

# Python Study Notes (Roman Urdu)

## Statements, Branching aur Looping

### Python Statement Kya Hota Hai

**Statement** Python ka wo instruction hota hai jo interpreter execute karta hai. Python program asal mein statements ka collection hota hai jo line by line run hotay hain.

**Practical Samajh:** Jab aap Python ko koi kaam karne ka hukam dete ho (print karna, decision lena, loop chalana), wo sab statements hotay hain.

**Example:**

```
print("Hello")
x = 5
```

### Input Statement

#### Definition

Input statement user se data lene ke liye use hota hai jab program run ho raha hota hai.

#### Practical Explanation

- User se naam, age ya number lena ho to input use hota hai
- `input()` hamesha string return karta hai
- Number ke liye conversion zaroori hoti hai

**Examples:**

```
name = input("Apna naam likho: ")
age = int(input("Apni age likho: "))
price = float(input("Product ki price likho: "))
city = input("City ka naam likho: ")
print("Aap", city, "mein rehtay ho")
```

# Output Statement

## Definition

Output statement program ka result screen par dikhata hai.

## Practical Explanation

Jab aap chahte ho ke message, calculation ya result screen par aaye, to `print()` use hota hai.

## Practice Examples

```
print("Hello Python")
print(10 + 20)
name = "Ali"
print("Naam:", name)
age = 20
print("Age:", age)
print("A", "B", "C")
print("Python\nJava")
print("Apple", "Banana", sep="-")
marks = 85
print("Marks =", marks)
print("Result: Pass")
print("Program khatam ho gaya")
```

# Branching (Conditional Statements)

## Definition

Branching statements decision making ke liye use hotay hain.

## Practical Explanation

Real life jaise:

- agar marks 50 se zyada hon to pass
- warna fail

Python bhi isi tarah decision leta hai using conditions.

# If Statement

## Definition

if statement tab execute hota hai jab condition true ho.

## Practice Examples

```
age = 18
if age >= 18:
    print("Aap eligible ho")

marks = 70
if marks >= 50:
    print("Pass")

num = 4
if num % 2 == 0:
    print("Even number")

temp = 35
if temp > 30:
    print("Bohat garmi hai")

balance = 1000
if balance >= 500:
    print("Withdraw ho sakta hai")

status = "active"
if status == "active":
    print("Account active hai")

speed = 60
if speed <= 80:
    print("Speed safe hai")

x = 0
if x == 0:
    print("Zero hai")

logged_in = True
if logged_in:
```

```

    print("Welcome user")

day = "Monday"
if day == "Monday":
    print("Aaj class hai")

```

## If–Else Statement

### Definition

If–else tab use hota hai jab do clear outcomes hon.

### Practice Examples

```

age = 16
if age >= 18:
    print("Adult")
else:
    print("Minor")

marks = 40
if marks >= 50:
    print("Pass")
else:
    print("Fail")

num = 7
if num % 2 == 0:
    print("Even")
else:
    print("Odd")

password = "1234"
if password == "1234":
    print("Login successful")
else:
    print("Wrong password")

balance = 100
if balance >= 200:
    print("Shopping possible")

```

```

else:
    print("Paise kam hain")

rain = False
if rain:
    print("Chhata le jao")
else:
    print("Chhata zaroori nahi")

light = "red"
if light == "green":
    print("Go")
else:
    print("Stop")

num = 0
if num == 0:
    print("Zero")
else:
    print("Non-zero")

score = 90
if score >= 50:
    print("Passed")
else:
    print("Failed")

time = 22
if time < 18:
    print("Day time")
else:
    print("Night")

```

## If–Elif–Else Statement

### Definition

If–elif–else multiple conditions check karne ke liye use hota hai.

### Practice Examples

```

marks = 85
if marks >= 90:
    print("A grade")
elif marks >= 80:
    print("B grade")
else:
    print("C grade")

num = -5
if num > 0:
    print("Positive")
elif num < 0:
    print("Negative")
else:
    print("Zero")

age = 12
if age < 13:
    print("Child")
elif age < 18:
    print("Teenager")
else:
    print("Adult")

temp = 15
if temp > 30:
    print("Garmi")
elif temp > 20:
    print("Mausam theek")
else:
    print("Thand")

day = 1
if day == 1:
    print("Monday")
elif day == 2:
    print("Tuesday")
else:
    print("Koi aur din")

score = 45

```

```
if score >= 80:
    print("Excellent")
elif score >= 50:
    print("Pass")
else:
    print("Fail")

time = 14
if time < 12:
    print("Morning")
elif time < 18:
    print("Afternoon")
else:
    print("Evening")

rating = 4
if rating == 5:
    print("Very good")
elif rating == 4:
    print("Good")
else:
    print("Average")

signal = "yellow"
if signal == "green":
    print("Go")
elif signal == "yellow":
    print("Wait")
else:
    print("Stop")

speed = 90
if speed < 60:
    print("Slow")
elif speed <= 80:
    print("Normal")
else:
    print("Overspeed")
```

# Looping Statements

## Definition

Looping statements aik hi code ko bar bar repeat karne ke liye use hotay hain.

## For Loop

### Definition

For loop tab use hota hai jab humein pata ho kitni dafa loop chalana hai.

### Examples

```
for i in range(5):
    print(i)

for i in range(1, 6):
    print(i)

for ch in "Python":
    print(ch)

for num in [10, 20, 30]:
    print(num)

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

total = 0
for i in range(1, 6):
    total += i
print(total)

for i in range(3):
    print("Hello")

for i in range(1, 4):
    print(i * i)

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

```
for fruit in ["apple", "banana", "mango"]:  
    print(fruit)
```

## While Loop

### Definition

While loop tab tak chalta rehta hai jab tak condition true rahe.

### Examples

```
i = 1  
while i <= 5:  
    print(i)  
    i += 1  
  
i = 5  
while i > 0:  
    print(i)  
    i -= 1  
  
count = 0  
while count < 3:  
    print("Hello")  
    count += 1  
  
num = 10  
while num > 0:  
    print(num)  
    num -= 2  
  
x = 1  
while x <= 10:  
    print(x * 2)  
    x += 1  
  
sum = 0  
i = 1  
while i <= 5:  
    sum += i
```

```

        i += 1
print(sum)

password = ""
while password != "1234":
    password = input("Password likho: ")

x = 10
while x >= 1:
    print(x)
    x -= 1

num = 1
while num <= 10:
    if num % 2 == 0:
        print(num)
    num += 1

i = 1
while i <= 3:
    print("Python")
    i += 1

```

## Exam Yaad Rakhne Ke Points

- Statement ka matlab instruction hota hai
- Branching decision lene ke liye hoti hai
- Looping repetition ke liye use hoti hai
- For loop fixed times ke liye hota hai
- While loop condition based hota hai