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CSE - B

CH.SC.U4CSE24118

Week -2(4/12/2025)

1.Bubble Sort

```c
#include <stdio.h>

void bubble_sort(int* arr,int l){
  for(int i=0;i<l;i++){
    for(int j=0;j<l;j++){
      if(arr[j]>arr[j+1]){
        int t=arr[j];
        arr[j]=arr[i];
        arr[i]=t;
      }
    }
  }
}

int main(){
  int arr[]={11,2,12,3,245,3,4,2,4,5,7,4,567,5,4,44};
  bubble_sort(arr,15);
  printf("Bubble Sorted O(n^2): \n");
  for(int i=0;i<15;i++){
    printf(" %d ",arr[i]);
  }
  printf("\n");
}
```

OUTPUT:

```
amma@amma15:~/Documents/CH.SC.U4CSE24217$ gcc -o bb bubblesort.c
amma@amma15:~/Documents/CH.SC.U4CSE24217$ ./bb
Bubble Sorted O(n^2):
 2  2  3  3  4  4  4  4  5  5  7  11  12  245  567
amma@amma15:~/Documents/CH.SC.U4CSE24217$
```

2.Selection Sort

```c
#include <stdio.h>

void selection_sort(int* arr,int l){
  for(int i=0;i<l;i++){
    int midx=i;
    for(int j=i+1;j<l;j++){
      if(arr[midx]>arr[j]){
        midx=j;
      }
    }
    int t=arr[i];
    arr[i]=arr[midx];
    arr[midx]=t;
  }
}

int main(){
  int arr[]={11,2,12,3,245,3,4,2,4,5,7,4,567,5,4,44};
  selection_sort(arr,15);
  printf("Selection Sorted O(n^2): \n");
  for(int i=0;i<15;i++){
    printf(" %d ",arr[i]);
  }
  printf("\n");
}
```

OUTPUT:

```
amma@amma15:~/Documents/CH.SC.U4CSE24217$ gcc -o ss selectsort.c
amma@amma15:~/Documents/CH.SC.U4CSE24217$ ./ss
Selection Sorted O(n^2):
 2  2  3  3  4  4  4  4  5  5  7  11  12  245  567
amma@amma15:~/Documents/CH.SC.U4CSE24217$
```

3.Insertion Sort

```c
#include <stdio.h>

void inser_sort(int* arr,int l){
  for(int i=0;i<l;i++){
    int key=arr[i];
    int j=i-1;
    while(j>=0 && arr[j]>key){
      arr[j+1]=arr[j];
      j--;
    }
    arr[j+1]=key;
  }
}

int main(){
  int arr[]={11,2,12,3,245,3,4,2,4,5,7,4,567,5,4,44};
  inser_sort(arr,15);
  printf("Insertion Sorted O(n^2): \n");
  for(int i=0;i<15;i++){
    printf(" %d ",arr[i]);
  }
  printf("\n");
}
```

OUTPUT:

```
amma@amma15:~/Documents/CH.SC.U4CSE24217$ gcc -o is inserts.c
amma@amma15:~/Documents/CH.SC.U4CSE24217$ ./is
Insertion Sorted O(n^2):
 2  2  3  3  4  4  4  4  5  5  7  11  12  245  567
amma@amma15:~/Documents/CH.SC.U4CSE24217$
```