

Lecture 2 Programming Solutions

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[1]: # Murat M. Tunc
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      # Computer Skills
      # Lecture 2 - Solutions to Programming Exercises
      # November 2021
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[2]: # In-class Exercise 1

      # Step 1: Read in radius from the user

      radius = input("Please input the radius of a circle and press Enter: ")
      radius = float(radius)

      # Step 2: Compute area

      if radius > 0:
          area = radius * radius * 3.14159

          # Step 3: Display the area

          print("The area of a circle with the radius", radius, "is", area)

      else:
          print("Negative")
```

Please input the radius of a circle and press Enter: 7.5

The area of a circle with the radius 7.5 is 176.7144375

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[3]: # In-class Exercise 2

      # Step 1: Read in Celsius degree from the user

      celsius = input("Please input the Celsius degree and press Enter: ")
      celsius = float(celsius)

      # Step 2: Convert Celsius to Fahrenheit degree

      fahrenheit = (9/5) * celsius + 32

      # Step 3: Display the result
```

```
print("Celsius degree of", celsius, "is equal to", fahrenheit, "Fahrenheit_
→degree")
```

Please input the Celsius degree and press Enter: 35

Celsius degree of 35.0 is equal to 95.0 Fahrenheit degree

[4]: *# In-class Exercise 3*

Step 1: Read in the three numbers from the user

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number1 = float(input("Please input the first number and press Enter:"))
number2 = float(input("Please input the second number and press Enter:"))
number3 = float(input("Please input the third number and press Enter:"))
```

Step 2: Calculate their average

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average = (number1 + number2 + number3) / 3
```

Step 3: Display the result

```
print("The average of the three numbers is", average)
```

Please input the first number and press Enter:6

Please input the second number and press Enter:14

Please input the third number and press Enter:63

The average of the three numbers is 27.666666666666668

[5]: *# In-class exercise 4*

Step 1: Read in the time in seconds from the user

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timeInSeconds = float(input ("Please input the time (in seconds) and press Enter:
→ "))
```

Step 2: Convert the time to minutes and seconds

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minutes = int ( timeInSeconds // 60)
seconds = timeInSeconds % 60
```

Step 3: Display the result

```
print(timeInSeconds , "seconds equals to", minutes, "minutes and", seconds,
→ "seconds")
```

Please input the time (in seconds) and press Enter: 200.5

200.5 seconds equals to 3 minutes and 20.5 seconds

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[6]: # Practice exercise 1

# Step 1: Read in the two-digit number from the user

twoDigitNumber = int(input("Please input a two-digit number and press Enter:"))

# Step 2: Swap its digits and create a new integer

firstNumberTemporary = twoDigitNumber // 10
secondNumberTemporary = twoDigitNumber % 10

numberAfterSwap = secondNumberTemporary * 10 + firstNumberTemporary

# Step 3: Display the result

print("After the swap, the new number is", numberAfterSwap)
```

Please input a two-digit number and press Enter:93
After the swap, the new number is 39

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[7]: # Practice Exercise 2

# Step 1: Read in radius and length from the user

radius = float(input("Please input the radius of a cylinder and press Enter:"))
length = float(input("Please input the length of a cylinder and press Enter:"))

# Step 2: Compute volume

area = radius * radius * 3.14159
volume = area * length

# Step 3: Display the area

print("The volume of a cylinder with the radius", radius, ", and length",
      length, "is", volume)
```

Please input the radius of a cylinder and press Enter:7.5
Please input the length of a cylinder and press Enter:12
The volume of a cylinder with the radius 7.5 , and length 12.0 is 2120.57325

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[8]: # Practice Exercise 3

# Step 1: Read in x and y

x = float(input("Please input x and press Enter: "))
y = float(input("Please input y and press Enter: "))
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# Step 2: Compute the answer

result = pow(y, x-7) + (x+y)/4 - (2*(x-y)+3)/5 + y/(3*x-10)

# Step 3: Display the result

print("The result is", result)
```

Please input x and press Enter: 10

Please input y and press Enter: 5

The result is 126.4