



COMSATS University Islamabad, Abbottabad Campus

Department of Computer Science

Assignment 1 (CLO 1)

Total Marks = 10

Q: In bubbleSort. program(done in class) write main() so it creates a large array and fills that array with data. You can use the following code to generate random numbers:

```
for(int j=0; j<maxSize; j++) // fill array with
{ // random numbers
long n = (long)( java.lang.Math.random()*(maxSize-1) );
arr.insert(n);
}
```

Try inserting 10,000 items. Display the data before and after the sort. You'll see that scrolling the display takes a long time. Comment out the calls to display () so you can see how long the sort itself takes. The time will vary on different machines. Sorting 100,000 numbers will probably take less than 30 seconds.

Pick an array size that takes about this long and time it. Then use the same array size to time select sort and insertion sort.

Discuss the time taken with proper reasoning of all the mentioned sorting algorithms.