Assignment_2

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# Write a Python program to demonstrate different forms of if…elif…else statements.
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# a) if....else
# Program to check if an input number is Positive or Negative number
inpt=int(input("Enter a number "))

if (inpt>=0):
  print(f"{inpt} is a Positive number")
else:
  print(f"{inpt} is a Negative number")
```

```
Enter a number -58
-58 is a Negative number
```

```
# b) if...elif...else
# Program to check the Exam grades of a student
Tmarks=int(input("Enter the total marks of a subject "))
marks=input("Enter individual marks scored in each subject, seperated by a comma : ").spli
marks=[int(i) for i in marks]
TTmarks=Tmarks*len(marks)
TSmarks=sum(marks)
Pmarks=(TSmarks/TTmarks)*100
if Pmarks>=85:
  print('''You have scored "A" Grade''')
elif Pmarks>=70:
  print('''You have scored "B" Grade''')
elif Pmarks>=55:
  print('''You have scored "C" Grade''')
else:
  print('''You have scored "D" Grade''')
```

```
Enter the total marks of a subject 100
Enter individual marks scored in each subject, seperated by a comma 100,95,85,75,22,9
You have scored "B" Grade
```

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# c) nested if....elif...else statements
# Program to check is a number is a perfect square.
import math
n=int(input("Enter a number "))
if n>=0:
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  res=str(math.sqrt(n))
  if (str(res[-1:-3:-1])=="0."):
    print("The entered number is a perfect square")
  else:
    print("The entered number is not a perfect square")
else:
  print("The entered number is lesser than 0")
```

```
Enter a number 27
The entered number is not a perfect square
```

```
# (2) Write a Python program to demonstrate while loop with break and continue statements.
# a) Roll a dice and add the sum, until we quit
import random
score=0
while True:
    print(f'Your score so far is {score}.')
    print("Would you like to roll or quit?")
    ans = input("Roll..")
    if ans.lower() == 'r':
        R = random.randint(1, 8)
        print(f"You rolled a {R}.")
        score = R + score
    else:
        print("Other persons turn")
        break
```

```
Your score so far is 0.
Would you like to roll or quit?
Roll..r
You rolled a 5.
Your score so far is 5.
Would you like to roll or quit?
Roll..r
You rolled a 3.
Your score so far is 8.
Would you like to roll or quit?
Roll..
Other persons turn
```

```
# b) Add the sum of numbers till n, excluding the multiples of 5
n=int(input("Enter the number n "))
x=0
i=1
while(i<=n):
  if i%5==0:
    i+=1
    continue
  else:
    x=x+i
    i+=1
print(f"The sum of numbers till n, excluding the multiples of 5 is {x}")
```

```
Enter the number n 10
The sum of numbers till n, excluding the multiples of 5 is 40
```

```
# (3) Write a Python program to demonstrate for loop with break and continue statements.
# a) Calculate sum of odd numbers, till a given number
n=int(input())
sum=0
if n%2==0:
  n=n-1
for i in range(1,n+1):
  if i%2==0:
    continue
  else:
    sum=sum+i
print(f"The sum of odd numbers till n is {sum}")
```

```
5
The sum of odd numbers till n is 9
```

```
# b) Take a list, calculte the sum of numbers less than or equal to a given number in the
n=int(input("Enter a max limit of the numer "))
lst=input("Enter a list of numbers seperated by comma ").split(",")
lst=[int(s) for s in lst]
lst.sort()
sum=0
for i in lst:
  if i<=n:
    sum=sum+i
  else:
    break
print(lst)
print(f"Sum of numers in the list less than or equal to n is {sum}")
```

```
Enter a max limit of the numer 18
Enter a list of numbers seperated by comma 14,66,78,22,1,4,6,9
[1, 4, 6, 9, 14, 22, 66, 78]
Sum of numers in the list less than or equal to n is 34
```

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# (4) Demonstrate the following Python List operations with suitable code snippets
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Enter individual marks scored in each subject, seperated by a comma : 10,20,50
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```
# (a) Creating a List
marks=input("Enter marks scored by all the students in the class ").split(",")
marks=[int(i) for i in marks]
marks.sort()
```

```
Enter marks scored by all the students in the class 10,80,36,50
```

```
# (b) Accessing elements from a List (Positive and Negative Indexing)
highest=marks[-1]
lowest=marks[1]
print(f'''The highest marks scored in the class is "{highest}" and the lowest marks scored
```

```
The highest marks scored in the class is "80" and the lowest marks scored in the clas
```

```
# (c) Slicing Lists
mark3=marks[-1:-4:-1]
print(f'''Marks scored by the top 3 students are {str(mark3).strip("[]")}''')
```

```
Marks scored by the top 3 students are 80, 50, 36
```

```
# (d) Iterating over List, Concatenating Lists
sum=0
n=0
for i in marks:
  sum+=i
  n+=1
avg=sum/n
print(f"The average marks of the class is {avg}")
```

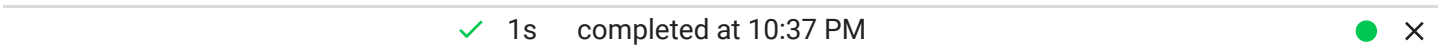
```
The average marks of the class is 44.0
```

```
# (e) Adding elements to a List - append(), extend(), insert()
add1=int(input("Enter an individual score to be added to the class marks list "))
marks.append(add1)
marks
add2=input("Enter a list of marks that need to be added to the list of marks ").split(",")
addq=[int(i) for i in add2]
marks.extend(addq)
add3=input("Enter an individual score followed by the place that it needs to be added in t
ad3=int(add3[0])
ads3=int(add3[1])
marks.insert(ads3,ad3)
marks
```

```
Enter an individual score to be added to the class marks list 44
Enter a list of marks that need to be added to the list of marks 36,99,12
Enter an individual score followed by the place that it needs to be added in the list
[55, 10, 36, 50, 80, 25, 25, 25, 44, 36, 99, 12]
```

```
# (f) Deleting or removing elements from a List - del(), remove(), pop()
marks.sort()
print(marks)
low=marks.pop(0)
print(f"The lowest marks scored by a student is {low}")
try:
  if marks.remove(100):
    print(f"The highest marks in the class is 100")
except ValueError:
  print(f"Nobody scored 100 marks in the class")
```

```
[10, 12, 25, 25, 25, 36, 36, 44]
The lowest marks scored by a student is 10
Nobody scored 100 marks in the class
```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