User Input and Type Converting

In [1]:
```
#accepting and outputting user input
print(input("What is your name?"))
```

```
What is your name?Hrishikesh
Hrishikesh
```

In [2]:
```
# saving what the user inputs
ans = input(" What is yor name?")
print("Hello {}!".format(ans))
```

```
 What is yor name?Hrishikesh
Hello Hrishikesh!
```

In [3]:
```
#how to check the data type of a variable
num=5
print(type(num))
```

```
<class 'int'>
```

In [6]:
```
# converting a variable from one data type to another
num= "9"
num= int(num)  # re-declaring num to store an integer
print(type(num))

num1= True
num1= int(num1)  # True get converted to value 1
print(num1,type(num1))
```

```
<class 'int'>
1 <class 'int'>
```

In [9]:
```
# working with user input to perform calculations
ans = input("Type a number to add: ")
print(type(ans))  #default type is string
result = 100 + int(ans)
print("100 + {} = {}".format(ans,result))
"""
Inputting the number “9” will give us a proper result;
however, this conversion would not work well with the word “nine” because the default
return type for input is a string as noted by the first print statement in this cell.
"""
```

```
Type a number to add: 9
<class 'str'>
100 + 9 = 109
```

In [1]:
```
# using the try and except blocks
try:
    ans = float (input("Type a number to add: "))
    print("100 + {} = {}".format(ans,result))
except:
    print("You did not put a valid number")
    print("The program did not break")
```

```
Type a number to add: nine
You did not put a valid number
The program did not break
```

In [2]:
```
"""
Exercise 1:  Try converting a string of “True” to a boolean, and then output its
type to make sure it converted properly.
"""
str="True"
str = bool(str)
print(type(str))
```

```
<class 'bool'>
```

In [6]:
```
"""
Exercise 2: Create two input statements, and ask the user to enter two
numbers. Print the sum of these numbers out.
"""
a = input("Enter first number")
b = input("Enter second number")
sum= int(a)+int(b)
print("Sum = {}".format(sum))
```

```
Enter first number5
Enter second number2
Sum = 7
```

In [11]:
```
"""
Exercise 3: Ask the user to input the year, make, model, and color of
their car, and print a nicely formatted statement like “2018 Blue Chevrolet
Silverado.”
"""
year  = input("Enter the car manufacture year:")
make  = input("Enter the make of the car:")
model = input(" Enter the model of the car:")
color = input("Enter the color of the car:")

print(f"{int(year)} {color.title()} {make.title()} {model.title()}")
```

```
Enter the car manufacture year:2018
Enter the make of the car:Chevrolet
 Enter the model of the car:silverado
Enter the color of the car:blue
2018 Blue Chevrolet Silverado
```

IF Statements

In [12]:
```
# using an if statement to only run code if the condition is met
x,y = 5,10
if x < y:
    print(" x is less than y ") #print will only run if condition is met
```

```
 x is less than y
```

In [13]:
```
# checking user input
ans = int(input("what is 5+5?"))
if ans == 10:
    print(" You got it right")
```

```
what is 5+5?10
 You got it right
```

In [15]:
```
# using the keyword 'and' in an 'if statement' (both statements needs to be true)
x,y,z = 5,10,5
```

```
if x < y and x==z:
    print("Both statements are correct")
```

```
Both statements are correct
```

In [16]:
```
# using the keyword 'or' in an 'if statement' (one needs to be true)
x,y,z = 5,10,5
if x < y or x != z:
    print("One or both statements were true")
```

```
One or both statements were true
```

In [17]:
```
# using the keyword 'not' withing an 'if statement'
flag =False
if not flag:    # same as saying if not True
    print("Flag is False")
```

```
Flag is False
```

In [18]:
```
# Membership operator : using the keyword 'in' within an 'if statement'
word = " Baseball"
if "b" in word:
    print("{} contains the character b".format(word))
```

```
 Baseball contains the character b
```

In [19]:
```
# using the keyword ' not in' within an 'if statement'
word= "Baseball"
if 'x' not in word:
    print("{} does not contain the character x".format(word))
```

```
Baseball does not contain the character x
```

In [21]:
```
"""
Exercise 4: Ask the user for input, and check to see if what
they wrote includes an “es”.
"""
statement = input("Enter your name:")
if 'es' in statement:
    print(" {} has es".format(statement) )
```

```
Enter your name:Prathmesh
 Prathmesh has es
```

In [5]:
```
"""
Exercise 5: Ask the user for input, and check to see if what
they wrote has an “ing” at the end. Hint: Use slicing.
"""
statement = input('enter a word ')
if "ing" in statement[-3:]:
    print("{} has ing".format(statement))
```

```
enter a word running
running has ing
```

In [6]:
```
"""
Exercise 6:Ask the user to input two words, and write a conditional
statement to check if both words are the same. Make it case insensitive so that
capitals do not matter.
"""
fl = input("Enter first word")
sl = input("Enter second word")
```

```
if fl.lower() == sl.lower() :
    print("They are the same")
```

```
Enter first wordflag
Enter second wordFLAG
They are the same
```

In [15]:
```
"""
Exercise 7:Ask for the user to input a number, and return that
number squared if it is lower than 10. Hint: Investigate arithmetic expressions
for exponents.
"""
a =int( input("Enter a number"))
b =a*a
if a < 10 :
     print("{} and its square {}".format(a,b))
```

```
Enter a number5
5 and its square 25
```

ELIF Statements

In [16]:
```
# using the elif condition statement
x, y = 5, 10
if x > y:
    print("x is greater than y")
elif x < y:
    print("x is lesser than y")
```

```
x is lesser than y
```

In [17]:
```
# using the elif condition statement multiple times
x, y = 5, 10
if x > y:
    print("x is greater than y")
elif (x+10) < y:
    print("x is lesser than y")
elif (x + 5) == y:
    print("x is equal to y")
```

```
x is equal to y
```

In [18]:
```
# writing multiple conditions with each other - multiple block levels
x, y, z = 5, 10, 5
if x > y:
    print("Greater")
elif x <= y:
    if x == z:
        print("x is equal to z")
    elif x != z:
        print("x is not equal to z")
```

```
x is equal to z
```

In [24]:
```
"""
Exercise 8: Ask the user to input a number. Type convert that number, and
use an if/elif statement to print whether it's higher or lower than 100.
"""
a = int(input("Enter a number: "))
if a < 100:
    print("{} is less than 100".format(a))
```

```
elif a > 100:
    print("{} is greater than 100".format(a))
elif a == 100:
    print("{} is equal to 100".format(a))
```

```
Enter a number: 6969
6969 is greater than 100
```

Else statement

In [25]:
```
# using an else statement
name = "Hrishikesh"
if name == "Hrishikesh":
    print(" Hello Hrishkesh!")
else:
     print(" Hello {}! ".format(name))
```

```
Hello Hrishkesh!
```

In [27]:
```
# writing a  full condition statement with if, elif,else
name = input("Enter a name: ")
name=name.title()
if name[0] == "A":
    print("Name starts with an A")
elif name[0] == "B":
    print("Name starts with a B")
elif name[0] == "J":
    print("Name starts with a J")
else:
    print("Name starts with a {}".format(name[0]))
```

```
Enter a name: Hrishikesh
Name starts with a H
```

In [32]:
```
"""
Exercise 9:Ask the user to input the time of day in military time without a
colon (1100 = 11:00 AM). Write a conditional statement so that it outputs the
following:
a. “Good Morning” if less than 1200
b. “Good Afternoon” if between 1200 and 1700
c. “Good Evening” if equal or above 1700
"""
time = int(input("Enter time in Military Format: "))
if time < 1200 :
    print("Good Morning")
elif time >= 1200 and time < 1700:
    print("Good Afternoon")
else:
    print("Good Evening")
```

```
Enter time in Military Format: 2021
Good Evening
```

Project : Creating a Calculator

In [ ]:
```
"""
Statement:
1. Ask the user for the calculation they would like to perform.
2. Ask the user for the numbers they would like to run the operation
```

```
on.
3. Set up try/except clause for mathematical operation.
a. Convert numbers input to floats.
b. Perform operation and print result.
c. If an exception is hit, print error.
"""
```

In [50]:

```
#step 1 : ask user for calculation to be performed
operation = input("Would you like to add/substract/multiply/divide ?").lower()
# step 2 : ask for numbers t obe operated on
if operation == "substract" or operation == "divide":
    print("You chose {}.".format(operation))
    print("Please keep in mind that the order of your number matters")
num1 = input("Enter first number: ")
num2 = input("Enter second number: ")
print("First number : {}".format(num1))
print("Second number : {}".format(num2))
# step 3: setup try/except for mathematical operationns
try:
    #step 3a: immediately convert numbers to float
    num1, num2 = float(num1), float(num2)
    #step 3b: perform operation and print result
    if operation == "add":
        result = num1 + num2
        print(f"{num1} + {num2} = {result}")
    elif operation == "substract":
        result = num1 - num2
        print(f"{num1} - {num2} = {result}")
    elif operation == "multiply":
        result = num1 * num2
        print(f"{num1} * {num2} = {result}")
    elif operation == "divide":
        result = num1 / num2
        print(f"{num1} / {num2} = {result}")
    else:
        #else will be hit if they dont choose option correctly
        print("Sorry, but '{}' is not an option.".format(operation))
except:
    #step 3c: print error
    print("Error: Improper numbers used. Please try again.")
```

```
Would you like to add/substract/multiply/divide ?multiply
Enter first number: 69
Enter second number: 100
First number : 69
Second number : 100
69.0 * 100.0 = 6900.0
```