

VOTING app..

Registration Number :

18MCMT36 (M.Tech – CS)

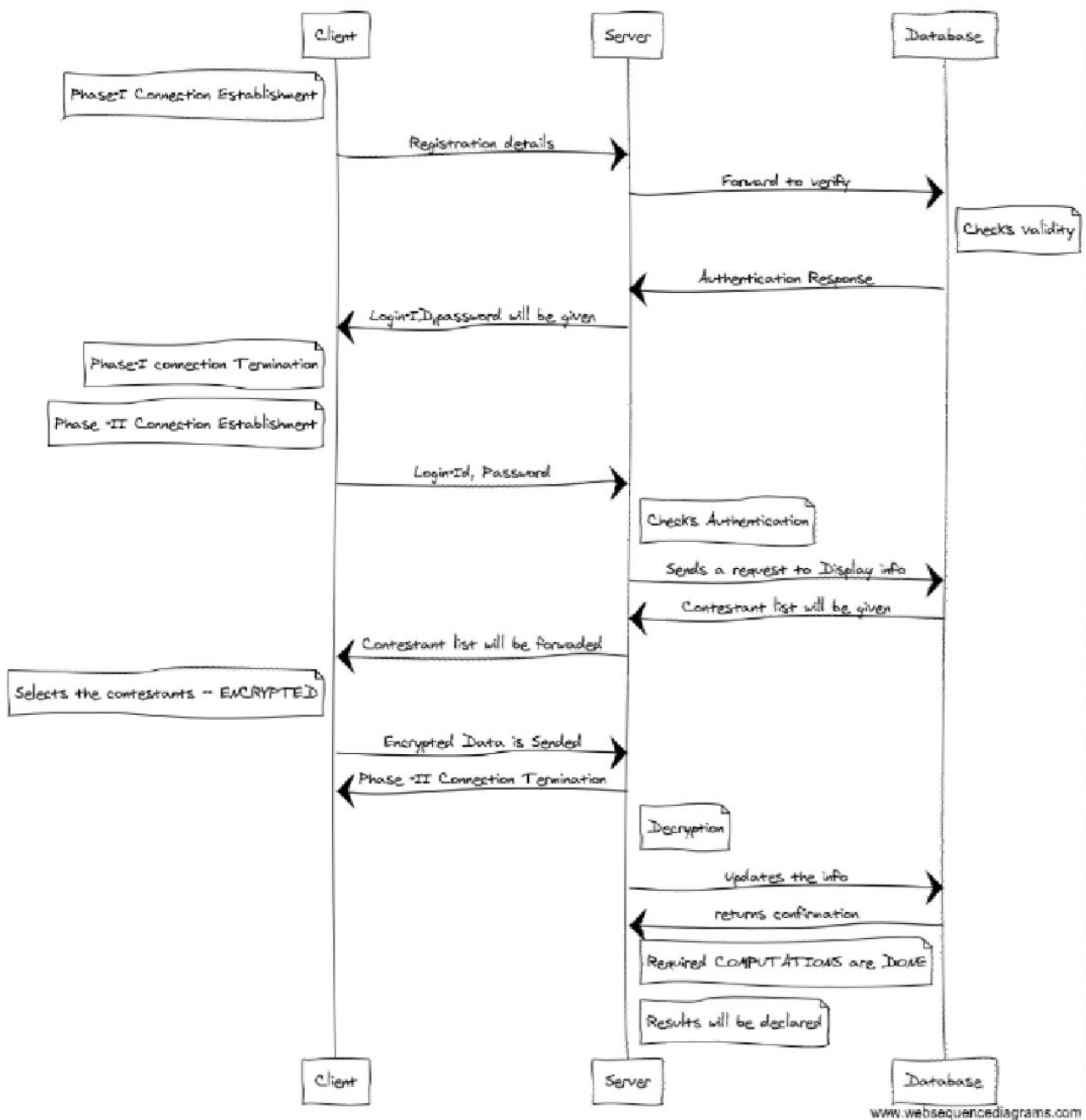
18MCMT10 (M.Tech - CS)

ABSTRACT :

Vote , a kingmaker in any sector. So for such a precious thing its highly required to AUTHENTICATE it in a better way . Manual Voting is quite good but technically supported system will provide better AUTHENTICATION, CONFIDENTIALITY and foremost thing RELIABILITY. So , we decided to develop an application using SOCKET PROGRAMMING , to achieve the above mentioned factors.We used JXL API inorder to get the database support from EXCEL SHEET. We did the above problem in three phases . PreElectionphase using SINGLE-SERVER and SINGLE-CLIENT inorder to facilitate registration . Election (phase II) using SINGLE-SERVER and MULTIPLE-CLIENT to organise the Election . PostElection Phase to release the Results.

The above problem was simulated to STUDENT ELECTIONS.

DataFlow diagram of Vote app..



www.websequencediagrams.com

Data-Flow Diagram

JXL API :

In order to deal with the Excel sheets Java inherently doesnot providing the way to access them,modify them and do operations on it . We choosed Excel sheet to work on as using Database in the back-end makes it complex and using other than Excel makes it pretty low one. We havent used Excel so far, so we wanted to work on it .

JAVA API orginal document is hyperlinked below :

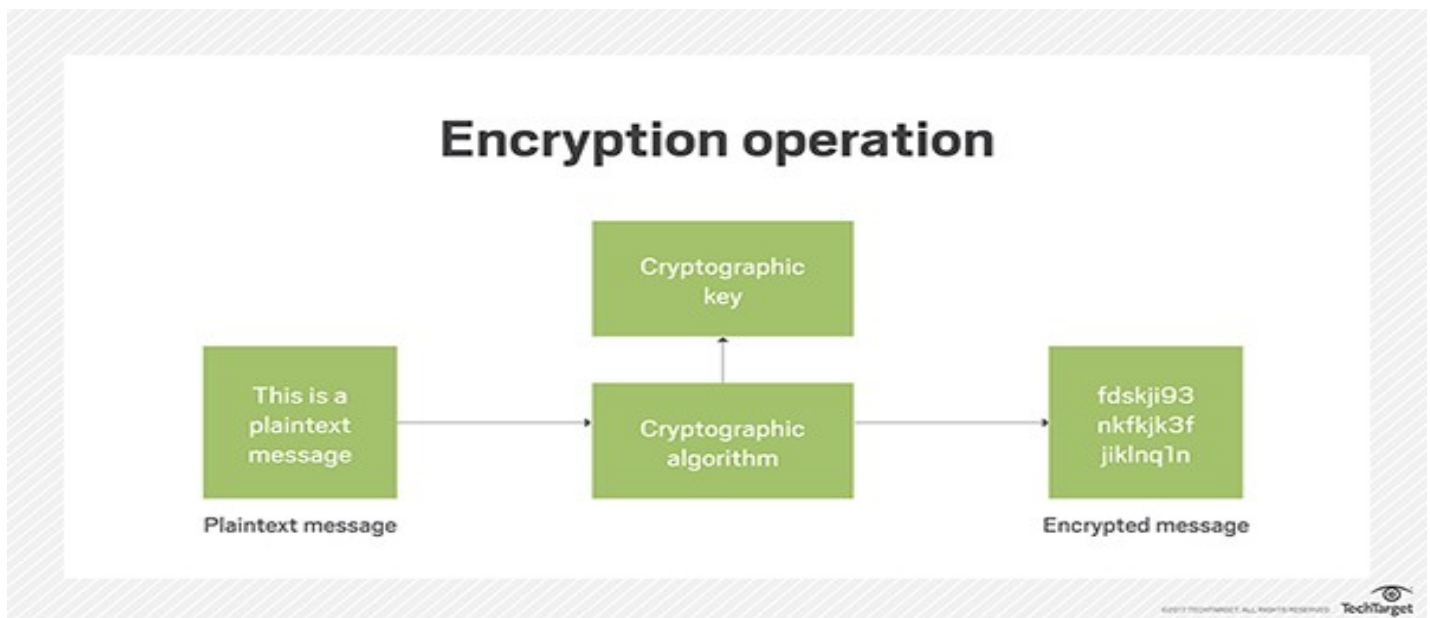
<http://jexcelapi.sourceforge.net/>

Similar Sources ?

Other than JXL API there are other API likes Apache POI,XLXS writer etc., but in order to work on Apache POI it is mostly recommended to install Apache Server .But , our system configuration is bit low so we did JXL API.

AES(Advanced encryption standard)

The Advanced Encryption Standard, or AES, is a symmetric [block cipher](#) chosen by the U.S. government to protect classified information and is implemented in software and hardware throughout the world to encrypt sensitive data.



AES comprises three block ciphers: AES-128, AES-192 and AES-256. Each cipher encrypts and decrypts data in blocks of 128 [bits](#) using cryptographic keys of 128, 192 and 256-bits, respectively. Symmetric (also known as secret-key) ciphers use the same key for encrypting and decrypting, so the sender and the receiver must both know -- and use -- the same [secret key](#).

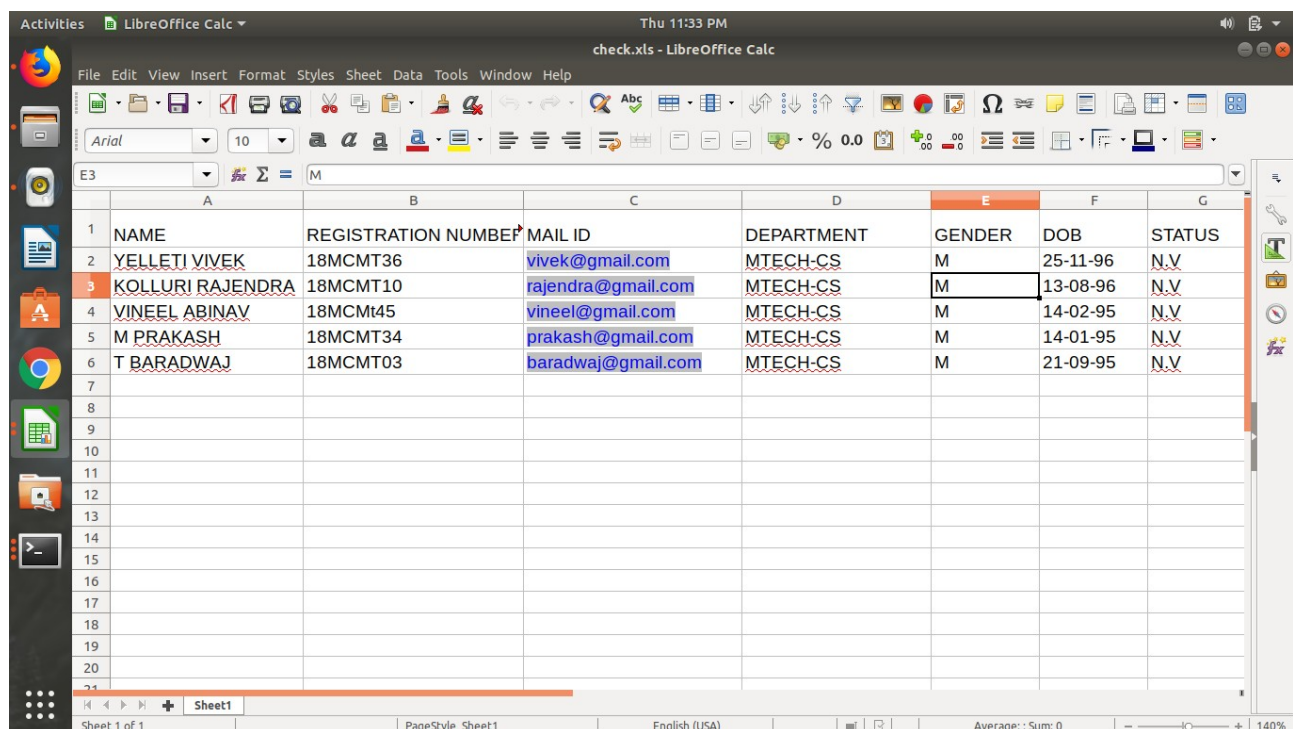
The AES encryption algorithm defines a number of transformations that are to be performed on data stored in an array. The first step of the cipher is to put the data into an array; after which the cipher transformations are repeated over a number of encryption rounds. The number of rounds is determined by the key length, with 10 rounds for 128-bit keys, 12 rounds for 192-bit keys and 14 rounds for 256-bit keys.

PreElectionPhase:

In this we provided the facilitation to register the students inorder to get the LOGIN- ID and PASSWORD.

We maintained data in an Excel sheet form to validate the details of the requests coming from the client (Student).

The Excel sheet contains the following details of users :



	A	B	C	D	E	F	G
1	NAME	REGISTRATION NUMBER	MAIL ID	DEPARTMENT	GENDER	DOB	STATUS
2	YELLETI VIVEK	18MCMT36	vivek@gmail.com	MTECH-CS	M	25-11-96	N.V
3	KOLLURI RAJENDRA	18MCMT10	rajendra@gmail.com	MTECH-CS	M	13-08-96	N.V
4	VINEEL ABINAV	18MCMT45	vineel@gmail.com	MTECH-CS	M	14-02-95	N.V
5	M PRAKASH	18MCMT34	prakash@gmail.com	MTECH-CS	M	14-01-95	N.V
6	T BARADWAJ	18MCMT03	baradwaj@gmail.com	MTECH-CS	M	21-09-95	N.V
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							

The programs were kept under folder
registration/

excelserver.java : Server side program to implement of
Registration

excelclient.java : Client side program to implement of Registration

jexcelapi_2_6_12 : JXL API

check.xls : acts as a database

It's recommended to use terminal inorder to execute the program , because we have done everything in terminal only.

How to execute ?

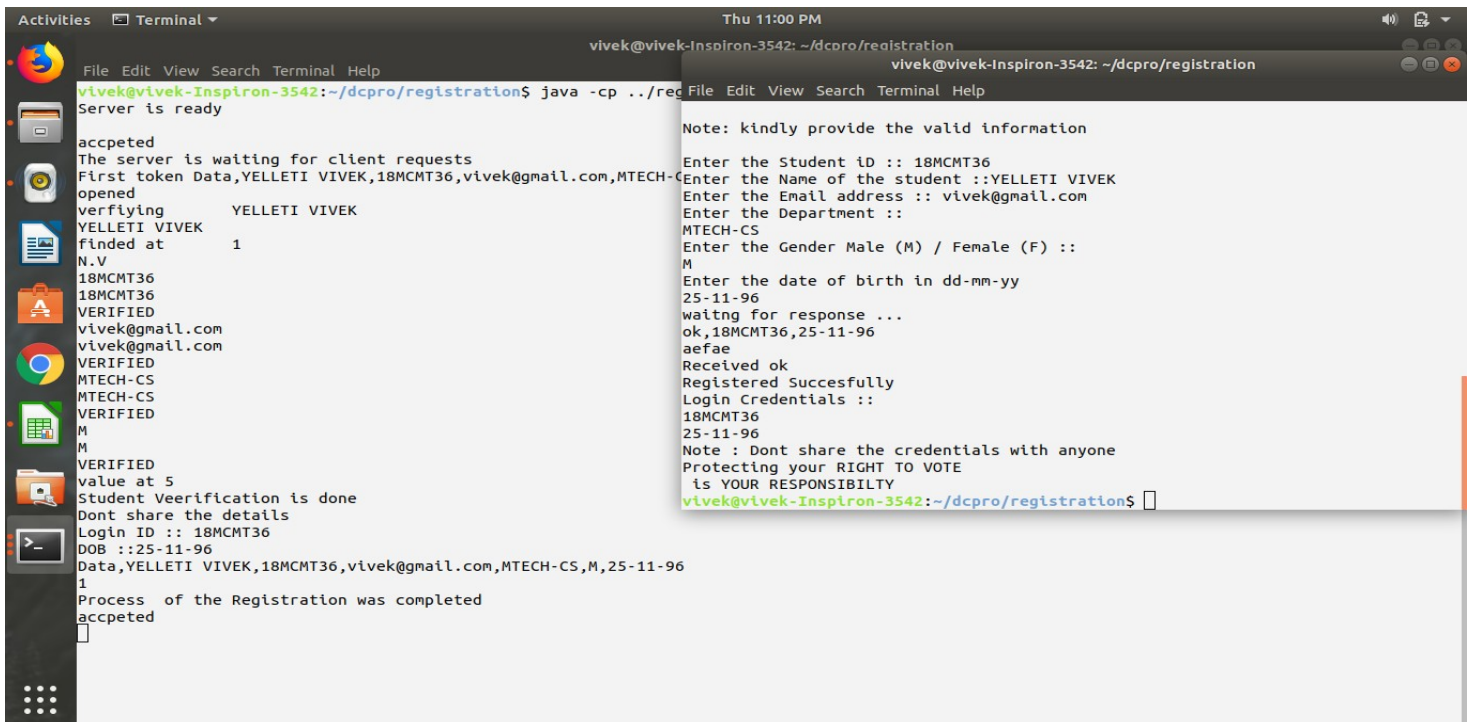
Excelserver.java

```
vivek@vivek-Inspiron-3542:~/dcpro/registration$ javac -cp jexcelapi_2_6/jexcelapi/jxl.jar excelserver.java
vivek@vivek-Inspiron-3542:~/dcpro/registration$ java -cp jexcelapi_2_6/jexcelapi/jxl.jar:. excelserver
Server is ready
accpeted
```

Excelclient.java

```
vivek@vivek-Inspiron-3542:~/dcpro/registration$ javac -cp registration/jexcelapi_2_6/jexcelapi/jxl.jar:. excelclient.java
vivek@vivek-Inspiron-3542:~/dcpro/registration$ java -cp registration/jexcelapi_2_6/jexcelapi/jxl.jar:. excelclient
```

Sample Output Screenshots :



```
Activities Terminal Thu 11:00 PM
vivek@vivek-Inspiron-3542: ~/dcpro/registration
vivek@vivek-Inspiron-3542: ~/dcpro/registration
File Edit View Search Terminal Help
vivek@vivek-Inspiron-3542:~/dcpro/registration$ java -cp jexcelapi_2_6/jexcelapi
/jxl.jar:. excelclient
WELCOME TO THE UOH SU ELECTIONS
Fill the following details

Note: kindly provide the valid information

Enter the Student id :: aewf
Enter the Name of the student ::sg
Enter the Email address :: sfg
Enter the Department ::
dfg
Enter the Gender Male (M) / Female (F) ::
dfg
Enter the date of birth in dd-mm-yy
dfg
waitng for response ...
notok,*,+
aeafae
Received notok
Invaalid Details
vivek@vivek-Inspiron-3542:~/dcpro/registration$

finded at 1
N.V
18MCMT36
18MCMT36
VERIFIED
vivek@gmail.com
vivek@gmail.com
VERIFIED
MTECH-CS
MTECH-CS
VERIFIED
M
M
VERIFIED
value at 5
Student Veerification is done
Dont share the details
Login ID :: 18MCMT36
DOB ::25-11-96
Data,YELLETI VIVEK,18MCMT36,vivek@gmail.com,MTECH-CS,M,25-11-96
1
Process of the Registration was completed
accpeted
The server is waiting for client requests
First token Data,sg,aewf,sfg,dfg,dfg,dfg
opened
verfiying sg
YELLETI VIVEK
KOLLURI RAJENDRA
VINEEL ABINAV
M PRAKASH
T BARADWAJ
Person authentication failed
Data,sg,aewf,sfg,dfg,dfg,dfg
0
Process of the Registration was completed
accpeted
```


ElectionPhase:

This was the program simulating the Electionday and we facilitated the user to given LOGIN ID and PASSWORD to get credentials to vote .And after that Clients can vote based on the post by entering their names.

Here to provide some better CONFIDENTIALITY and SECURITY we implement AES algorithm.

So the vote names you are reflecting will be encrypted on the client side and decrypted on the server side.

The programs were kept under folder :
electionday/

board.java : Simulation of Election commission

voter.java : Simulation of voter

Authenticate.java: A java class to validate the credentials of the client who is requesting . It fetches data from check.xls excel file

check.xls : acts as a database

How to Execute ?

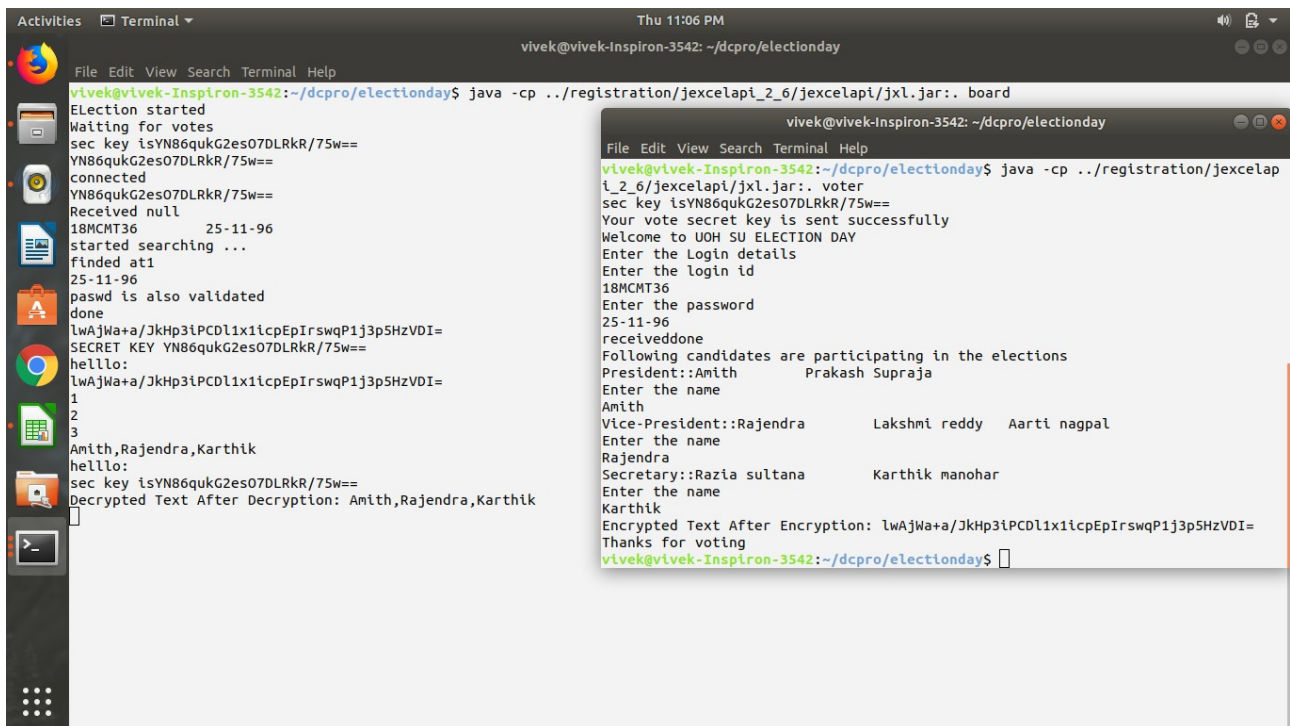
Board.java

```
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ javac -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar Authenticate.java
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ javac -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. board.java
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ java -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. board
Election started
Waiting for votes
█
```

voter.java

```
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ javac -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar voter.java
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ java -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. voter █
```

Output Screenshots :



```
vivek@vivek-Inspiron-3542: ~/dcpro/electionday
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ java -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. board
Election started
Waiting for votes
sec key isYN86qukG2es07DLRkR/75W==
YN86qukG2es07DLRkR/75W==
connected
YN86qukG2es07DLRkR/75W==
Received null
18MCMT36      25-11-96
started searching ...
findex at1
25-11-96
paswd is also validated
done
lwAjWa+a/JkHp3iPCDl1x1icpEIrswqP1j3p5HzVDI=
SECRET KEY YN86qukG2es07DLRkR/75W==
hello:
lwAjWa+a/JkHp3iPCDl1x1icpEIrswqP1j3p5HzVDI=
1
2
3
Amith,Rajendra,Karthik
hello:
sec key isYN86qukG2es07DLRkR/75W==
Decrypted Text After Decryption: Amith,Rajendra,Karthik
vivek@vivek-Inspiron-3542:~/dcpro/electionday$
```

```
vivek@vivek-Inspiron-3542:~/dcpro/electionday
vivek@vivek-Inspiron-3542:~/dcpro/electionday$ java -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. voter
sec key isYN86qukG2es07DLRkR/75W==
Your vote secret key is sent successfully
Welcome to UOH SU ELECTION DAY
Enter the Login details
Enter the login id
18MCMT36
Enter the password
25-11-96
receiveddone
Following candidates are participating in the elections
President::Amith      Prakash Supraja
Enter the name
Amith
Vice-President::Rajendra      Lakshmi reddy      Aarti nagpal
Enter the name
Rajendra
Secretary::Razia sultana      Karthik manohar
Enter the name
Karthik
Encrypted Text After Encryption: lwAjWa+a/JkHp3iPCDl1x1icpEIrswqP1j3p5HzVDI=
Thanks for voting
vivek@vivek-Inspiron-3542:~/dcpro/electionday$
```

PostElectionPhase:

This gives the results of the elections.

This was kept under the folder:

results/

constestant.java : A java class which

data.java: A java class which

polling.xls : acts as a database

How to Execute ?

```
vivek@vivek-Inspiron-3542:~/dcpro/results$ javac -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar data.java
vivek@vivek-Inspiron-3542:~/dcpro/results$ javac -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. results.java
vivek@vivek-Inspiron-3542:~/dcpro/results$ java -cp ../registration/jexcelapi_2_6/jexcelapi/jxl.jar:. results
```

Output Screenshots:

```

Winners of the Election
POST      Name      Votes      Status
P0        a         6          Winner
P0        b         4          -----
P0        c         3          -----
P0        d         5          -----
P1        e         5          -----
P1        f         6          Winner
P1        g         5          -----
P1        h         4          -----
P2        I         4          -----
P2        j         2          -----
P2        k         6          Winner
P2        l         3          -----
```

Limitations:

As already mentioned we are using the JXL API in order to deal with Excel sheet . To be precise we are unable to modify the Excel sheet . Whenever we are using WritableWorkbook (an inherent class in order to get the Excel sheet in a writable way) instead to add into the cells , unfortunately the contents are overwriting .

Due to this problem , we are unable to handle one more constraint in the Registration phase . Due to that , registration form gives the authentication to the already registered members also. That means if you are valid user , registered once and got the credentials.

Again if you want to register it will again give you the credentials , which is one of the serious flaw when dealing with the back-end.

FUTURE WORK :

- > At the Back-End Database has to be included.
- > GUI has to be designed.

