ESC101 : Fundamental of Computing

Lab 9 for 20 October 2008

Maximum Marks = 10

1. (marks = 3) Create an array with enteries randomly selected from range 0 to 99. The length of the array should be read from command line. Print the array on the monitor. Now sort the array in decreasing order and print the sorted array on the monitor.

2. (marks = 2) Create an array A with enteries randomly selected from range 0 to 10000. The length of array A is provided from command line. Print the array on the monitor. We say that there is a local minima at index i, if $A[i]$ is less than $A[i-1]$ as well as $A[i+1]$. Print

   (a) indices of all local minima

   (b) the total count of all the local minima.

3. (marks = 5) Create an array B whose length is read from command line and then fill its entries with 0 and 1 randomly. Create an array A of size 5 and fill its entries with 0 and 1 randomly. We say that array A matches B at location i if

   $$A[0] = B[i],\ A[1] = B[i+1],\ A[2] = B[i+2],\ A[3] = B[i+3],\ A[4] = B[i+4]$$

   Print all indices i of B, where A gets matched. Execute your program for various size of array B to find the *approximate* length of B for which there is at least one match of A ?