Week 4

December 14, 2024

1 Nikhilesh Maharjan || Week 4 || Programs

[3]:
```
'''1. Functions are often used to validate input. Write a function that accepts␣
 ↪a single
 integer as a parameter and returns True if the integer is in the range 0 to 100
 (inclusive), or False otherwise. Write a short program to test the function.'''

user_input=int(input("Enter an interger: "))

def My_integer(number):
    validate= 0<=number<=100
    return validate

print(f"The number {user_input} is {My_integer(user_input)} for being in the␣
 ↪range 0 to 100")
```

```
Enter an interger:  102
```

```
The number 102 is False for being in the range 0 to 100
```

[6]:
```
'''2. Write a function that has a single string as its parameter, and returns␣
 ↪the number of
 uppercase letters, and the number of lowercase letters in the string. Test the
 function with a short program.'''

def check_case(a):
    uppercase=0
    lowercase=0
    for i in a:
        if i.isupper():
            uppercase= uppercase+1
        if i.islower():
            lowercase=lowercase+1
    return uppercase,lowercase
StringName=input("Write me a string:")
print(check_case(StringName))
```

```
Write me a string: UhdaSA
```

```
(3, 3)
```

[12]:
```
'''3.  Modify your "greetings" program so that the first letter of the name␣
 ↪entered is
 always in uppercase with the rest in lowercase. This should happen even if the␣
 ↪user
 entered their name differently. So if the user entered arthur, ARTHUR, or even
 arTHur the name should be displayed as Arthur.'''

def Name_Corrector():
   Guest_name=input("Please enter your name: ")
   Corrected=Guest_name[0].upper() + Guest_name[1:].lower()
   print(Corrected)

Name_Corrector()
```

```
Please enter your name:  NIkhILesH

Nikhilesh
```

[22]:
```
'''4. When processing data it is often useful to remove the last character from␣
 ↪some
 input (it is often a newline). Write and test a function that takes a string␣
 ↪parameter
 and returns it with the last character removed. (If the string contains one or␣
 ↪fewer
 characters, return it unchanged.)'''

def Remove_LastCharacter(word):
    if len(word)>1:
        return word[:-1]
    else:
        return word

User_String=input("Please enter a string: ")
Removed=Remove_LastCharacter(User_String)
print(Removed)
```

```
Please enter a string:  Nikhil

Nikhi
```

[29]:
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'''5.  Write and test a function that converts a temperature measured in degrees
 centigrade into the equivalent in fahrenheit, and another that does the reverse
 conversion. Test both functions. (Google will find you the formulae).'''

def Centigrade_to_Fahren(Temp):
    fahrenheit = (Temp * 9/5) + 32
```

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    return fahrenheit

def Fahren_to_Centi(Temp):
    centigrade = (Temp - 32) * 5/9
    return centigrade

Celcius=float(input("Enter the temperature in centigrade:"))
Fahrenheit_temp= Centigrade_to_Fahren(Celcius)

Fahrenheit=float(input("Enter the temperature in fahrenheit:"))
Celcius_temp= Fahren_to_Centi(Fahrenheit)

print(f"The {Celcius}C converts to {Fahrenheit_temp}F")
print("||||||||||||||||||||||||||||||")
print(f"The {Fahrenheit}F converts to {Celcius_temp:.2f}C")
```

```
Enter the temperature in centigrade: 36
Enter the temperature in fahrenheit: 98

The 36.0C converts to 96.8F
||||||||||||||||||||||||||||||
The 98.0F converts to 36.67C
```

[38]:
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'''6. Write a program that takes a centigrade temperature and displays the␣
 ↪equivalent in
 fahrenheit. The input should be a number followed by a letter C. The output␣
 ↪should
 be in the same format.'''

def centigrade_to_fahrenheit(temp):
    fahrenheit = (temp * 9/5) + 32
    return fahrenheit

Temperature=input("Enter the temperature following with letter C at last (eg.
 ↪36C):")
if (Temperature[-1].upper() !='C'):
    print("Please enter C after the number!!")
else:
    Change_datatype=float(Temperature[:-1])
    Fahrenheit=centigrade_to_fahrenheit(Change_datatype)
    print(f"The {Temperature} is equivalent to {Fahrenheit:.2f}F")
```

```
Enter the temperature following with letter C at last (eg.36C): 36c

The 36c is equivalent to 96.80F
```

[41]:
```
'''7. Write a program that reads 6 temperatures (in the same format as before),␣
 ↪and
```

```
 displays the maximum, minimum, and mean of the values.
 Hint: You should know there are built-in functions for max and min. If you␣
 ↪hunt, you
 might also find one for the mean.'''


def centigrade_to_fahrenheit(temp):
    fahrenheit = (temp * 9/5) + 32
    return fahrenheit

store_temperatures = []

for i in range(6):
    Temperature = input(f"Enter temperature (eg.36C): ")

    if Temperature[-1].upper() != 'C':
        print("Please enter C after the number!!!")
    else:
        change_datatype = float(Temperature[:-1])
        fahrenheit_value = centigrade_to_fahrenheit(change_datatype)
        store_temperatures.append(fahrenheit_value)


max_temp = max(store_temperatures)
min_temp = min(store_temperatures)
mean_temp = sum(store_temperatures) / len(store_temperatures)

print(f"Maximum temperature: {max_temp:.2f}F")
print(f"Minimum temperature: {min_temp:.2f}F")
print(f"Mean temperature: {mean_temp:.2f}F")
```

```
Enter temperature (eg.36C):  37c
Enter temperature (eg.36C):  35c
Enter temperature (eg.36C):  40c
Enter temperature (eg.36C):  32c
Enter temperature (eg.36C):  38c
Enter temperature (eg.36C):  39c

Maximum temperature: 104.00F
Minimum temperature: 89.60F
Mean temperature: 98.30F
```

[43]:
```
'''Modify the previous program so that it can process any number of values. The␣
 ↪input
 terminates when the user just pressed "Enter" at the prompt rather than␣
 ↪entering a
 value.'''
```

```python
def centigrade_to_fahrenheit(temp):
    fahrenheit = (temp * 9/5) + 32
    return fahrenheit

store_temperatures = []

while True:
    Temperature = input(f"Enter temperature (e.g., 36C), or press Enter to␣
 ↪finish: ")
    if Temperature == "":
        break

    if Temperature[-1].upper() != 'C':
        print("Please enter C after the number!!!")
    else:
        change_datatype = float(Temperature[:-1])
        fahrenheit_value = centigrade_to_fahrenheit(change_datatype)
        store_temperatures.append(fahrenheit_value)

max_temp = max(store_temperatures)
min_temp = min(store_temperatures)
mean_temp = sum(store_temperatures) / len(store_temperatures)

print(f"Maximum temperature: {max_temp:.2f}F")
print(f"Minimum temperature: {min_temp:.2f}F")
print(f"Mean temperature: {mean_temp:.2f}F")
```

```
Enter temperature (e.g., 36C), or press Enter to finish:  36c
Enter temperature (e.g., 36C), or press Enter to finish:  35c
Enter temperature (e.g., 36C), or press Enter to finish:  38c
Enter temperature (e.g., 36C), or press Enter to finish:  40c
Enter temperature (e.g., 36C), or press Enter to finish:

Maximum temperature: 104.00F
Minimum temperature: 95.00F
Mean temperature: 99.05F
```

[ ]: