



Answers to Chapter 12 questions

Activity 12.1

a JavaScript – 0, Python – 0

b JavaScript

```
const NoStudents = 30;
var StudentMarkTest = new Array (NoStudents + 1);
```

Python

```
import array
ConstNoStudents = int(30)
StudentMarkTest = array.array ("i", range(ConstNoStudents + 1))
```

c JavaScript – no

Python – yes but only for numbers, need to use lists for strings

d See part b

Activity 12.2

JavaScript

```
const NoStudents = 30;
var StudentName = new Array (NoStudents + 1);
var StudentGender = new Array (NoStudents + 1);
var MarkTest1 = new Array (NoStudents + 1);
var MarkTest2 = new Array (NoStudents + 1);
```

Python

```
import array
ConstNoStudents = int(30)
StudentMarkTest1 = array.array ("i", range(ConstNoStudents + 1))
StudentMarkTest2 = array.array ("i", range(ConstNoStudents + 1))
```

Use of lists for name and gender

```
StudentName[]
StudentGender[]
```

Activity 12.3

JavaScript

```
StudentGender[Counter] = window.prompt('Enter Student Gender ', '');
while ((StudentGender[Counter] != 'M') && (StudentGender[Counter]
!= 'F'))
{
    StudentGender[Counter] = window.prompt('Enter Student Gender
M or F ', '')
}
StudentMarkTest1[Counter] = window.prompt('Enter Student Mark for
Test 1 ', '');
StudentMarkTest1[Counter] = parseInt(StudentMarkTest1[Counter]);
while ((StudentMarkTest1 [Counter] < 0) || (StudentMarkTest1
[Counter] > 50))
{
    StudentMarkTest1[Counter] = window.prompt('Enter Student Mark
for Test 1 ', '');
    StudentMarkTest1[Counter] = parseInt(StudentMarkTest1[Count
er]);
}
StudentMarkTest2[Counter] = window.prompt('Enter Student Mark for
Test 2 ', '');
```

```

StudentMarkTest2[Counter] = parseInt(StudentMarkTest2[Counter]);
    while ((StudentMarkTest2 [Counter] < 0) || (StudentMarkTest2
[Counter] > 100))
    {
        StudentMarkTest2[Counter] = window.prompt('Enter Student Mark
for Test 2 ', '');
        StudentMarkTest2[Counter] = parseInt(StudentMarkTest1[Count
er]);
    }

```

Python

```

StudentGender.append (input("Please Enter Student Gender "))
while StudentGender[Counter] != "M" and StudentGender[Counter]
!= "F":
    StudentGender[Counter] = (input("Please Enter Student Gender
M or F"))
StudentMarkTest1[Counter] = int(input("Please Enter Mark for Test 1 "))
while StudentMarkTest1[Counter] < 0 or StudentMarkTest1[Counter]
> 50:
    StudentMarkTest1[Counter] = int(input("Please Enter Mark for
Test 1 "))
StudentMarkTest2[Counter] = int(input("Please Enter Mark for Test 2
"))
    StudentMarkTest2[Counter] < 0 or StudentMarkTest2[Counter] >
100:
    [Counter] = int(input("Please Enter Mark for Test 1 "))

```

Activity 12.4

a–c JavaScript

```

var HighestMarkTest1 = 0;
var HighestIndexTest1 = 0;
var HighestMarkTest2 = 0;
var HighestIndexTest2 = 0;
var LowestMarkTest1 = 50;
var LowestIndexTest1 = 0;
var lowestMarkTest2 = 100;
var LowestIndexTest2 = 0;
var TotalTest1 = 0;
var TotalTest2 = 0;
var AverageTest1 = 0;
var AverageTest2 = 0;
for (var Counter = 1; Counter <= NoStudents; Counter = Counter + 1)
{
    TotalTest1 = TotalTest1 + StudentMarkTest1[Counter]
    TotalTest2 = TotalTest2 + StudentMarkTest2[Counter]
    if (StudentMarkTest1[Counter] > HighestMarkTest1)
    {
        HighestMarkTest1 = StudentMarkTest1[Counter];
        HighestIndexTest1 = Counter;
    }
    if (StudentMarkTest1[Counter] < LowestMarkTest1)
    {
        lowestMarkTest1 = StudentMarkTest1[Counter];
        LowestIndexTest1 = Counter;
    }
    if (StudentMarkTest2[Counter] > HighestMarkTest2)
    {
        HighestMarkTest2 = StudentMarkTest2[Counter];
    }
}

```

```

        HighestIndexTest2 = Counter;
    }
    if (StudentMarkTest2[Counter] < LowestMarkTest2)
    {
        lowestMarkTest2 = StudentMarkTest2[Counter];
        LowestIndexTest2 = Counter;
    }
}
AverageTest1 = AverageTest1 / NoStudents;
AverageTest2 = AverageTest2 / NoStudents`

```

Python

```

HighestMarkTest1 = int(0)
HighestIndexTest1 = int(0)
LowestMarkTest1 = int(50)
LowestIndexTest1 = int(100)
TotalTest1 = int(0)
TotalTest2 = int(0)
for Counter in range (1, ConstNoStudents+1):
    TotalTest1 = TotalTest1 + StudentMarkTest1[Counter]
    TotalTest2 = TotalTest2 + StudentMarkTest2[Counter]
    if StudentMarkTest1[Counter] > HighestMarkTest1:
        HighestMarkTest1 = StudentMarkTest1[Counter]
        HighestIndexTest1 = Counter
    if StudentMarkTest1[Counter] < LowestMarkTest1:
        LowestMarkTest1 = StudentMarkTest1[Counter]
        LowestIndexTest1 = Counter
    if StudentMarkTest2[Counter] > HighestMarkTest2:

```

```

        HighestMarkTest2 = StudentMarkTest1[Counter]
        HighestIndexTest2 = Counter
    if StudentMarkTest2[Counter] < LowestMarkTest2:
        LowestMarkTest2 = StudentMarkTest1[Counter]
        LowestIndexTest2 = Counter
AverageTest1 = TotalTest1 / ConstNoStudents
AverageTest2 = TotalTest2 / ConstNoStudents

```

d JavaScript

```

var Male = 0;
for (var Counter = 1; Counter <= NoStudents; Counter = Counter + 1)
{
    if (StudentGender[Counter] = 'M')
    {
        Male = Male + 1
    }
}
Female = NoStudents - Male

```

Python

```

Male = int(0)
for Counter in range (1, ConstNoStudents+1):
    if StudentGender[Counter] = "M":
        Male = Male + 1
Female = ConstNoStudents - Male

```