IB Programme

CS Assignment

Intro to pseudocode – set 02

1. Write an algorithm that given the arrays NAMES[100], GENDER[100] and WEIGHT[100], prints:
    a. How many persons have weight below 60.
    b. The maximum weight of females
    c. The names of the males that have weight above the average weight of males.
2. Given the arrays of integers A[100] and B[100], copy their values to the array C[200] in such way that first array A is copied and then array B in the remaining positions.
3. Given the arrays ID[100], LAT[100] and LON[100], write a program that prompts user to enter an id. The algorithm has to output the latitude and the longitude of the specific id, if this is found in the array.
4. Given the array of integers A[100], write an algorithm that outputs the highest and the second highest value of it.
5. Given the array of integers B[200], write an algorithm that prompts user to enter the numbers of two cells and outputs the sum of the array between these cells. For example, if users enters 5 and 100 it has to sum the content of the cells between cells 5 and 100. Thus A[6] + A[7] + … + A[99]
6. Write an algorithm that given an array A[100] containing unique values, write an algorithm that checks if values are in an ascending order and prints an appropriate message.
7. Write an algorithm that given an array A[100] containing only 0 and 1, reconstructs the array in such way that 0s are in the first positions of the array and 1s in the last positions.
8. Write an algorithm that given two arrays A[100] and B[100] checks if all the elements of the first array are equal with the one in the same positions in second array.
9. Construct the trace table of the following algorithm:

```
A = 10
B = 9
S = 0
Loop while B > 0
        if B mod 2  = 1 then
                S = S + A
        End if
        A = A * 2
        B = B div 2
End loop
```

10. Construct the trace table of the following algorithm:

```
X = (6, 5, 4, 3, 2, 1 ) // initialize an array with certain values
a = 0
loop while a < X[a]
        X[X[a]] = X[a]
        a = a + 1
end loop
```