

To print the 1 to 10 Natural numbers by using for loop

In [5]:

```
print("First 10 natural numbers")
for i in range(1,11):
    print(i)
```

First 10 natural numbers

1
2
3
4
5
6
7
8
9
10

In [8]:

```
for i in range(11):
    print(i,end=" ")
```

0 1 2 3 4 5 6 7 8 9 10

To print the odd numbers from 1 to 100

In [18]:

```
print("Odd numbers from 1 to 100")
for i in range(1,100,2):
    print(i,end=" ")
```

Odd numbers from 1 to 100

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 4
1 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 7
9 81 83 85 87 89 91 93 95 97 99

To print even numbers from 1 to 100

In [21]:

```
print("Even numbers from 1 to 100")
for i in range(2,100,2):
    print(i,end=" ")
```

Even numbers from 1 to 100

```
2  4  6  8  10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40
42  44  46  48  50  52  54  56  58  60  62  64  66  68  70  72  74  76  78
80  82  84  86  88  90  92  94  96  98
```

To print the value from 0 to 50 to split 3 elements

In [23]:

```
print("Numbers from 0 to 50 with a SPLIT OF 3")
for i in range(0,50,3):
    print(i,end=" ")
```

Numbers from 0 to 50 with a SPLIT OF 3

```
0  3  6  9  12  15  18  21  24  27  30  33  36  39  42  45  48
```

To print the 1 to n natural numbers in ascending order

In [30]:

```
n=int(input("Enter a natural number"))
print("Natural numbers from 1 to",n)
for i in range(1,n+1):
    print(i,end=" ")
```

Enter a natural number100

Natural numbers from 1 to 100

```
1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  2
2  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  4
1  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  6
0  61  62  63  64  65  66  67  68  69  70  71  72  73  74  75  76  77  78  7
9  80  81  82  83  84  85  86  87  88  89  90  91  92  93  94  95  96  97  9
8  99  100
```

To print numbers in descending order

In [37]:

```
n=int(input("Enter a natural number: "))
print("Natural numbers from 1 to",n)
for i in range(n,0,-1):
    print(i,end=" ")
```

Enter a natural number: 100

Natural numbers from 1 to 100

```
100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82
81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63
62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44
43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4
3 2 1
```

Breaking the string using for loop

In [60]:

```
for i in 'apssdc':
    if i=='d':
        break
    else:
        print(i,end=" ")
```

a p s s

In [62]:

```
for k in 'Koteswararao':
    if k=='w':
        break
    else:
        print(k,end=" ")
```

K o t e s

Printing integers using break loop

In [64]:

```
for i in range(1,10):
    if i==5:
        break
    else:
        print(i,end=" ")
```

1 2 3 4

Printing integers using break loop by giving dynamic input

In [76]:

```

n=int(input("Enter a break: "))
for i in range(1,101):
    if i==n:
        break
    else:
        print(i,end=" ")

```

Enter a break: 54

```

1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 2
2 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 4
1 42 43 44 45 46 47 48 49 50 51 52 53

```

To print the range of 1 to 10 with break 5

In [79]:

```

for i in range(1,11):
    if i==5:
        break
    else:
        print(i,end=" ")

```

1 2 3 4

To print the even numbers in between 1 to 20 using continue keyword

In [88]:

```

for i in range(1,41):
    if(i%2!=0):
        continue
    else:
        print(i,end=" ")

```

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

Swap between two numbers

In [89]:

```
a=5
b=10
print("Value of a before swaping: ",a)
print("Value of b before swaping: ",b)
temp=a
a=b
b=temp
print("Value of a after swaping: ",a)
print("Value of b after swaping: ",b)
```

Value of a before swaping: 5
Value of b before swaping: 10
Value of a after swaping: 10
Value of b after swaping: 5

Explanation to above program

In [94]:

```
a=5
b=10
print("Value of a before swaping: ",a)
print("Value of b before swaping: ",b)
temp=a
print("temp=",temp)
print("a=",a)
```

Value of a before swaping: 5
Value of b before swaping: 10
temp= 5
a= 5

In [95]:

```
a=5
b=10
print("Value of a before swaping: ",a)
print("Value of b before swaping: ",b)
temp=a
a=b
print("temp=",temp)
print("a=",a)
print("b=",b)
```

Value of a before swaping: 5
Value of b before swaping: 10
temp= 5
a= 10
b= 10

In [96]:

```
a=5
b=10
print("Value of a before swaping: ",a)
print("Value of b before swaping: ",b)
temp=a
a=b
b=temp
print("temp=",temp)
print("a=",a)
print("b=",b)
```

```
Value of a before swaping:  5
Value of b before swaping:  10
temp= 5
a= 10
b= 5
```

Generate a random number

In [104]:

```
import random
random.randint(0,9)
```

Out[104]:

2

In [114]:

```
import random
random.randint(10,99)
```

Out[114]:

42

To print the alphabets in python

In [127]:

```
import string
print("Alphabets from A-Z")
for a in string.ascii_uppercase:
    print(a,end=" ")
print("\nAlphabets from a-z")
for a in string.ascii_lowercase:
    print(a,end=" ")
```

Alphabets from A-Z

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Alphabets from a-z

a b c d e f g h i j k l m n o p q r s t u v w x y z

In [130]:

```
import string
print("Alphabets from A-Z in uppercase")
print(string.ascii_uppercase)
print("Alphabets from A-Z in lowercase")
print(string.ascii_lowercase)
```

Alphabets from A-Z in uppercase

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Alphabets from A-Z in lowercase

abcdefghijklmnopqrstuvwxyz

Program to display calender of the given month and year

In [142]:

```
import calendar
yy=1999
mm=9
print(calendar.month(yy,mm))
```

September 1999

Mo	Tu	We	Th	Fr	Sa	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

In [144]:

```
import calendar
yy=2000
mm=7
print(calendar.month(yy,mm))
```

July 2000

Mo	Tu	We	Th	Fr	Sa	Su
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

In [145]:

```
import calendar
print(calendar.month(1999,9))
```

September 1999

Mo	Tu	We	Th	Fr	Sa	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

In [148]:

```
import calendar
print(calendar.month(2000,7))
```

July 2000

Mo	Tu	We	Th	Fr	Sa	Su
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

In [17]:

```
import calendar
print(calendar.month(1947,8))
```

```

    August 1947
Mo Tu We Th Fr Sa Su
                1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

```

Functions

---> Reusability of the code

---> Easy Debugging

Function is a group of statements. It can perform one specific task.

Function Keyword: def

In python by using "def" keyword, we can perform the functions

Syntax:

```
def function_name(argument_list):
```

```
statements
```

```
return value.
```

Example

In [166]:

```
def add (a,b):
    c=a+b
    return c
print(add(1,2))
print(add(6,10))
```

```
3
16
```

4 Types of functions:

1. With arguments and with return values
2. With arguments and without return values
3. Without arguments and with return values
4. Without arguments and without return values

1. function definition

```
def function_name(arguments)
```

2. function calling

function_name(variable_name)

1. with arguments and with return value

Syntax:

def function_name(argument_list):

statements

return value.

In [20]:

```
n1=int(input("Enter n1 value: "))#step 1 n1=10,n2=10
n2=int(input("Enter n2 value: "))#step 2
def add(a,b):#step3 :a=n1,b=n2
    c=a+b#c=10+10
    return c #c=20
print(add(n1,n2))#function calling again to step 3
```

Enter n1 value: 10

Enter n2 value: 10

20

2. With arguments and without return values

def function_name(argument_list):

statements

print (output).

In [30]:

```
# To perform subtraction of two numbers
n1=int(input("Enter n1 value: "))#step1 n1=100 n2=50
n2=int(input("Enter n2 value: "))#step 2
def subtraction(a,b):#Step 3 a=n1,b=n2
    c=a-b#c=100-50
    print(c)#c=50
subtraction(n1,n2)#function calling again to step 3
```

Enter n1 value: 100

Enter n2 value: 50

50

3. Without arguments and without return value

In [63]:

```
def adding():  
    a=20  
    b=30  
    sum=a+b  
    print("Total of two values",sum)  
adding()
```

Total of two values 50

In [62]:

```
def adding():  
    a=int(input("Enter first value: "))  
    b=int(input("Enter second value: "))  
    sum=a+b  
    print("Total of two values",sum)  
adding()
```

Enter first value: 10
Enter second value: 20
Total of two values 30

4. Without arguments and with return value

In [68]:

```
def multiplication():  
    a=20  
    b=40  
    c=a*b  
    return c  
print(multiplication())
```

800

In [69]:

```
def multiplication():  
    a=int(input("Enter first value"))  
    b=int(input("Enter second value"))  
    c=a*b  
    return c  
print(multiplication())
```

Enter first value10
Enter second value20
200

In []:

