Helwan University- CS Department – PL1(CS112)

2017-2018

Arrays

1. Write C program that calculates the maximum, the minimum and the average of 10 numbers entered by the user and stored in an array.
2. Write C program that take 10 characters from the user, and then search for the position of the character z.
3. Write C program that reads 10 integer numbers from the user then the program should calculates the sum of odd numbers and the sum of even numbers.
4. Write a program that asks the user to type 10 integers of an array. The program will then display either "the array is growing", "the array is decreasing", "the array is constant", or "the array is growing and decreasing."
5. Write a program to read a matrix (3x4) and ask the user to choose a number and then display the position of the selected number if found, otherwise display "number not found"
6. Write a program to read a matrix from a user, and then display the row with maximum total.
7. By using two-dimensional array, write C program to display a matrix as shown below:

   ```
   0   1   1   1   1
   -   0   1   1   1

   -   -   0   1   1

   -   -   -   0   1

   -   -   -   -   0
   ```

8. By using two-dimensional array, write C program to display a table that represents a Pascal triangle of any size. In Pascal triangle, the first and the second rows are set to 1. Each element of the triangle (from the third row downward) is the sum of the element directly above it and the element to the left of the element directly above it. ***See the example Pascal triangle(size=5) below:***

   ```
   1
   1   1
   1   2   1
   1   3   3   1
   1   4   6   4   1
   ```