Lecture 2 Programming Solutions

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# Computer Skills
# Lecture 2 - Solutions to Programming Exercises
# November 2022
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[2]:
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# 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")
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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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# 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")
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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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# 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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# 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")
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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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# 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)
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Please input a two-digit number and press Enter:93
After the swap, the new number is 39
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# 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)
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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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# 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)
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Please input x and press Enter: 10
Please input y and press Enter: 5
The result is 126.4
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