if function is a function used to provide a condition to a certain argument. In short it checks if a certain condition is valid or holds true and if it holds true then it executes the code. If not true then it skips the entire code written under the if function.

Elif function is similar to if function and its full form translates to else if. It is use when the first condition is false, it moves on to the next "elif" statement to check if that condition is true.

Else function is the final function used in conditional statements when all the above mentioned conditions under the if and elif functions are false.

1. FINDING OUT THE LARGER NUMBER:

a) Test case 1 :

```
In [1]: #Finding out the larger number
        n1=int(input("Enter the first number : "))
        n2=int(input("Enter the second number: "))
        if n1>n2:
            print("The first number",n1,"is larger")
        elif n2>n1:
            print("The second number",n2,"is larger")
        else:
            print("Both Numbers are equal")

        Enter the first number : 15
        Enter the second number: 20
        The second number 20 is larger
```

b) Test case 2 :

```
In [2]: #Finding out the larger number
        n1=int(input("Enter the first number : "))
        n2=int(input("Enter the second number: "))
        if n1>n2:
            print("The first number",n1,"is larger")
        elif n2>n1:
            print("The second number",n2,"is larger")
        else:
            print("Both Numbers are equal")

        Enter the first number : 50
        Enter the second number: 50
        Both Numbers are equal
```

c) Test case 3:

```
In [3]: #Finding out the larger number
        n1=int(input("Enter the first number : "))
        n2=int(input("Enter the second number: "))
        if n1>n2:
            print("The first number",n1,"is larger")
        elif n2>n1:
            print("The second number",n2,"is larger")
        else:
            print("Both Numbers are equal")

        Enter the first number : -5
        Enter the second number: 0
        The second number 0 is larger
```

2. CHECK IF THE PERSON IS ELIGIBLE TO VOTE:

a) Test case 1 :

```
In [9]: #Checking if person is eligible to vote
        age=int(input("Enter your age : "))
        if age>=18:
            print("You are eligible to vote")
        else:
            print("You are not eligible to vote")

        Enter your age : 21
        You are eligible to vote
```

b) Test case 2:

```
In [8]: #Checking if person is eligible to vote
        age=int(input("Enter your age : "))
        if age>=18:
            print("You are eligible to vote")
        else:
            print("You are not eligible to vote")

        Enter your age : 16
        You are not eligible to vote
```

c) Test case 3:

```
In [7]: #Checking if person is eligible to vote
        age=int(input("Enter your age : "))
        if age>=18:
            print("You are eligible to vote")
        else:
            print("You are not eligible to vote")

        Enter your age : 18
        You are eligible to vote
```

3. Student Exercise: Convert a String to Lowercase and Check for a Specific Word

a) Test case 1:

```
#Student Exercise: Convert a String to Lowercase and Check for a Specific Word
s=input("Enter a sentence: ").lower()
if "python" in s:
    print("The word 'Python' is in the sentence")
else:
    print("The word 'Python' is not in the sentence")

Enter a sentence:  I am learning Python programming
The word 'Python' is in the sentence
```

b) Test case 2 :

```
#Student Exercise: Convert a String to Lowercase and Check for a Specific Word
s=input("Enter a sentence: ").lower()
if "python" in s:
    print("The word 'Python' is in the sentence")
else:
    print("The word 'Python' is not in the sentence")

Enter a sentence: Python is fun to learn
The word 'Python' is in the sentence
```

c) Test case 3 :

```
#Student Exercise: Convert a String to Lowercase and Check for a Specific Word
s=input("Enter a sentence: ").lower()
if "python" in s:
    print("The word 'Python' is in the sentence")
else:
    print("The word 'Python' is not in the sentence")

Enter a sentence: I enjoy coding in JavaScript
The word 'Python' is not in the sentence
```

d) Test case 4 :

```
: #Student Exercise: Convert a String to Lowercase and Check for a Specific Word
  s=input("Enter a sentence: ").lower()
  if "python" in s:
      print("The word 'Python' is in the sentence")
  else:
      print("The word 'Python' is not in the sentence")

  Enter a sentence: My favourite language is PYTHON.
  The word 'Python' is in the sentence
```

4. Check if a Number is Divisible by 5 and 11
a) Test case 1 :

```
: #4. Check if a Number is Divisible by 5 and 11
  n=int(input("Enter the number: "))
  if n%5==0 and n%11==0:
      print(n,"is divisible by both  5 and 11")
  else:
      print(n,"is not divisible by both 5 and 11")

  Enter the number: 55
  55 is divisible by both  5 and 11
```

b) Test case 2:

```
: #4. Check if a Number is Divisible by 5 and 11
  n=int(input("Enter the number: "))
  if n%5==0 and n%11==0:
      print(n,"is divisible by both  5 and 11")
  else:
      print(n,"is not divisible by both 5 and 11")

  Enter the number: 22
  22 is not divisible by both 5 and 11
```

c) Test case 3:

```
: #4. Check if a Number is Divisible by 5 and 11
  n=int(input("Enter the number: "))
  if n%5==0 and n%11==0:
      print(n,"is divisible by both  5 and 11")
  else:
      print(n,"is not divisible by both 5 and 11")

  Enter the number: 110
  110 is divisible by both  5 and 11
```

5. Categorize an Age Group

a) Test case 1:

```
#5. Categorize an Age Group
import numpy as np
age=int(input("Enter your age: "))
if age<=12:
    print(" You Belong to the child category")
elif age<=18:
    print("You belong to the teen category")
elif age<60:
    print("You belong to the adult category")
elif age>=60:
    print("You belong to the senior category")


Enter your age: 10
 You Belong to the child category
```

b) Test case 2:

```
#5. Categorize an Age Group
import numpy as np
age=int(input("Enter your age: "))
if age<=12:
    print(" You Belong to the child category")
elif age<=18:
    print("You belong to the teen category")
elif age<60:
    print("You belong to the adult category")
elif age>=60:
    print("You belong to the senior category")


Enter your age: 16
You belong to the teen category
```

c) Test case 3 :

```
#5. Categorize an Age Group
import numpy as np
age=int(input("Enter your age: "))
if age<=12:
    print(" You Belong to the child category")
elif age<=18:
    print("You belong to the teen category")
elif age<60:
    print("You belong to the adult category")
elif age>=60:
    print("You belong to the senior category")


Enter your age: 45
You belong to the adult category
```

6. Find the Second Largest of Three Numbers.

a) Test case 1:

```python
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
num3 = int(input("Enter the third number: "))
if (num1 >= num2 and num1 <= num3) or (num1 >= num3 and num1 <= num2):
    print("The second largest number is :", num1)
elif (num2 >= num1 and num2 <= num3) or (num2 >= num3 and num2 <= num1):
    print("the second largest number is :", num2)
else:
    print("the second largest number is :", num3)
```

```
Enter the first number: 10
Enter the second number: 20
Enter the third number: 15
the second largest number is : 15
```

b) Test case 2:

```python
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))
if (num1 >= num2 and num1 <= num3) or (num1 >= num3 and num1 <= num2):
    print("The second largest number is :", num1)
elif (num2 >= num1 and num2 <= num3) or (num2 >= num3 and num2 <= num1):
    print("the second largest number is :", num2)
else:
    print("the second largest number is :", num3)
```

```
Enter the first number: 7.5
Enter the second number: 7.5
Enter the third number: 10
The second largest number is : 7.5
```

c) Test case 3:

```python
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))
if (num1 >= num2 and num1 <= num3) or (num1 >= num3 and num1 <= num2):
    print("The second largest number is :", num1)
elif (num2 >= num1 and num2 <= num3) or (num2 >= num3 and num2 <= num1):
    print("the second largest number is :", num2)
else:
    print("the second largest number is :", num3)
```

```
Enter the first number: 5
Enter the second number: 3
Enter the third number: 8
The second largest number is : 5.0
```

d) Test case 4:

```python
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))
if (num1 >= num2 and num1 <= num3) or (num1 >= num3 and num1 <= num2):
    print("The second largest number is :", num1)
elif (num2 >= num1 and num2 <= num3) or (num2 >= num3 and num2 <= num1):
    print("the second largest number is :", num2)
else:
    print("the second largest number is :", num3)
```

```
Enter the first number: -1
Enter the second number: -2
Enter the third number: -3
the second largest number is : -2.0
```