	M3 – Programación
	UF1: Programación Estructurada
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Práctica: 18	

1- Array (dimensionar e inicializar): Declara un array con los valores iniciales: 7, 12, 13, 16, 18.
-Haz un método para visualizarlo.

```
package uf1p18;

import java.util.Arrays;
import java.util.Scanner;

public class UF1P18 {

   static Scanner keyboard = new Scanner(System.in);

   public static void main(String[] args) {
      //Declaraciones Globales
      int option = -1;
      do{
      userMenu();
      option = keyboard.nextInt();
      switch(option){//inicio switch
         case 1:
         int [] arrayNumber = new int []{7, 12, 13, 16, 18};
         viewArrayInt(arrayNumber);
            break;
   private static void userMenu() {
      System.out.println("");
      System.out.println("Author: Daniel Reyes Santiago");
      System.out.println("Opción 1 - (dimensionar e inicializar): ");
      System.out.println("Opción 2 - (dimensionar e dar valores posteriormente): ");
      System.out.println("Opción 3 - (dimensionar y dar valores posteriormente, uno por uno): ");
      System.out.println("Opción 4 - (declarar un array y posteriormente dimensionar y dar valores): ");
      System.out.println("Opción 5 - (2 arrays): ");
      System.out.println("Opción 6 - (procesar arrays): ");
      System.out.println("Opción 7 - (una función): ");
      System.out.println("Opción 8 - (una función): ");
      System.out.println("Opción 9 - (invención): ");
      System.out.println("Opción 10 - (salir): ");
      System.out.print("\nOpción?: ");
   }
   private static void viewArrayInt(int[] arrayNumber) {
      for(int i=0 ; i<arrayNumber.length ; i++){
      System.out.println("Array[" + (i+1) + "]:" + arrayNumber[i]);
      }
      System.out.println(Arrays.toString(arrayNumber));
   }
```

```
Opción?: 1
Array[1]:7
Array[2]:12
Array[3]:13
Array[4]:16
Array[5]:18
[7, 12, 13, 16, 18]

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```

2- Array (dimensionar y dar valores posteriormente): Declara un array de 4 valores con el nombre arrayIVA y en después dale valores: 0, 4, 10, 21.
-Escribe un método para visualizarla.

```
        case 2:
        int [] arrayIva;
        arrayIva = new int []{0, 4, 10, 21};
        viewArrayInt(arrayIva);
           break;
  private static void viewArrayInt(int[] arrayNumber) {
     for(int i=0 ; i<arrayNumber.length ; i++){
     System.out.println("Array[" + (i+1) + "]:" + arrayNumber[i]);
     }
     System.out.println(Arrays.toString(arrayNumber));
  }
```

```
Opción?: 2
Array[1]:0
Array[2]:4
Array[3]:10
Array[4]:21
[0, 4, 10, 21]

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```

3- Array (dimensionar y dar valores posteriormente, uno por uno): Declara un array de 4 valores con el nombre arrayIVA y después dale valores: 0, 4, 10, 21. -Escribe un método para visualizarla.

```
        case 3:
        int [] arrayIva2 = new int [4];
        arrayIva2 [0] = 0;
        arrayIva2 [1] = 4;
        arrayIva2 [2] = 10;
        arrayIva2 [3] = 21;
        viewArrayInt(arrayIva2);
           break;
  private static void viewArrayInt(int[] arrayNumber) {
     for(int i=0 ; i<arrayNumber.length ; i++){
     System.out.println("Array[" + (i+1) + "]:" + arrayNumber[i]);
     }
     System.out.println(Arrays.toString(arrayNumber));
  }
```

```
Opción?: 3
Array[1]:0
Array[2]:4
Array[3]:10
Array[4]:21
[0, 4, 10, 21]

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```

4- Array (declarar un array y posteriormente dimensionar y dar valores): -
Declara un array para guardar el precio de N productos:
-Pregunta el número de productos y dimensiona el array
-Pregunta los precios y rellena el array
-Escribe un método para visualizarla.

```
        case 4:
            System.out.print("What's the dimension of the array?: ");
            int dimension = keyboard.nextInt();

            int [] arrayPrices = new int [dimension];
            for(int i=0 ; i<arrayPrices.length ; i++){
                System.out.print("What's the price of the product " + (i+1) +"?: ");
                int prices = keyboard.nextInt();
                arrayPrices[i] = prices;
            }
            viewArrayInt(arrayPrices);
            break;
    private static void viewArrayInt(int[] arrayNumber) {
        for(int i=0 ; i<arrayNumber.length ; i++){
        System.out.println("Array[" + (i+1) + "]:" + arrayNumber[i]);
        }
        System.out.println(Arrays.toString(arrayNumber));
    }
```

```
Opción?: 4
What's the dimension of the array?: 5
What's the price of the product 1?: 83
What's the price of the product 2?: 13
What's the price of the product 3?: 71
What's the price of the product 4?: 4
What's the price of the product 5?: 81
Array[1]:83
Array[2]:13
Array[3]:71
Array[4]:4
Array[5]:81
[83, 13, 71, 4, 81]

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```

5- Dos Arrays: -Declara un array para guardar la altura de los alumnos de clase y otro para guardar los nombres:
-Pregunta el número de alumnos y dimensiona los arrays.
-Pregunta las alturas y el nombre de cada uno y rellena los arrays.
-Escribe un método para visualizarlos.

```
        case 5:
            System.out.print("How many students are in the class?: ");
            int numStud = keyboard.nextInt();
            String [] arrayStudentsName = new String [numStud];
            float [] arrayStudentsSize = new float [numStud];
            for(int i=0 ; i<arrayStudentsName.length ; i++){
               System.out.print("What's the name of the student [" + (i+1) + "]: ");
               arrayStudentsName [i] = keyboard.next();
               System.out.print("What's her/his size?: ");
               arrayStudentsSize [i] = keyboard.nextFloat();
            }
            viewStudent(arrayStudentsName, arrayStudentsSize);
            break;
private static void viewStudent(String[] arrayStudentsName, float[] arrayStudentsSize) {
      for(int i=0 ; i<arrayStudentsName.length ; i++){
      System.out.println("Student [" + (i+1) + "]:" + arrayStudentsName[i] + "\t" + "Size [" + (i+1) +
"]: " + arrayStudentsSize[i] + "m");
      }
   }
```

```
Opción?: 5
How many students are in the class?: 3
What's the name of the student [1]: Daniel
What's her/his size?: 1,80
What's the name of the student [2]: Victor
What's her/his size?: 2,03
What's the name of the student [3]: Alberto
What's her/his size?: 1,90
Student [1]:Daniel      Size [1]: 1.8m
Student [2]:Victor      Size [2]: 2.03m
Student [3]:Alberto     Size [3]: 1.9m

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```

6- Procesar Arrays:
-Declara un array para guardar la altura de los alumnos de clase y otro para guardar los nombres.
-Pregunta el número de alumnos y dimensiona los arrays.
-Pregunta las alturas y el nombre de cada uno y rellena los arrays.
-Di el nombre de la persona más alta.
-Di el nombre de la persona más baja.
-Di la media de las alturas.
-Di el nombre de los que supera la media.
-Escribe un método para visualizarlos.

```
            System.out.print("How many students are in the class?: ");
            numStud = keyboard.nextInt();
            arrayStudentsName = new String [numStud];
            arrayStudentsSize = new float [numStud];
            float sizeAverage = 0;
            for(int i=0 ; i<arrayStudentsName.length ; i++){
               System.out.print("What's the name of the student [" + (i+1) + "]: ");
               arrayStudentsName [i] = keyboard.next();
               System.out.print("What's her/his size?: ");
               arrayStudentsSize [i] = keyboard.nextFloat();
               sizeAverage += arrayStudentsSize[i];
            }
            sizeAverage = sizeAverage/numStud;
            viewStudents(arrayStudentsName, arrayStudentsSize, sizeAverage);
            break;
   private static void viewStudents(String[] arrayStudentsName, float[] arrayStudentsSize, float
sizeAverage) {
      System.out.println("The average of all the students is " + sizeAverage + "m");
      for(int i=0 ; i<arrayStudentsName.length ; i++){
         if(arrayStudentsSize[i]>sizeAverage){
            System.out.println("The student " + arrayStudentsName[i] + " pass the average of the size of all
the students with a " + arrayStudentsSize[i] + "m");
         }
      }
   }
```

```
Opción?: 6
How many students are in the class?: 3
What's the name of the student [1]: Daniel
What's her/his size?: 1,80
What's the name of the student [2]: Victor
What's her/his size?: 2,03
What's the name of the student [3]: Alberto
What's her/his size?: 1,90
The average of all the students is 1.91m
The student Victor pass the average of the size of all the students with a 2.03m

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7- (una función) Array de días de la semana:
- Pedir un número y di que día de la semana se trata.

```
        case 7:
            System.out.print("Write the number of the day you want to know?: ");
            int dayNumb = keyboard.nextInt();
            String [] arrayDaysOfWeek = new String [] {"Monday", "Tuesday", "Wednesday",
"Thursday", "Friday", "Saturday", "Sunday"};
            System.out.println("The number " + dayNumb + " is a " + arrayDaysOfWeek[dayNumb]);
            break;
```

```
Opción?: 7
Write the number of the day you want to know?: 5
The number 5 is a Saturday

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```

8- (una función) Array de DNI:
-Pedir el DNI y di la letra.

```
case 8:
            System.out.print("Can you tell me your DNI withput the letter?: ");
            int dni = keyboard.nextInt();
            char letter = functionDNI(dni);
            System.out.println("Your DNI is " + dni + letter);
            break;
private static char functionDNI(int dni) {
      char letter = ' ';
      String stringDNI = "TRWAGMYFPDXBNJZSQVHLCKE";
      int res = dni%23;
      letter = stringDNI.charAt(res);
      return letter;
   }
   }
```

```
Opción?: 8
Can you tell me your DNI withput the letter?: 12345678
Your DNI is 12345678Z

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9-Inventa un caso para array.

```
        case 9:
            System.out.print("How many players have the team of basketball?: ");
            int numbPlayers = keyboard.nextInt();
            int [] arrayPoints = new int [numbPlayers];
            String [] arrayNames = new String [numbPlayers];
            float average = 0;
            int totalPoints = 0;
            for(int i=0 ; i<arrayPoints.length ; i++){
                System.out.print("What's your name?: ");
                arrayNames [i] = keyboard.next();
                System.out.print("How many points did you score in the last game?: ");
                arrayPoints [i] = keyboard.nextInt();
                average += arrayPoints [i];
                totalPoints += arrayPoints [i];
            }
            average = average/numbPlayers;
            System.out.println("The total score in the last game is " + totalPoints + " points");
            System.out.println("The average of all the points in the last game are " + average + " points");
            for(int i=0 ; i<arrayPoints.length ; i++){
                if(arrayPoints[i]>average){
                    System.out.println("The player " + arrayNames[i] + " pass the average of the points of all
the players with a score of " + arrayPoints[i] + " points");
                }
                if(arrayPoints[i]<average){
                    System.out.println("The player " + arrayNames[i] + " didn't pass the average of the points
of all the players with a score of " + arrayPoints[i] + " points");
                }
            }
            break;
```

```
Opción?: 9
How many players have the team of basketball?: 3
What's your name?: Daniel
How many points did you score in the last game?: 26
What's your name?: Victor
How many points did you score in the last game?: 50
What's your name?: Alberto
How many points did you score in the last game?: 10
The total score in the last game is 86 points
The average of all the points in the last game are 28.666666 points
The player Daniel didn't pass the average of the points of all the players with a score of 26 points
The player Victor pass the average of the points of all the players with a score of 50 points
The player Alberto didn't pass the average of the points of all the players with a score of 10 points

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```

10-salir: pregunta si está seguro o no.

```
case 10: p10();
            break;
         default: System.out.println("Opción no valida");
      }//Fin de switch
      }while(option !=10);//Fin de while
   }//FIN DE MAIN
   private static void p10 (){
      System.out.print("Are you sure you want to exit?(Yes/No): ");
      String answer = keyboard.next();
      if(answer.equals("Yes")){
         System.out.println("Thanks for using this programm. Goodbye!");
      }
   }
```

```
Opción?: 10
Are you sure you want to exit?(Yes/No): Yes
Thanks for using this programm. Goodbye!
BUILD SUCCESSFUL (total time: 19 minutes 15 seconds)
```