

Lab Sheet 2

Arrays

(NB: Use Object Oriented concepts wherever necessary)

1. Write a program that will read a sequence of positive real numbers entered by the user and will print the same numbers in sorted order from smallest to largest. Assume that at most 25 positive numbers will be entered. *(Use all sorting algorithms)*
2. Suppose that temperature measurements were made on each day of 1999 in each of 100 cities. The measurements have been stored in an array:

```
int temps[100][365];
```

where `temps[c][d]` holds the measurement for city number `c` on the `d`th day of the year. Write a code segment that will print out the average temperature, over the course of the whole year, for each city. The average temperature for a city can be obtained by adding up all 365 measurements for that city and dividing the answer by 365.0.

3. Suppose that a class, `Employee`, is defined as follows:

```
class Employee {  
    String lastName;  
    String firstName;  
    double hourlyWage;  
    int yearsWithCompany;  
}
```

Suppose that data about 20 employees is already stored in an array. Write a program to display the details of employees in highest order of `yearsWithCompany`. *(Use Insertion sort and Quick Sort)*

4. Implement a telephone directory. Directory class is defined as follows:

```
class Directory
```

```

{
    String Firstname;
    String LastName
    int number;
}

```

Suppose that data about 20 users is already stored in an array. Write a program to display the details of a user having a particular first name or last name if available in the directory.()

Bonus Question.

Q: Given a pack of 52 cards. There are two players in the scene. Each player picks up 10 cards. Assume that the 10 cards for each user is the input; help the players to sort and hold the cards in hand by applying at least 3 sorting algorithms of your knowledge. Assuming the following notations.

Symbols. Clubs as C, Spades as S, Diamonds as D and Hearts as H.

King , Queen , Jack and Ace represented as: KC,KS,KD,KH, QC, QS, QD, QH, JC,JS,JD,JH,AC,AS,AD,AH and rest as

2C,2S,2D,2H.....,10C,10H,10D,10H.

Sample input:

Enter the cards in hands for user 1:

10H,8D,5S,AC,KH,5H,2H,7D,QJ,QH

Enter the cards in hands for user 2:

10D,8S,6H,JC,QS,3H,AH,9D,4J,5C

Sample Output

User 1 can hold as:

AC, KH,QJ,QH 2H,5S,5H,7D,8D,10H

User 2 can hold as:

AH, JC ,QS,3H,4J,5C,6H,8S,9D,10D
