PYTHON LOOPS – FULL GUIDE NOTES

1. FOR LOOP

A for loop is used to iterate over a sequence like list, tuple, string, dictionary, or range.

Example:

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

2. WHILE LOOP

A while loop runs until a condition becomes false.

Example:

```
i = 1
while i <= 5:
print(i)
i += 1
```

3. LOOP CONTROL STATEMENTS

break - stops the loop immediately.

continue - skips the current iteration.

pass - placeholder (does nothing).

4. ELSE WITH LOOPS

Else executes only when the loop ends without break.

Example:

```
for i in range(5):
print(i)
else:
print("Loop finished")
```

5. NESTED LOOPS

Loops inside loops.

Example:

```
for i in range(3):

for j in range(3):

print(i, j)
```

6. LOOPING THROUGH DICTIONARIES

Loop keys:

```
for k in dict:

print(k)
```

Loop values:

```
for v in dict.values():

print(v)
```

Loop items:

```
for k, v in dict.items():

print(k, v)
```

7. PRACTICAL EXAMPLES

Sum of numbers 1–10:

```
total = 0

for i in range(1, 11):

total += i

print(total)
```

Multiplication Table:

```
for i in range(1, 11):

print("5 x", i, "=", 5 * i)
```