ASSIGNMENT 3

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Write an embedded C program for sorting the numbers in ascending or descending orders Consider any 2-sorting algorithms for menu driven program.

(Bubble sort, Selection sort, Insertion sort, Quick sort, etc)

```
Solution: -

/*

* File: sort.c

* Author: shubham

*

*/

/

#include <xc.h>
#include<stdio.h>
#include<pic18f4550.h>

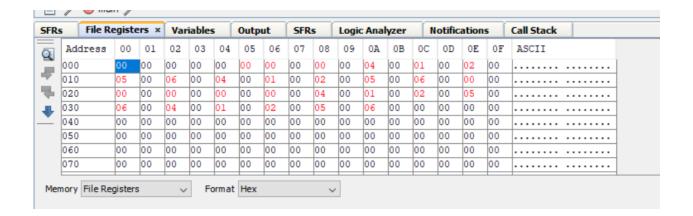
void swap(int *xp, int *yp)
{
```

```
int temp = *xp;
  *xp = *yp;
  *yp = temp;
}
void main(void) {
  int arr_des[]={0x4,0x1,0x2,0x5,0x6};
  int arr_asc[]={0x4,0x1,0x2,0x5,0x6};
  TRISB=0;
  TRISC=0;
  int chType;
//1 = bubble
// 2 = selection
  TRISA=1;
  chType=PORTA;
  if(chType==1){
    for(int i=0;i<5;i++){
      for(int j=i;j<5;j++){
         if(arr_des[j]>arr_des[i])
         {
           int temp=arr_des[j];
```

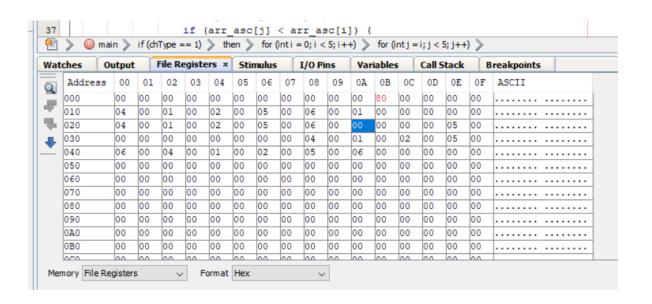
```
arr_des[j]=arr_des[i];
          arr_des[i]=temp;
       }
     }
  }
  for(int i=0;i<5;i++){
     for(int j=i;j<5;j++){
       if(arr_asc[j]<arr_asc[i])</pre>
       {
          int temp=arr_asc[j];
          arr_asc[j]=arr_asc[i];
          arr_asc[i]=temp;
       }
     }
  }
}
else if(chType==2){
int i,j,min_idx,n=5;
for (i = 0; i < n-1; i++)
{
  min_idx = i;
```

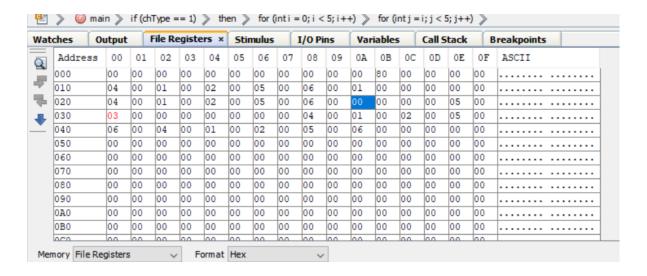
```
for (j = i+1; j < n; j++)
    if (arr_des[j] < arr_des[min_idx])</pre>
       min_idx = j;
    swap(&arr_des[min_idx], &arr_des[i]);
  }
  }
  for(int r=0;r<5;r++)
  {
    PORTB=arr_des[r];
    PORTC=arr_asc[r];
  }
  return;
Result: -
Before
```

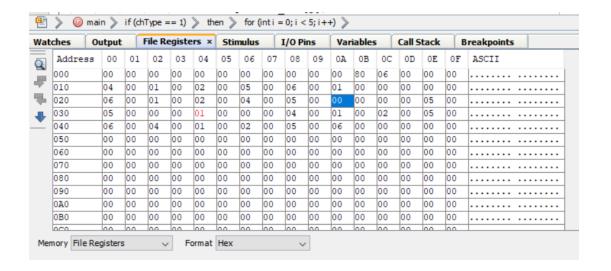
}

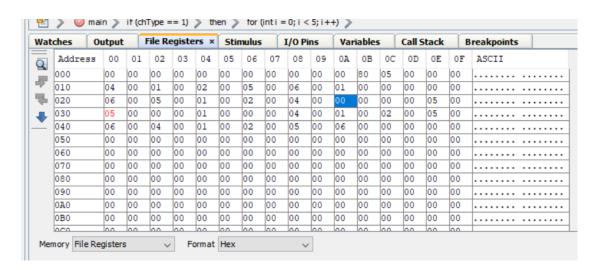


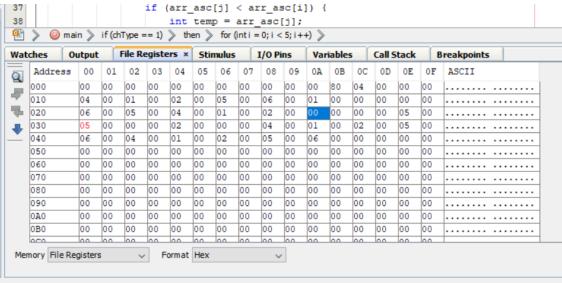
Passes:



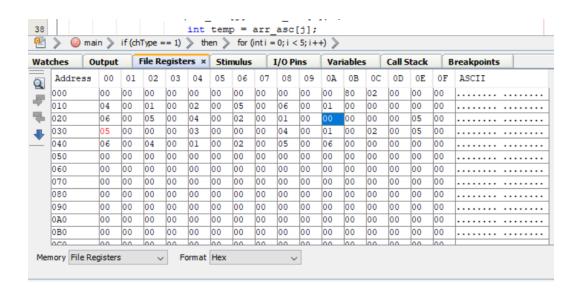


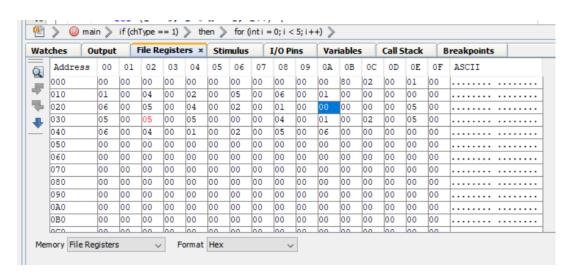


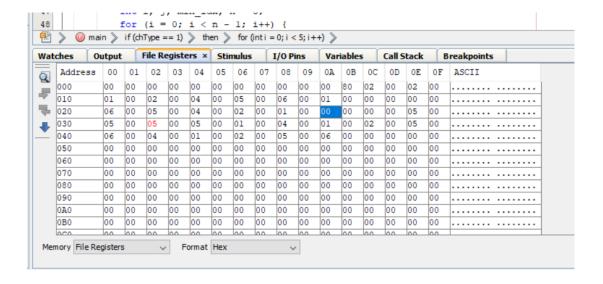


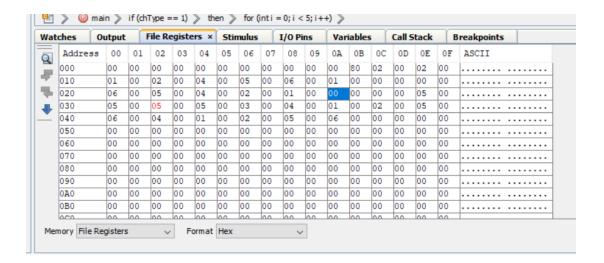


Sorting









After

