#include<stdio.h>

#include<unistd.h>

#include<sys/types.h>

#include<sys/wait.h>

void bubbleSort(int arr[],int n){

for (int i = 0; i < n - 1; i++)

for (int j = 0; j < n - i - 1; j++)

if (arr[j] > arr[j + 1]){

int temp = arr[j];

arr[j] = arr[j+1];

arr[j+1] = temp;

}

printf("\nSorted array by Bubble sort in child process = ");

for(int i = 0;i<n;i++){

printf("%d ",arr[i]);

}

printf("\n");

}

void selectionSort(int arr[], int n){

int min\_idx;

for (int i = 0; i < n-1; i++){

min\_idx = i;

for (int j = i+1; j < n; j++)

if (arr[j] < arr[min\_idx])

min\_idx = j;

if(min\_idx!=i){

int temp = arr[min\_idx];

arr[min\_idx] = arr[i];

arr[i] = temp;

}

}

printf("\nSorted array by Selection sort in parent process = ");

for(int i = 0;i<n;i++){

printf("%d ",arr[i]);

}

printf("\n");

}

int main(){

pid\_t pid;

int n;

printf("Enter the number of Elements = ");

scanf("%d",&n);

int arr[n];

printf("Enter the array = ");

for(int i = 0;i<n;i++) scanf("%d",&arr[i]);

pid = fork();

if(pid==0){

printf("\n\*\*\*\*\*\* CHILD PROCESS \*\*\*\*\*\*\*\*\n");

printf("\nIt is child process with pid = %d and ppid = %d \n",getpid(),getppid());

bubbleSort(arr,n);

printf("\n \*\*\*\*\* CHILD PROCESS TERMINATED \*\*\*\*\*");

}

else{

wait(NULL);

printf("\n\n\n\*\*\*\*\*\* Parent PROCESS \*\*\*\*\*\*\*\*\n");

printf("\nIt is parent process with pid = %d and ppid = %d \n",getpid(),getppid());

selectionSort(arr,n);

printf("\n \*\*\*\*\* PARENT PROCESS TERMINATED \*\*\*\*\*");

}

}