

# Software Dev

*by* Tony Witter

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Tony Witter

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Software Development

ACCB4017

### Exercise 1:

I've used different variables for each input. String for plain text, integer for whole numbers and float for numbers with decimals. I also added a if and elif commands to have the user reinput their answers if the height is too high or too small.

I've copy and paste the code as well as a screenshot.

```
print("Please enter your name: ")
userName = str(input())

print("Please enter your age: ")
userAge = int(input())

print("Please enter your height in metres: ")
userHeight = float(input())

if userHeight > 2.7:
    print("Unless you're the tallest person alive, please try again.")
    userHeight = float(input())
elif userHeight < 1:
    print("Unless you're the smallest person alive, try again.")
    userHeight = float(input())

print("Thanks, you entered: ", userName, "-", userAge, "years old", "-",
userHeight, "m tall")
```

The image shows a screenshot of a Python IDE. The top pane displays a Python script named `main.py` with the following code:

```
1 print("Please enter your name: ")
2 userName = str(input())
3
4 print("Please enter your age: ")
5 userAge = int(input())
6
7 print("Please enter your height in metres: ")
8 userHeight = float(input())
9
10 if userHeight > 2.7:
11     print("Unless you're the tallest person alive, please try again.")
12     userHeight = float(input())
13 elif userHeight < 1:
14     print("Unless you're the smallest person alive, try again.")
15     userHeight = float(input())
16
17 print("Thanks, you entered: ", userName, "-", userAge, "years old", "-", userHeight, "m tall")
```

The bottom pane shows the output of the script execution. The prompt asks for a name, age, and height. The user enters "tony", "36", and "1.5". The program then prints the formatted string: "Thanks, you entered: tony - 36 years old - 1.5 m tall". The process finished with exit code 0.

Run: test2 × Ex 4 × Ex 3 × Ex 2 × main ×

D:\Uni\Software\pythonProject\Assignment\venv\Scripts\python.exe D:\Uni\Software\pythonProject\Assignment\ma  
Please enter your name:  
tony  
Please enter your age:  
36  
Please enter your height in metres: |  
1.5  
Unless you're the tallest person alive, please try again.  
1.5  
Thanks, you entered: tony - 36 years old - 1.5 m tall  
  
Process finished with exit code 0

Version Control Run TODO Problems Debug Python Packages Python Console Terminal Event Log  
6:37 CRLF UTF-8 4 spaces Python 3.10 (Assignment)

## Exercise 2:

For exercise 2 I included while loop to go back if the user inputs a 0 or less. I tried to add a command to ask for an input again if the size of a shape was bigger than the circle, but I couldn't get it to work. I also rounded off the area number by 2 decimal places.

```
print("Please enter radius of circle: ")
userCircle = float(input())
while (userCircle <=0):
    print("Circle size must be above 0")
    userCircle = float(input())
total1 = 3.142 * userCircle * userCircle

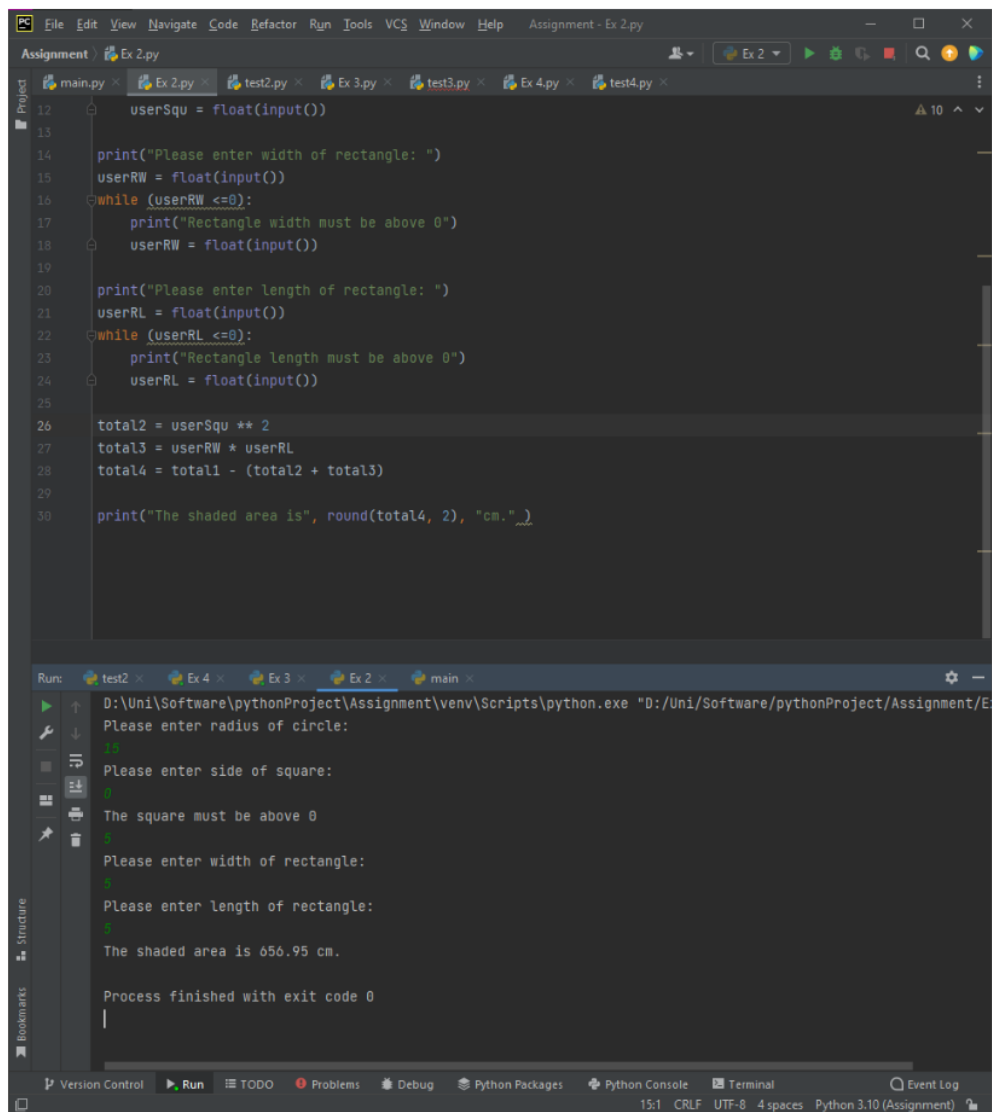
print("Please enter side of square: ")
userSqu = float(input())
while (userSqu <=0):
    print("The square must be above 0")
    userSqu = float(input())

print("Please enter width of rectangle: ")
userRW = float(input())
while (userRW <=0):
    print("Rectangle width must be above 0")
    userRW = float(input())

print("Please enter length of rectangle: ")
userRL = float(input())
while (userRL <=0):
    print("Rectangle length must be above 0")
    userRL = float(input())

total2 = userSqu ** 2
total3 = userRW * userRL
total4 = total1 - (total2 + total3)

print("The shaded area is", round(total4, 2), "cm." )
```



```
Assignment - Ex 2.py
main.py Ex 2.py test2.py Ex 3.py test3.py Ex 4.py test4.py
12 userSqu = float(input())
13
14 print("Please enter width of rectangle: ")
15 userRW = float(input())
16 while (userRW <= 0):
17     print("Rectangle width must be above 0")
18     userRW = float(input())
19
20 print("Please enter length of rectangle: ")
21 userRL = float(input())
22 while (userRL <= 0):
23     print("Rectangle length must be above 0")
24     userRL = float(input())
25
26 total2 = userSqu ** 2
27 total3 = userRW * userRL
28 total4 = total1 - (total2 + total3)
29
30 print("The shaded area is", round(total4, 2), "cm." ..)
```

```
Run: test2 Ex 4 Ex 3 Ex 2 main
D:\Uni\Software\pythonProject\Assignment\venv\Scripts\python.exe "D:/Uni/Software/pythonProject/Assignment/E
Please enter radius of circle:
13
Please enter side of square:
9
The square must be above 0
9
Please enter width of rectangle:
9
Please enter length of rectangle:
9
The shaded area is 656.95 cm.

Process finished with exit code 0
```

I tried doing these two different ways. I also tried using a def command but I had an issue of it printing each input twice and I couldn't figure out how to fix it. I also used while loops on this one to bring it back if the user entered a shape bigger than then the circle.

```
def circle():
    print("Enter required radius: ")
    radius = float(input())
    result = radius * radius * 3.142
    return result

total1 = circle()
```

```
def square():
    print("Please enter side of square: ")
    side = float(input())
    result = side ** 2
    return result
while square() > total1:
    print("square should be smaller than the circle.")

total2 = square()

def rectangle():
    print("Please enter width of rectangle: ")
    width = float(input())
    print("Please enter length of rectangle: ")
    length = float(input())
    result = width * length
    return result
while rectangle() > total1:
    print("Rectangle should be smaller than circle.")

total3 = rectangle()

area = total1 - (total2 + total3)
print("The shaded area is", area)
```

The image shows a PyCharm IDE window titled "Assignment - test2.py". The editor displays a Python script with the following code:

```
14 while square() > total1:
15     print("square should be smaller than the circle.")
16
17 total2 = square()
18
19 def rectangle():
20     print("Please enter width of rectangle: ")
21     width = float(input())
22     print("Please enter length of rectangle: ")
23     length = float(input())
24     result = width * length
25     return result
26
27 while rectangle() > total1:
28     print("Rectangle should be smaller than circle.")
29
30 total3 = rectangle()
31
32 area = total1 - (total2 + total3)
33 print("The shaded area is", round(area, 2))
```

The Run window at the bottom shows the execution output:

```
Please enter side of square:
5
Please enter side of square:
5
Please enter width of rectangle:
5
Please enter length of rectangle:
5
Please enter width of rectangle:
5
Please enter length of rectangle:
5
The shaded area is 656.95
Process finished with exit code 0
```

The status bar at the bottom indicates the file encoding is UTF-8, line endings are CRLF, and the Python version is 3.10 (Assignment).

### Exercise 3:

For exercise 3 I created a list with the days of the week and called each one for the user to input the millage.

I tried to using a for loop as shown below [1] but I couldn't seem to figure it out and get it working.

```
day = ["Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday",
"Sunday"]

print("Enter miles for", (day[0]))
day0 = float(input())
print("Enter miles for", (day[1]))
day1 = float(input())
print("Enter miles for", (day[2]))
day2 = float(input())
print("Enter miles for", (day[3]))
day3 = float(input())
print("Enter miles for", (day[4]))
day4 = float(input())
print("Enter miles for", (day[5]))
day5 = float(input())
print("Enter miles for", (day[6]))
day6 = float(input())

total1 = day0 + day1 + day2 + day3 + day4 + day5 + day6
total2 = total1 * (1.35 / 11.2)

print("Total mileage was:", total1)
print("Cost of petrol: ", round(total2, 2))
```

```
day = ["Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday",
"Sunday"]

for i in range(len(day)):
    float(input("Enter number for"))
```

[1]

```
1 day = ["Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday"]
2
3 print("Enter miles for", (day[0]))
4 day0 = float(input())
5 print("Enter miles for", (day[1]))
6 day1 = float(input())
7 print("Enter miles for", (day[2]))
8 day2 = float(input())
9 print("Enter miles for", (day[3]))
10 day3 = float(input())
11 print("Enter miles for", (day[4]))
12 day4 = float(input())
13 print("Enter miles for", (day[5]))
14 day5 = float(input())
15 print("Enter miles for", (day[6]))
16 day6 = float(input())
17
18
19 total1 = day0 + day1 + day2 + day3 + day4 + day5 + day6
20 total2 = total1 * (1.35 / 11.2)
21
22 print("Total mileage was:", total1)
23 print("Cost of petrol: ", round(total2, 2))
```

Run: test2 × Ex 4 × Ex 3 × tes × Ex 4 × test4 ×

```
07
Enter miles for Wednesday
120.2
Enter miles for Thursday
120.4
Enter miles for Friday
118.3
Enter miles for Saturday
38
Enter miles for Sunday
23
Total mileage was: 618.3
Cost of petrol: 74.53

Process finished with exit code 0
```

Version Control Run TODO Problems Debug Python Packages Python Console Terminal Event Log  
20:1 CRLF UTF-8 4 spaces Python 3.10 (Assignment)

#### Exercise 4:

I didn't complete exercise 4 as I couldn't figure it out.

FINAL GRADE

25 / 100

GENERAL COMMENTS

### Instructor

#### PART A

Part A doesn't seem to have been answered at all?

Variables - 0/5

If/Else - 0/5

Loops - 0/5

#### PART B

#### Exercise 1

Logical Stages-Testing - These are not really logical stages - your text reads more like a narrative of the code produced. The logical stages should show logic only and not refer to code. Please see accompanying "How to lay out your assignment Part B" document. Testing is OK I suppose, but you need to state what you're testing and whether the test was successful or not 2.5/5

Coding-Annotation - A working program, with limited validation. The if needs to be a while really, and you should also ensure that the user does not enter out of range age etc. (ie reasonable range of human life span and no minus numbers 5.5/10

## Exercise 2

Logical Stages-Testing - Same comments as above 2 /5

Coding-Annotation - Working program produced, some validation of input range shape dimensions. You also need to consider the relative sizes of square, rectangle and circle - if the square/rectangle ends up bigger than the circle, the program will not work correctly. 7/10

## Exercise 3

Logical Stages-Testing - Same comments as above 3/10

Coding-Annotation - It is a bit mystifying that you have used a loop for days but not for mileage. This have meant that you couldn't use a loop properly for input 5 /10

## Exercise 4

Not attempted

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General comment: All assignments should really have a short Introduction and a conclusion - just to set the scene on what the assignment is about and in the conclusion, to discuss how things went and what you would do differently next time. There are no marks assigned for that in this particular assignment, but it is good academic practice.

Also, you should definitely not use "I" in an academic assignment. This is what we call the active voice, you need to use the passive voice. For example, don't

write "I've copied and pasted the code". Write "The code has been copied and pasted also"

This use of the passive voice is crucial and you need to write all your assignments in this way going forward into Levels 5 and 6.

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**Assignment overall: 25%**

**Test mark: 63%**

**OVERALL MARK FOR MODULE: 36%**

Unfortunately there were too many missing sections to achieve a pass mark. The exam board may offer a condonement or a re-work when they meet in June - wait for results to be released on student portal in mid-June.

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PAGE 1

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PAGE 2

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PAGE 3

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PAGE 4

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PAGE 5

---

PAGE 6

---

PAGE 7

---

PAGE 8

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PAGE 9

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