

CHAPTER-03

IF STATEMENT:

Code will execute if condition is true.

```
age=int(input("Enter your age: "))
if age>=14:
    print("You are above 14")
```

PASS STATEMENT:

If we don't want to write anything in the if statement,
then we can simply write 'pass' and the code will execute.

```
x=18
if x>12:
    pass
```

IF ELSE STATEMENT:

```
age=int(input("Enter your age: "))
if age>=14:
    print("You are above 14")
else:
    print("You are below 14")
```

EXERCISE 01:

```
# Exercise_01: Number guessing game.

# Make a variable, like winning_number and assign any number to it.
# Ask user to guess a number.
# If user guessed correctly then print "YOU WIN!!".
# If user didn't guessed correctly then:
# --> if user guessed lower than actual number then print "too low".
# --> if user guessed higher than actual number then print "too high".

# Bonus:
# Google "How to generate random number in python" to generate random
winning number.

import random

# Nested if_else:
# Simple Method:
winning_num= 96
guessing_num= int(input("Guess the number between 1 to 100: "))

if winning_num==guessing_num:
    print("YOU WINN!!")
else:
    if guessing_num<winning_num:
        print("Too Low")
    else:
        print("Too High")

# Using random function:
winning_num= random.randint(0,100)
guessing_num= int(input("Guess the number between 1 to 100: "))

if winning_num==guessing_num:
    print("YOU WINN!!")
else:
    if guessing_num<winning_num:
```

```
        print("Too Low")
    else:
        print("Too High")
```

AND OR OPERATOR:

Check two conditions at same time

and operator

name="Abrar"

age= 23

```
if name=="Abrar" and age==23:
    print("True")
else:
    print("False")
```

Both of the conditions must be true for and operator;

name="Abrar"

age= 22

```
if name=="Abrar" and age==23:
    print("True")
else:
    print("False")
```

or operator

Both of the conditions must be true for or operator(Not important);

name="Abrar"

age= 21

```
if name=="Abrar" or age==23:
    print("True")
else:
    print("False")
```

EXERCISE 02:

```
# Exercise_02: Watch COCO

# Ask user's name and age
# If user's name start with ('a' or 'A') and age is above 10 then
# Print 'you can watch coco movie'
# Else print 'sorry, you cannot watch coco'

user_name= input("Enter your name please: ")
user_age= int(input("Enter your age please: "))

first_letter= user_name[0]

if (first_letter=='a' or first_letter=='A') and user_age>=10:
    print("You can watch COCO")
else:
    print("Sorry, you cannot watch COCO")
```

IF ELIF ELSE KEYWORD:

```
# Enter your age and print corresponding ticket price.

age=int(input("Enter age: "))
if age<=0:
    print("Enter correct age")
elif 1<=age<=3:
    print("Ticket is free")
elif 4<=age<=10:
    print("Ticket price: 150tk")
elif 11<=age<=60:
    print("Ticket price: 150tk")
else:
    print("Ticket price: 200tk")
```

IN KEYWORD:

```
name= "Abrar"

if "r" in "Abrar":
    print("r is present")
else:
    print("not present")
```

EMPTY CHECK:

```
# Check empty or not
####
name="abrar"
if name:
    print("string is not empty")
else:
    print("string is empty")

####
name=""
if name:
    print("string is not empty")
else:
    print("string is empty")

####
name=input("Enter your name: ")
if name:
    print(f"YOur name is {name}")
else:
    print("string is empty")
```

WHILE LOOP:

```
i=1
while i<=10:
    print(f"HELLO WORLD {i}")
    i=i+1
```

WHILE SUM:

```
# sum: 1 to 10
```

```
total=0
i=1
while i<=10:
    total+=i
    i=i+1
print(total)
```

EXERCISE 03:

```
# Exercise_03:
# sum of n natural numbers
# ask a user for natural number(n)
# print total from 1 to n
```

```
n=int(input("Enter value of n: "))
```

```
summ=0
i=1
while i<=n:
    summ+=i
    i+=1
print(f"summation is {summ}")
```

EXERCISE 04:

```
# Exercise_04:
# ask user to input a number containing more than one digit
# example 1234
# calculate 1+2+3+4 and print
```

```
digit=input("Enter a digit: ")
length=len(digit)
i=0
summ=0
```

```
while i<=(length-1):
    summ+=int(digit[i])
    i+=1
print(f"Summation is {summ}")
```

EXERCISE 05:

```
# Exercise_04:
# ask a user for name
# example- Abrar Haider
# print count of each words
# output-
# A:1
# b:1
# r:3
# a:2
#  :1
# H:1
# i:1
# d:1
# e:1

# Way_01:
name=input("Enter your name: ")
length=len(name)

i=0
while i<length:
    char=name[i]
    name1=name[i:length]
    name2=name[0:i]
    x=name2.find(char)

    if name2=="" or x==-1:
        print(f"{char} : {name1.count(char)}")

    i+=1
```

```

# Way_02:
name=input("Enter your name: ")
length=len(name)
temp_var=""
i=0
while i<length:
    if name[i] not in temp_var:
        temp_var +=name[i]
        print(f"{name[i]} : {name.count(name[i])}")
    i+=1

```

INFINITE LOOP:

```

# True,False--> Boolean

```

```

while True:
    print("Hello World")

```

FOR LOOP:

```

# for loop with range function

```

```

# i--> 0 to 9
for i in range(10):
    print(f"Hello World {i}")

```

```

# i--> 1 to 10
for i in range(1,11):
    print(f"Hello World {i}")

```


FOR LOOP SUM:

```
# sum from 1 to 10:
total=0
for i in range(1,11):
    total+=i
print(total)

# taking user input:
num= int(input("Enter a number: "))
total=0
for num in range(1,(num+1)):
    total += num
print(total)
```

FOR LOOP PRACTICE 01:

```
# Ask user a number like 1256
# calculate sum of digits: 1+2+5+6

num=input("Enter a number: ")
length=len(num)

total=0
for i in range(0,length):
    char=num[i]
    total+= int(char)
print(total)
```

FOR LOOP PRACTICE 02:

```
# ask a user for name
# example- Abrar Haider
# print count of each words
# output-
# A:1
# b:1
# r:3
# a:2
#   :1
# H:1
# i:1
# d:1
# e:1
```

```
name= input("Enter your name: ")
```

```
temp=""
for i in range(0,len(name)):
    if name[i] not in temp:
        temp+=name[i]
        print(f"{name[i]} : {name.count(name[i])}")
```

BREAK AND CONTINUE:

```
# To break Loop we use break keyword.
```

```
for i in range(1,11):
    if i==5:
        break
    print(i)
```

```
# Print 1 to 10, but not 5.
```

```
for i in range(1,11):#<---
    if i==5:         #   |
        continue # -----
    print(i)
```

EXERCISE 06:

Number guessing game:

```
import random
```

```
winning_num= random.randint(1,100)
```

```
print("Enter a number between 1 to 100: ")
```

```
i=0
```

```
while True:
```

```
    guessing_num=int(input())
```

```
    i+=1
```

```
    if guessing_num>winning_num:
```

```
        print("Too High")
```

```
        print("Guess again: ")
```

```
        continue
```

```
    elif guessing_num<winning_num:
```

```
        print("Too Low")
```

```
        print("Guess again: ")
```

```
        continue
```

```
    elif guessing_num==winning_num:
```

```
        print(f"You win after trying {i} times")
```

```
        break
```

DRY:

```
# DRY - don't repeat yourself
# Number guessing game:
import random
win_num= random.randint(1,100)
guess=1
num=int(input("guess a number between 1 and 100: "))
game_over= False

while not game_over:
    if num==win_num:
        print(f"you win, and you guessed this number in {guess}
times")
        game_over= True
    else:
        if num<win_num:
            print("too Low")
        else:
            print("too High")

        guess+=1
        num=int(input("guess again: "))
```

STEP RANGE:

```
# (starting:ending:step):

for i in range(1,11,2):
    print(i)

for i in range(10,0,-1):
    print(i)
```

FOR LOOP STRING:

print every letter:

```
name="Abrar"  
for i in name:  
    print(i)
```

1256--> 1+2+5+6:

```
num=input("Enter a number: ")  
total=0  
for i in num:  
    total+=int(i)  
print(total)
```