Programming Assignment 2-1

1. Input/Output Description

Input:

Program asks the user for the number of males and number of females registered in a class.

Ex: (2 integer input)
Male: 40
Female: 60

Output:

Program should then display the total number of students in class, number of male and females, and the percentage of males and females in the class while being properly formatted to copy the example.

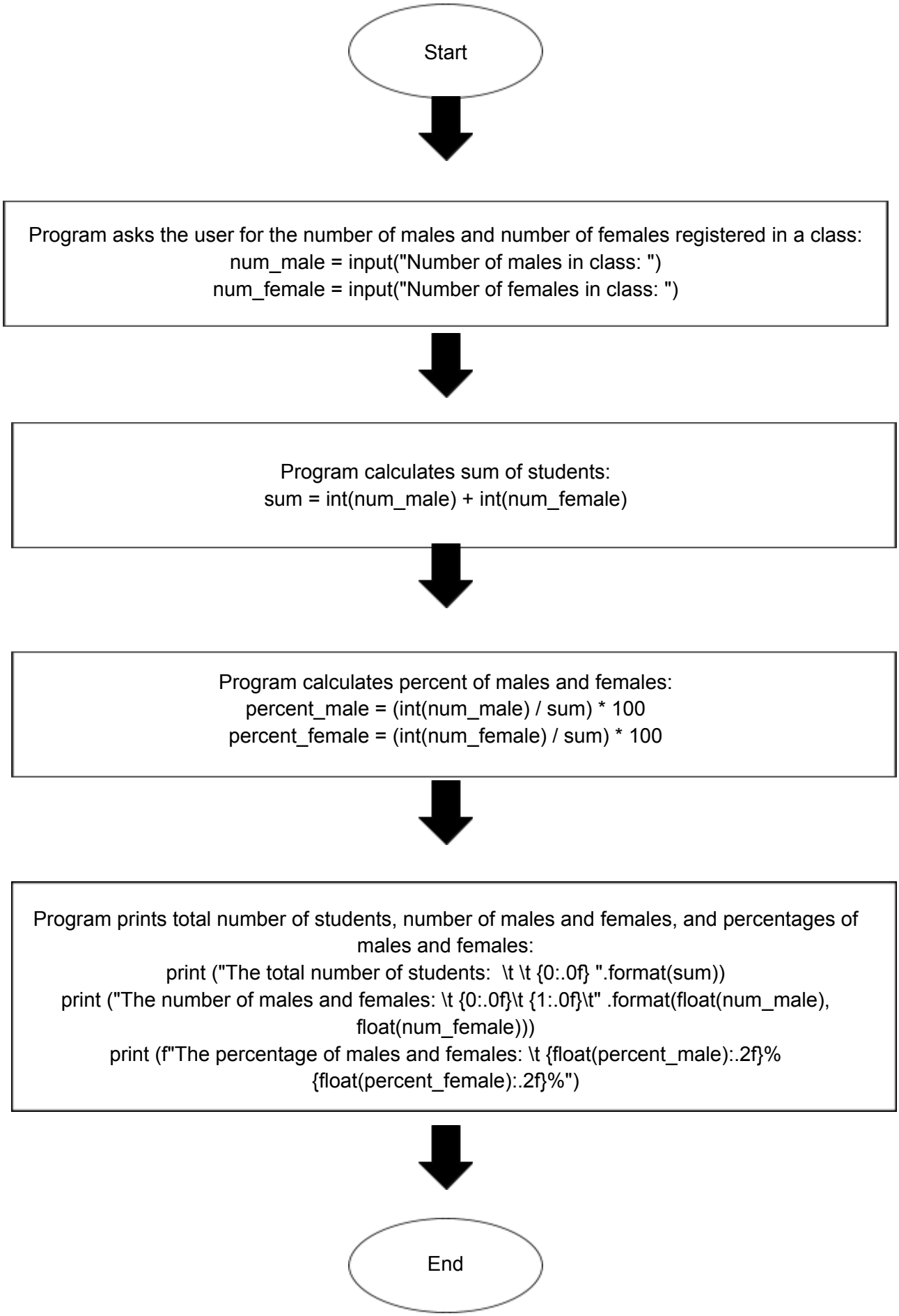
Ex: (indented properly and percentages with two floating points)

The total number of students:	100
The number of males and females:	40 60
The percentage of males and females:	40.00%60.00%

2. Explanation of all variables

num_male = user input number of males (string)
num_female = user input number of females (string)
sum = number of males plus number of females (converted to integer here)
percent_male = number of males divided by sum all multiplied by 100 (integer)
percent_female = number of females divided by sum all multiplied by 100 (integer)

3. Flow Chart


Start
Program asks the user for the number of males and number of females registered in a class:
num_male = input("Number of males in class: ")
num_female = input("Number of females in class: ")
Program calculates sum of students:
sum = int(num_male) + int(num_female)
Program calculates percent of males and females:
percent_male = (int(num_male) / sum) * 100
percent_female = (int(num_female) / sum) * 100
Program prints total number of students, number of males and females, and percentages of males and females:
print ("The total number of students: \t \t {0:.0f} ".format(sum))
print ("The number of males and females: \t {0:.0f}\t {1:.0f}\t" .format(float(num_male), float(num_female)))
print (f"The percentage of males and females: \t {float(percent_male):.2f}% {float(percent_female):.2f}%")
End

4. Errors and Lessons Learned

Problem: I would get errors in the beginning when I would try to do mathematics in variables such as “sum” because my user input was considered a string.
Solution: Convert the input variables to integers by connecting “int” to the beginning of the variable.

Problem: String format method for indenting.
Solution: Was able to use experience and notes from lab 2-3 to use \t to properly indent.

Problem: String format for concatenating a “%” sign to end of float.
Solution: Use f string instead as it was seemingly way more straightforward to concatenate the “%” sign directly to the float with no spaces.

This assignment taught great foundation to user inputs, the conversion from str => int => float, and various ways of formatting print outs.