Unit 1
Important Additional Examples

Example 1: Must execute the Algorithm

```
Find2(s, n) {
    EleFound = s[0]
    for (i = (n-1) downto 0 ) {
        if (s[i] > EleFound)
            EleFound = i
    }
    return EleFound
}
```
A simple algorithm

What is the value returned by Find2([2, 10, 6, 8], 4)?
We need to execute the algorithm to find the value.

The execution is as follows:

First, Elefound = s[0] = 2.

Next, the for loop is iterated from i = (n-1) downto 0 that is i = (4-1) =3 down to 0

In the first iteration i=3, as s[3] = 8 > Elefound = 2, Elefound = i = 3.

In the 2nd iteration i=2, as s[2] = 6 > Elefound = 3, Elefound = i = 2.

In the 3rd iteration i=1, as s[1] = 10 > Elefound = 2, Elefound = i = 1.

In the last iteration i=0, as s[0] = 2 > Elefound = 1, Elefound = i = 0.

Now, the for loop execution is completed.

Then, it executes the statement after for loop, and return 0. After the execution of the return statement, the execution of the algo is fully completed. No further statement will be executed.

Example 2: Must execute the Algorithm

```
Find2(s, n) {
    EleFound = s[0]
    for (i = (n-1) downto 0 ) {
        if (s[i] > EleFound)
            EleFound = s[i]
    }
    return EleFound
}
```
A simple algorithm

What is the value returned by Find2([2, 10, 6, 8], 4)?
We need to execute the algorithm to find the value.

The execution is as follows:

First, Elefound = s[0] = 2.

Next, the for loop is iterated from i = (n-1) downto 0 that is i = (4-1) =3 down to 0

In the first iteration i = 3, as s[3] = 8 > Elefound = 2, Elefound = s[3] = 8.

In the 2nd iteration i=2, as s[2] = 6 Not > Elefound = 8, Elefound remains unchanged as 8.

In the 3rd iteration i=1, as s[1] = 10 > Elefound = 8, Elefound = s[1] = 10.

In the last iteration i=0, as s[0] = 2 Not > Elefound = 10, Elefound remains unchanged as 10.

Now, the for loop execution is completed.

Then, it executes the statement after for loop, and return 10. After the execution of the return statement, the execution of the algo is fully completed. No further statement will be executed.

Example 3: On Return Statement

```
testReturn(y) {
    if (y > 5)
        return y
    if y = 20
        return (y+10)
    return (y+20)
    return (y+30)
    return (y+40)
}
```
simple algorithm

What is/are the value/values returned by the following algorithm when y is 20?
We need to execute the algorithm to find the value.

The execution is as follows:

First, as y = 20 > 5, the return statement is executed and return the current y value 20. After the execution of the return statement, the execution of the algo is fully completed. No further statement will be executed.

Example 4: On Return Statement

```
testReturn(y) {
  if (y > 5)
    return y
  if y = 20
    return (y+10)
  return (y+20)
  return (y+30)
  return (y+40)
}

    simple algorithm
```

What is/are the value/values returned by the following algorithm when y is 3?
We need to execute the algorithm to find the value.

The execution is as follows:

First, the first statement is executed, as y = 3 Not > 5, the first return statement is not executed.

Next, the second statement is executed, as y = 3 Not = 20, the second return statement is not executed.

Next, the third return statement is executed and return the value y+20 = 3+20 =23. After the execution of the return statement, the execution of the algo is fully completed. No further statement will be executed.