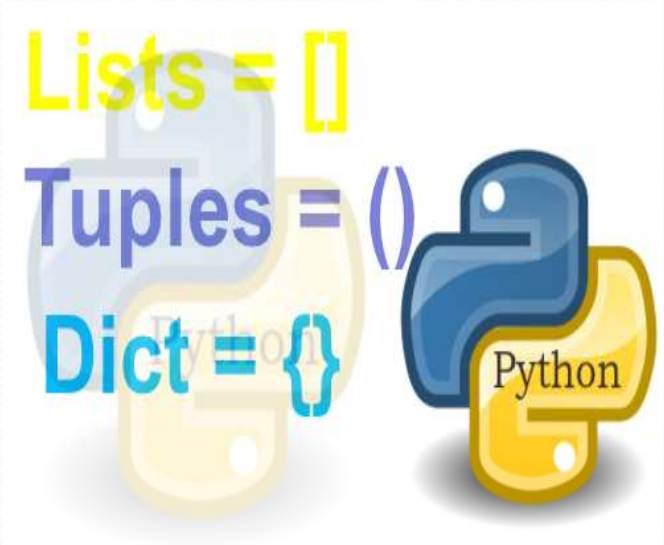
Different ways to store data

Phone number(a number)

Name

Marks of a student

List , tuple, dictionary



Phone numbers of all students

Names of all students

Marks of all students

Twinkle, twinkle, little star
How I wonder what you are
Up above the world so high
Like a diamond in the sky

Can we walk through these?

```
marks=[90,70,80,60]
names=[
          "acharya","anusha","ayushi","akshaya",
          "anant","pavan","kumar","kishore",
         "charan","bhumika","anirudh","sujay",
         ]

phones= {
           "acharya":"9845098450",
            "pavan" :"9845098451",
           "kumar" :"9845098452"
          }
```

Can we walk through these?

str="BANGALORE”

B	A	N	G	A	L	O	R	E
0	1	2	3	4	5	6	7	8

```
str="Twinkle, twinkle, little star \
     How I wonder what you are \
     Up above the world so high \
     Like a diamond in the sky"
```

Accessing string elements
str[0] returns B
str[1] returns A

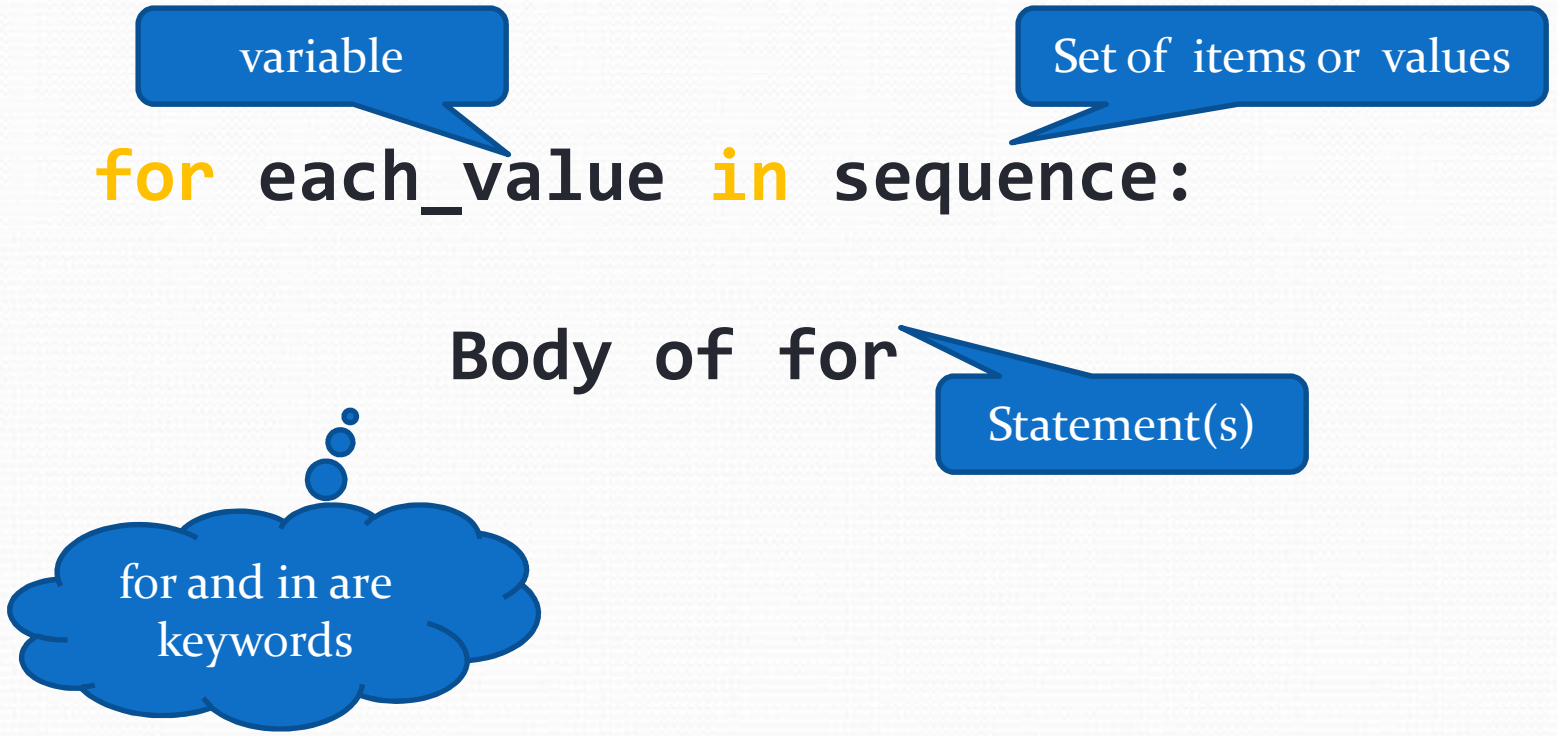
```
for  x in str:
        print(x)
```

Printing n natural numbers

1 2 3 4 5 6 7 8 9 .....

```
n=int(input('enter the number'))
for i in range(1,n):
    print(i)
```

For loop syntax:



Comparison of while and for

```
n=100
for i in range(1,n+1):
    print(i,end=" ")
```

```
n=100
i=1
while(i<=n):
    print(i,end="")
    i=i+1
```

Comparison of while and for

```
names=[
        "acharya","anusha","ayushi","akshaya",
            "anant","pavan","kumar","kishore",
           "charan","bhumika","anirudh","sujay",
       ]
```

```
for x in names:
    print(x)
```

```
x=0
while(x<len(names)):
    print(names[x])
    x=x+1
```

Rule:

Use while when you have to,

use for whenever you can.

sum of digits of a number

```
# sum of digits of a number
n = input("enter an integer : ")
n = int(n)
s = 0
while n :
    s += n % 10
    n = int(n / 10)
print(s)
```

display squares of numbers from 1 to n.

```
# display all squares from 1 to n
n = int(input("enter an integer : "))
i = 1
while i <= n :
    print( i * i)
    i += 1
```

```
n = int(input("enter an integer : "))
for i in range(1, n + 1):
        print( i * i)
```

Display all squares, squared values is less than or equal to a given number

```
Enter an integer : 50
Square of  1  is  1
Square of  2  is  4
Square of  3  is  9
Square of  4  is  16
Square of  5  is  25
Square of  6  is  36
Square of  7  is  49
```

Display all squares, squared values is less than or equal to a given number

```
n = int(input("enter an integer : "))
i=1
while i*i<=n:
      print(i*i)
      i=i+1
```

We cannot easily pre-compute the number of iterations.
So we prefer a while loop here.

```
n = int(input("enter an integer : "))
i=1
sqr=i*i
while sqr<=n:
    print(sqr)
    i=i+1
    sqr=i*i
```