Lab 04: Declaring an Array

In this exercise, we are to create a console application that declares some arrays. These arrays will store values that we put, and then displaying these values on screen through a loop technique.

```
C:\WINDOWS\system32\cmd.exe

120, Mark, 45
231, John, 60
321, Alex, 28
323, Rob, 54
123, Bob, 67
543, Mary, 49
432, Eve, 24
634, Joel, 34
907, Dita, 44
148, Liz, 34
```

Declaring and Initialising an Array

Begin the code with declaring array variables to store the values. An array variable declaration is achieved by adding a postfix *[ ]* to the variable type, e.g *int[ ] ai_StaffID*. Every array variable must be initialised before use. Initialisation can be done using either of the two common ways:

- Initialise with default values using *new* keyword, specifying the array size.
  int[ ] ai_StaffID = new int[10];
- Initialise by storing values upon declaration. Size of the array is determined by the number of values stored at this point.
  int[ ] ai_Age = {45, 60, 28, 54, 67, 49, 24, 34, 44, 34};

```
//Declare an array variable by adding []
//Upon declaration, it contains nothing and needs to be initialised
//Initialise an array variable using "new" keyword, and specify the size or values
//In this code, a size of 10 is used
int[] ai_StaffID = new int[10];
string[] as_Name = new string[10];


//An array can also be initialised by specifying its values upon declaration
//The size of array is defined by the number of items speficied during initialisation
//In this case, array ai_Age is of size 10, with 10 values
int[] ai_Age = {45, 60, 28, 54, 67, 49, 24, 34, 44, 34};
```

Accessing values in an array

Values stored in an array can be accessed by specifying its index number, which starts from index zero.

```
//Values can be added to an array's slot, by specifying its index
//Both arrays above have 10 slots. Index starts from 0 to 9
ai_StaffID[0] = 120;
ai_StaffID[1] = 231;
ai_StaffID[2] = 321;
ai_StaffID[3] = 323;
ai_StaffID[4] = 123;
ai_StaffID[5] = 543;
ai_StaffID[6] = 432;
ai_StaffID[7] = 634;
ai_StaffID[8] = 907;
ai_StaffID[9] = 148;

as_Name[0] = "Mark";
as_Name[1] = "John";
as_Name[2] = "Alex";
as_Name[3] = "Rob";
as_Name[4] = "Bob";
as_Name[5] = "Mary";
as_Name[6] = "Eve";
as_Name[7] = "Joel";
as_Name[8] = "Dita";
as_Name[9] = "Liz";
```

Displaying array values on screen
We can write the codes this way.

```
//To write the values into screen, we can use FOR loop, increament on its index
for (int i_Count = 0; i_Count <= 9; i_Count++)
{
    Console.WriteLine(ai_StaffID[i_Count]  + ", " + as_Name[i_Count] + ", " + ai_Age[i_Count]);
}
```

Full codes

```csharp
class Program
{
    0 references
    static void Main(string[] args)
    {
        //Declare an array variable by adding []
        //Upon declaration, it contains nothing and needs to be initialised
        //Initialise an array variable using "new" keyword, and specify the size or values
        //In this code, a size of 10 is used
        int[] ai_StaffID = new int[10];
        string[] as_Name = new string[10];


        //An array can also be initialised by specifying its values upon declaration
        //The size of array is defined by the number of items speficied during initialisation
        //In this case, array ai_Age is of size 10, with 10 values
        int[] ai_Age = {45, 60, 28, 54, 67, 49, 24, 34, 44, 34};

        //Values can be added to an array's slot, by specifying its index
        //Both arrays above have 10 slots. Index starts from 0 to 9
        ai_StaffID[0] = 120;
        ai_StaffID[1] = 231;
        ai_StaffID[2] = 321;
        ai_StaffID[3] = 323;
        ai_StaffID[4] = 123;
        ai_StaffID[5] = 543;
        ai_StaffID[6] = 432;
        ai_StaffID[7] = 634;
        ai_StaffID[8] = 907;
        ai_StaffID[9] = 148;

        as_Name[0] = "Mark";
        as_Name[1] = "John";
        as_Name[2] = "Alex";
        as_Name[3] = "Rob";
        as_Name[4] = "Bob";
        as_Name[5] = "Mary";
        as_Name[6] = "Eve";
        as_Name[7] = "Joel";
        as_Name[8] = "Dita";
        as_Name[9] = "Liz";


        //To write the values into screen, we can use FOR loop, increament on its index
        for (int i_Count = 0; i_Count <= 9; i_Count++)
        {
            Console.WriteLine(ai_StaffID[i_Count]  + ", " + as_Name[i_Count] + ", " + ai_Age[i_Count]);
        }
    }
}
```