Maximum length of longest decreasing subsequence

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#include <stdio.h>
#include <stdlib.h>

int LongestDecreasingSubsequence(int *arr, int size)
{
        int *lds, i, j, maxLen = 0;
        lds = (int *)malloc(sizeof(int) * size);

        for(i = 0; i < size; i++)
                lds[i] = 1;

        for (i = size-2; i >= 0; i--)
     for (j = size-1; j > i; j--)
       if (arr[i] > arr[j] && lds[i] < lds[j] + 1)
        lds[i] = lds[j] + 1;

   for (i = 0; i < size; i++ )
      if (maxLen < lds[i])
        maxLen = lds[i];
   free(lds);
   return maxLen;
}

int main()
{
        int *arr, size;
        printf("Enter size of the array\n");
        scanf("%d", &size);

        //allocate memory
        arr = (int *)malloc(sizeof(int) * size);

        printf("Enter elements in array\n");
        for(int index = 0; index < size; index++)
                scanf("%d", &arr[index]);

        printf("Length of longest decreasing sub sequence is = %d",
                LongestDecreasingSubsequence(arr, size));

        return 0;
}
```

Time complexity: $O(n^2)$
Space complexity: O(n)