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CSE – B

CH.SC.U4CSE24118

Week -2(4/12/2025)

1.Bubble Sort

```
C bubblesort.c > ...
1 #include <stdio.h>
2
3 void bubble_sort(int* arr,int l){
4     for(int i=0;i<l;i++){
5         for(int j=0;j<l;j++){
6             if(arr[j]>arr[j+1]){
7                 int t=arr[j];
8                 arr[j]=arr[i];
9                 arr[i]=t;
10            }
11        }
12    }
13 }
14
15 int main(){
16     int arr[]={11,2,12,3,245,3,4,2,4,5,7,4,567,5,4,44};
17     bubble_sort(arr,15);
18     printf("Bubble Sorted O(n^2): \n");
19     for(int i=0;i<15;i++){
20         printf(" %d ",arr[i]);
21     }
22     printf("\n");
23 }
```

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 selectsort.c > ...
1 #include <stdio.h>
2
3 void selection_sort(int* arr,int l){
4     for(int i=0;i<l;i++){
5         int midx=i;
6         for(int j=i+1;j<l;j++){
7             if(arr[midx]>arr[j]){
8                 midx=j;
9             }
10        }
11        int t=arr[i];
12        arr[i]=arr[midx];
13        arr[midx]=t;
14    }
15 }
16
17 int main(){
18     int arr[]={11,2,12,3,245,3,4,2,4,5,7,4,567,5,4,44};
19     selection_sort(arr,15);
20     printf("Selection Sorted O(n^2): \n");
21     for(int i=0;i<15;i++){
22         printf(" %d ",arr[i]);
23     }
24     printf("\n");
25 }
```

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 inserts.c > ...
1 #include <stdio.h>
2
3 void inser_sort(int* arr,int l){
4     for(int i=0;i<l;i++){
5         int key=arr[i];
6         int j=i-1;
7         while(j>=0 && arr[j]>key){
8             arr[j+1]=arr[j];
9             j--;
10        }
11        arr[j+1]=key;
12    }
13 }
14
15 int main(){
16     int arr[]={11,2,12,3,245,3,4,2,4,5,7,4,567,5,4,44};
17     inser_sort(arr,15);
18     printf("Insertion Sorted O(n^2): \n");
19     for(int i=0;i<15;i++){
20         printf(" %d ",arr[i]);
21     }
22     printf("\n");
23 }
```

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$
```