quiz Average
62 print("QUIZ AVERAGE = " + toFixed(average,2) + "%")
63 print("=============================================================")
64
65 # END PROGRAM
```

28. ☐ METHOD #1; Use the format function and format specifiers to display the results at lines 50 – 54, 58, and 62.

29. ☐ The format function below will be used to format the student name and quiz
i.e.

print(format(stuName1, "25s") + " " + format(quiz1, "6.2f"))

format specifier "25s" means:

- **The format specifier means 25 positions are reserved for a person's name.**
  - **The "s" stands for string data type.**
  - **A string of up to 25 characters will be reserved for the person's name. If the person's name does not use up the 20 spaces they are padded with blank spaces after the last letter of a person's name. i. e. James Lee Johnson uses 17 characters which includes the blank space between the first, middle and last name. The program will then add 8**

blank spaces after the last letter of the name "Johnson" so that this name occupies all 25 characters.

"25s" (lower case letter s) means the program reserves 25 characters for the stuName1, 2, 3, 4, 5 with a "s" data type string.

Next, let's explain the format(quiz1, "6.2f") format with format specifier

"6.2f" means a number will occupy 6 positions or a width of 6 places. Included in the width of 6 places/positions are:

- **3 places to the left of the decimal point**
- **The actual decimal point (.)**
- **2 places to the left of the decimal point and the f which represents the float data time (real number)**

30. ☐ Let's apply the format function to lines 50 – 54, 58, and 62 in this practice. program:

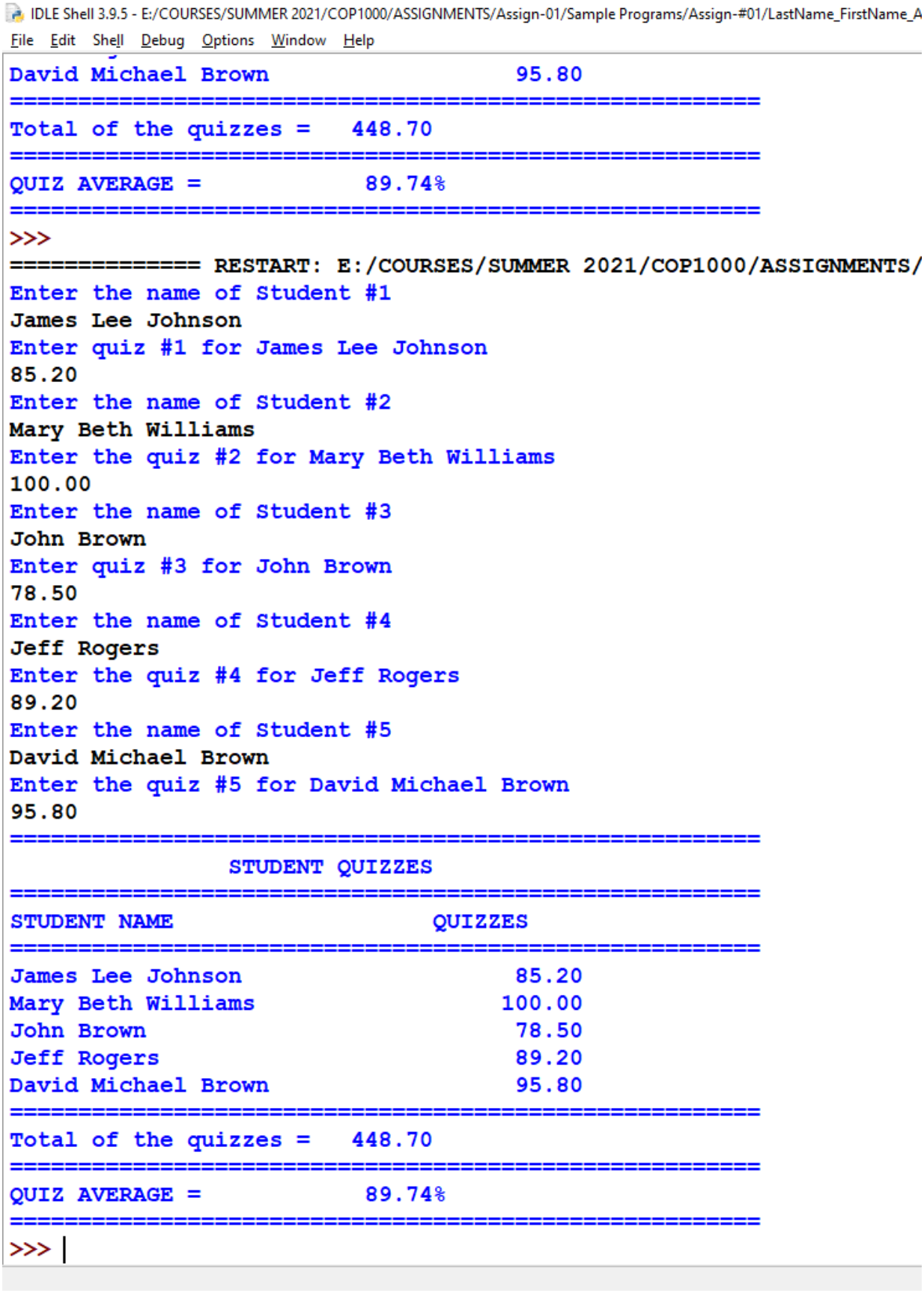
31. ☐ Resave this practice python program as:

LastName_FirstName_A1_Student_Quiz_Average_REVISED.py

32. ☐ Next change lines 50-54, 58, and 62 as shown below

```
41 # OUTPUT OPERATIONS
42 # REPORT HEADING AND COLUMN HEADINGS
43 print("=========================================================")
44 print("                  STUDENT QUIZZES")
45 print("=========================================================")
46 print("STUDENT NAME                        QUIZZES")
47 print("=========================================================")
48
49 # STUDENT NAMES AND QUIZ GRADES
50 print(format(stuName1, "25s") + "            " + format(quiz1, "6.2f"))
51 print(format(stuName2, "25s") + "            " + format(quiz2, "6.2f"))
52 print(format(stuName3, "25s") + "            " + format(quiz3, "6.2f"))
53 print(format(stuName4, "25s") + "            " + format(quiz4, "6.2f"))
54 print(format(stuName5, "25s") + "            " + format(quiz5, "6.2f"))
55 print("=========================================================")
56
57 # Total / sum of Quizzes
58 print(format("Total of the quizzes = ", "25s") + format(total, "6.2f"))
59 print("=========================================================")
60
61 # Quiz Average
62 print(format("QUIZ AVERAGE = ", "25s") + format(average, "6.2f") + "%")
63 print("=========================================================")
64
65 # END PROGRAM
66
```

OUTPUT FOR THE FORMAT CHANGES:



33. ☐ In the above output you will notice that the column headings are not centered or aligned correctly. Therefore, we will make some changes so that we may centered the column heading ‘STUDENT QUIZZES

- ☐ Replace the following **print statements at lines 43, 45, 47, 55, 59** and **63** with the following print statement

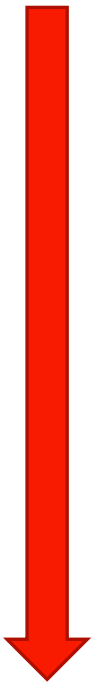
print("=" * 60) This means the = symbol will be repeated 60 times. The centering is based on 60 characters

34. ☐ Next, we will center the Column heading “STUDENT QUIZZES” by changing line #44 to the following:

```
print(format("STUDENT QUIZZES", "^60s"))
```

The ^ caret symbol means to Center

THE OUTPUT FOLLOWS:



```
File  Edit  Shell  Debug  Options  Window  Help
David Michael Brown                    95.80
============================================================
Total of the quizzes =   448.70
============================================================
QUIZ AVERAGE =            89.74%
============================================================
>>>
============== RESTART: E:/COURSES/SUMMER 2021/COP1000/ASSIGNMENTS/Ass
Enter the name of Student #1
James Lee Johnson
Enter quiz #1 for James Lee Johnson
85.20
Enter the name of Student #2
Mary Beth Williams
Enter the quiz #2 for Mary Beth Williams
100.00
Enter the name of Student #3
John Brown
Enter quiz #3 for John Brown
78.50
Enter the name of Student #4
Jeff Rogers
Enter the quiz #4 for Jeff Rogers
89.20
Enter the name of Student #5
David Michael Brown
Enter the quiz #5 for David Michael Brown
95.80
============================================================
                      STUDENT QUIZZES
============================================================
STUDENT NAME                      QUIZZES
============================================================
James Lee Johnson                   85.20
Mary Beth Williams                 100.00
John Brown                          78.50
Jeff Rogers                         89.20
David Michael Brown                 95.80
============================================================
Total of the quizzes =   448.70
============================================================
QUIZ AVERAGE =            89.74%
============================================================
>>>
```

35. ☐ Notice, the “QUIZZES” column is not aligned under the quiz values. Therefore, five (5) blank spaces need to be placed to the left of the QUIZZES column in line 46:

```
print("STUDENT NAME                    QUIZZES")
```

After adding the 5 blank spaces the results display as follows:

```
File  Edit  Shell  Debug  Options  Window  Help
David Michael Brown                    95.80
============================================================
Total of the quizzes =   448.70
============================================================
QUIZ AVERAGE =             89.74%
============================================================
>>>
============== RESTART: E:/COURSES/SUMMER 2021/COP1000/ASSIGNMENTS/
Enter the name of Student #1
James Lee Johnson
Enter quiz #1 for James Lee Johnson
85.20
Enter the name of Student #2
Mary Beth Williams
Enter the quiz #2 for Mary Beth Williams
100.00
Enter the name of Student #3
John Brown
Enter quiz #3 for John Brown
78.50
Enter the name of Student #4
Jeff Rogers
Enter the quiz #4 for Jeff Rogers
89.20
Enter the name of Student #5
David Michael Brown
Enter the quiz #5 for David Michael Brown
95.80
============================================================
                      STUDENT QUIZZES
============================================================
STUDENT NAME                          QUIZZES
============================================================
James Lee Johnson                      85.20
Mary Beth Williams                    100.00
John Brown                             78.50
Jeff Rogers                            89.20
David Michael Brown                    95.80
============================================================
Total of the quizzes =   448.70
============================================================
QUIZ AVERAGE =             89.74%
============================================================
>>>
```

36. ☐ Resave the final version as:

37. LastName_FirstName_A1_Student_Quiz_Average_REVISED.py

38. ☐ Resave the output and rename as LastName_FirstName_A1_Student_Quiz_Average-Python_Output_REVISED.txt

Submit the following practice exercises in the drop box for Assignment #01 [3 – 5 exercises] (Worth 5 points)

LastName_FirstName_A1_Student_Quiz_Average.fprg
LastName_FirstName_A1_Student_Quiz_Average-Flow_Output.txt
or

LastName_FirstName_A1_Student_Quiz_Average.vsdx (Visio)

And
LastName_FirstName_A1_Student_Quiz_Average-Python_REVISED.py
LastName_FirstName_A1_Student_Quiz_Average-Python_Output_REVISED.txt