

Lecture 2 Programming Solutions

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[1]: # Murat M. Tunc
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      # Computer Skills
      # Lecture 2 - Solutions to Programming Exercises
      # September 2023
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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
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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

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[4]: # In-class Exercise 3  
  
# Step 1: Read in the three numbers from the user  
  
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  
  
average = (number1 + number2 + number3) / 3  
  
# Step 3: Display the result  
  
print("The average of the three numbers is", average)
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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

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[5]: # In-class exercise 4  
  
# Step 1: Read in the time in seconds from the user  
  
timeInSeconds = float(input ("Please input the time (in seconds) and press_↵  
↪Enter: "))  
  
# Step 2: Convert the time to minutes and seconds  
  
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