PROBLEMS

# 1.

Write a function that for an array of N integers will find the start and length of the largest increasing subarray.

# 2.

Write a program that the input array \[ \] will transform into the output array: \[ \] on the following way: \[ \]

SOLUTIONS

# 1.

*/\*Write a function that for an array of N integers will find the start and length of the largest increasing subarray.\*/*#include **<stdio.h>**#include **<ctype.h>**#include **<string.h>  
  
void** findIncSubArray(**int** a[], **int** n, **int** \*start, **int** \*maxLength){  
 **int** i,j;  
 \*start=0;  
 \*maxLength=0;  
 **for**(i=0 ; i<n ; i++){  
 **for**(j=i ; j<n-1 ; j++){  
 **if**(a[j]>a[j+1]){  
 **break**;  
 }  
 }  
 **int** len=j-i+1;  
 **if**(len>\*maxLength){  
 \*maxLength=len;  
 \*start=i;  
 }  
 i=j;  
 }  
}  
  
**int** main(){  
 **int** n;  
 scanf(**"%d"**,&n);  
 **int** a[100];  
 **for**(**int** i=0 ; i<n ; i++){  
 scanf(**"%d"**,&a[i]);  
 }  
 **int** start,length;  
 findIncSubArray(a,n,&start,&length);  
 printf(**"Start position: %d\nEnd position: %d\nLength: %d"**,start,length+start-1,length);  
 **return** 0;  
}

# 2.

*/\*Write a program that the input array \[ a\_0,a\_1,…a\_(n-1) \] will transform into the output array:  
\[ b\_0,b\_1,…b\_(n-1)\] on the following way: \[ b\_0 = a\_0 + a\_(n-1), b\_1 = a\_1 + a\_(n-2),…,b\_(n-1) = a\_(n-1) + a\_0 \]\*/*#include **<stdio.h>**#include **<ctype.h>**#include **<string.h>  
  
void** transform(**int** \*a, **int** n){  
 **for**(**int** i=0, j=n-1 ; i<=j ; i++, j--){  
 \*(a+i)+=\*(a+j);  
 \*(a+j)=\*(a+i);  
 }  
}  
  
**int** main(){  
 **int** n;  
 scanf(**"%d"**,&n);  
 **int** array[100];  
 **for**(**int** i=0 ; i<n ; i++){  
 scanf(**"%d"**,array+i);  
 }  
 transform(array,n);  
 **for**(**int** i=0 ; i<n ; i++){  
 printf(**"%d "**,\*(array+i));  
 }  
 **return** 0;  
}

POINTERS EXAMPLES

# 3.

#include**<stdio.h>  
  
void** swap (**int** \* a, **int** \* b){  
 **int** tmp = \*a;  
 \*a = \*b;  
 \*b = tmp;  
}  
  
**int** main () {  
 **int** a = 5, b = 6;  
  
 swap(&a,&b);  
  
 printf(**"%d %d"**, a, b);  
 **return** 0;  
}

# 4.

#include**<stdio.h>  
  
void** calculate(**int** \*array, **int** n, **int** \*min, **int** \*max) {  
 \*min = \*array;  
 \*max = \*array;  
 **for** (**int** i = 1; i < n; i++) {  
 **if** (\*(array + i) < \*min) {  
 \*min = \*(array + i);  
 }  
 **if** (\*(array + i) > \*max) {  
 \*max = \*(array + i);  
 }  
 }  
}  
  
**int** main() {  
 **int** array[100];  
 **int** n;  
 scanf(**"%d"**, &n);  
  
 **for** (**int** i = 0; i < n; i++) {  
 scanf(**"%d"**, array + i);  
 }  
  
 **int** min, max;  
  
 calculate(array, n, &min, &max);  
  
 printf(**"%d %d"**, min, max);  
  
 **return** 0;  
}