

In [1]: *#Demonstrate Conditional Logic Using if, else, and elif Statements*

```
# Sample score
score = 85

# Using if, else, and elif to determine grade
if score >= 90:
    grade = 'A'
elif score >= 75:
    grade = 'B'
else:
    grade = 'C'

print(f"The grade for a score of {score} is: {grade}")
```

The grade for a score of 85 is: B

In [2]: *#Create Complex Conditional Expressions*

```
# Sample variables
temperature = 30 # Temperature in degrees Celsius
weather = "sunny"

# Complex conditional expressions
if temperature > 25 and weather == "sunny":
    print("It's a warm and sunny day. Perfect for a picnic!")
elif temperature < 15 or weather == "rainy":
    print("It's either cold or rainy. Stay indoors!")
else:
    print("The weather is pleasant!")
```

It's a warm and sunny day. Perfect for a picnic!

In [3]: *#Implement Nested If Statements*

```
# Sample age
age = 20

# Nested if statements to determine age category
if age >= 18:
    if age < 21:
        category = "Young Adult"
    else:
        category = "Adult"
else:
    category = "Minor"

print(f"The person is categorized as: {category}")
```

The person is categorized as: Young Adult

In [4]: *#Using If Statements with Lists*

```
# Sample list of numbers
numbers = [10, 25, 30, 45, 60]
```

```
# Checking each number and printing whether it's even or odd
for num in numbers:
    if num % 2 == 0:
        print(f"{num} is even.")
    else:
        print(f"{num} is odd.")
```

10 is even.
25 is odd.
30 is even.
45 is odd.
60 is even.

```
In [5]: #Combining Conditions with If Statements

# Sample user input for temperature and humidity
temperature = 35 # in degrees Celsius
humidity = 80 # in percentage

# Decision making based on combined conditions
if temperature > 30:
    if humidity > 70:
        print("It's hot and humid outside!")
    else:
        print("It's hot but not too humid.")
else:
    if humidity > 70:
        print("It's cool but very humid.")
    else:
        print("The weather is pleasant.")
```

It's hot and humid outside!

In []: