**Assignment** 4: Lab assignment Java Collection and Threads

Q1. create a file story.txt and put some text into it. read that file and find the frequency of each word in the file in the and print it

Ex:

story.txt

life is full of fun life is full of fun life is full of fun life

O/P:

life appear 4 times is appear 3 times

.....

......

Q2. Create a class BookCollection which contains:

1. the owner's name and an array of books that the owner has,

2. toString( ) that outputs all the books in the BookCollection in a nice format.

3. a method hasBook(Book b) which checks if the book b is contained in the array (we consider two books the same if they have the same title and author).

4. a method sort() that sorts the books in the array by the lexicographical order of the book title, and author.

Create your own BookCollection and check if you own a particular book:"Java in depth". Sort the BookCollection

and output the BookCollection.

Q3. Consider file data:

97.59780253225763

23.705044359023198

72.97025259152822

18.986484094410137

77.56528079180427

88.5456385076513

59.09494795452861

72.71304984780839

80.0202893029642

29.58427968260707

74.66713563267237

27.40345943374961

15.990164966686493

58.852582668688534

45.58743329596889

77.2227556103568

53.49035808405568

93.5583604428736

35.09314691785803

9.812059847790467

51.438605600928376

6.081908597641594

2.604194278086147

99.43752090812772

20.355993598952395

Put data into a file named data.txt, Read from data.txt all the doubles (edited by a user) and display the biggest one.

Q4. Create a program to create PriorityQueque to store product information

Product class : consist of fields: productId, productName, productPrice. Create and store 5 product into PriorityQueque

You need to use Comparator for custom priority (as per productPrice)

Q5. Filedownloader use threads for better cpu utilization, we need to create an application to simulate processing of filedownloader consider we have some photos on dropbox (Refer lab 7)

https://www.dropbox.com/photo1.jpg

https://www.dropbox.com/photo2.jpg

...

...

https://www.dropbox.com/photo25.jpg

Modifify the code to use threads so that performance of application can be improved

Q6. Q5. Synchronizing a method,In this lab we will learn how to use synchronization in

Java, that is, the use of the synchronized keyword to control the concurrent access to a

method. Only one execution thread will access one of the methods of an object declared with

the synchronized keyword. If another thread tries to access any method declared with the

synchronized keyword of the same object, it will be suspended until the first thread finishes

the execution of the method.

public class Account {

private double balance;

//getter setter

public void addAmount(double amount) {

//

}

public void subtractAmount(double amount) {

//

}

}

Now same account object is used by Bank and Company class, bank trying to subtract Rs 1000 , 100 time and

Company trying to deposit Rs 1000, 100 time(refer lab code)

Now we need to ensure that total amount must be consistent (Apply synchronization method and block)