

Q.1

What is the difference between if and elif in Python?

Ans:

The `if` statement checks the first condition in a program. The `elif` statement, which stands for "else if," checks additional conditions only if the previous `if` or `elif` condition is false.

Q.2

When is a while loop preferred over a for loop?

Ans:

A `while` loop is better when you don't know how many times you need to repeat something and want to keep going until a condition is met, like asking a user for valid input until they get it right. A `for` loop is better when you know the number of repetitions, like looping through a list.

Q.3

Why are loops important in programming?

Ans:

Loops let you run the same piece of code multiple times automatically, saving time and effort. For example, you can use a loop to process every item in a list without writing repetitive code.

Q.4

Give an example where nested if-else is useful?

Ans:

Nested `if-else` is useful when you need to check conditions within conditions. For example, first check if a user is logged in, then check if they're an admin or a regular user to give them specific permissions.

Q.5

Explain the use of break and continue statements with examples?

break: Stops the loop completely when a condition is met.

```
python
for i in range(5):
    if i == 3:
        break
    print(i)
```

Output: 0, 1, 2 (stops at 3)

continue: Skips the current iteration and moves to the next one.

```
python
for i in range(5):
    if i == 2:
        continue
    print(i)
```

Output: 0, 1, 3, 4 (skips 2)