Assesment-1

SMART INTERNZ – APSCHE

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1. Write a Python program to calculate the area of a rectangle given its length and width

A) length=int(input())

```
Bredth=int((input())

Print(length*bredth)
```

2.Write a program to convert miles to kilometers

A) miles=int(input())

```
Print(miles*1.60934)
```

3.Write a function to check if a given string is a palindrome.

```
A)str=input()

  S=str.lower()

 If(s==s[::-1]):

      Print("Palindrome")

 Else:

      Print("Not a Palindrome")
```

4. Write a Python program to find the second largest element in a list

```
A)l=int(input()).split()

  large=l[0]

  For i in l:

     If([i]>large):

         large=l[0]

secondlarge=l[0]

for i in l:

   if(l[i]>secondlarge && l[i]<large)

       secondlarge=l[i]

print(secondlarge)
```

5.Explain what indentation means in Python

A) Python indentation refers to adding white space before a statement to a particular block of code. In another word, all the statements with the same space to the right, belong to the same code block.
Python indentation is a way of telling a Python interpreter that the group of statements belongs to a particular block of code. A block is a combination of all these statements. Block can be regarded as the grouping of statements for a specific purpose. Most programming languages like C use braces { } to define a block of code.
Python uses indentation to highlight the blocks of code. Whitespace is used for indentation in Python.
All statements with the same distance to the right belong to the same block of code.
If a block has to be more deeply nested, it is simply indented further to the right. You can understand it better by looking at the following lines of code.

6) Write a program to perform set difference operation.
```
A)set1=set(int(input()).split())
   set2=set(int(input()).split())
   set3=set1.difference(set2)
   print(set3)
```
7)Write a Python program to print numbers from 1 to 10 using a while loop.
```
A)  i=1
      while(i<11):
         Print(i)
```
8) Write a program to calculate the factorial of a number using a while loop.
```
A)n=int(input())
   Fact=1
   i=1
   While(i<=n):
      Fact=Fact*i
      i++
   print(Fact)
```
9. Write a Python program to check if a number is positive, negative, or zero using if-elif-else statements
```
A) n=int(input())
    If (n>0):
      Print("Positive")
   Elif(n<0):
     Print("Negative")
   Else:
     Print("Zero")
```

 10. Write a program to determine the largest among three numbers using conditional statements.

```
A)num1=int((input())

  num2=int(input())

  num3=int(input())

 max = 0
```

```
  if num1 >= num2 and num1 >= num3:

    print(num1)

 elif num2 >= num1 and num2 >= num3:

  print(num2)

 else:

print(num3)
```

11. Write a Python program to create a numpy array filled with ones of given shape

```
A)Import numpy as np

  N=int(input())

 Array=np.ones(N)

 Print(Array)
```

12. Write a program to create a 2D numpy array initialized with random integers.

```
A)import numpy as np

  N1=int(input())

   N2=int(input())

 Array=np.random.randint(1,5,size=(N1,N2))

 Print(Array)
```

13. Write a Python program to generate an array of evenly spaced numbers over a specified range using linspace.

```
A) import numpy as np

  N=int(input())

 sequence = np.linspace(0, N, 5)

  print(sequence)
```

14. Write a program to generate an array of 10 equally spaced values between 1 and 100 using linspace.

```
A) import numpy as np

 sequence = np.linspace(1, 100, 10)

  print(sequence)
```

15. Write a Python program to create an array containing even numbers from 2 to 20 using arange.

```
A)import numpy as np
```

```
Arr=np.arange(2,21,2,int)

Print(Arr)
```

16. Write a program to create an array containing numbers from 1 to 10 with a step size of 0.5 using arange.

A)import numpy as np

```
Arr=np.arange(1,10,0.5,)

Print(Arr)
```