DIGITAL VOTING

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ABSTRACT

In today's scenario, voters have to go to the polling booth to vote which takes time and the voting percentage is also low due to some voters do not go to polling booth to cast the vote. Digital voting would be helpful as voter can vote online from their computer or laptop or smartphone which can save time of voter, it will be also helpful to increase the voting percentage. Digital voting has admin login which will be handled by election commission and voter login which will be handled by voter. Voters can login through their voter ID number and password after a successful registration. The system will allows voters to view a list of candidates in their area, voters can get to know the candidates background (like income, works, etc.) and choose wisely. Once the election is started voter have to login into the account, select a candidate and have to give face id with webcam or front camera, if the face matches with the face given at the time of registration then voter will be promoted for two factor authentication, if two factor authentication is successful then the vote will be submitted and one voter can vote for a candidate only once per election.

Keywords: Online Election System, Online Voting System, Digital Voting, Face Detection, Face Recognition, Two Factor Authentication, Online Voting with Face Recognition.

I. INTRODUCTION

Digital voting would be helpful as voter can vote online from their computer or laptop or smartphone. It will have admin login and voter login. Admin login will be handled by election commission. Voter have to register one time by the unique voter identification number and can set a password for login and have to give face id with use of webcam or front camera. Voter can then login by unique voter identification number and password. For security purpose, at the time of voting the voter have to give face id, if face matches with the face given at the time of registration then the voter will be promoted for two factor authentication. In two factor authentication, voter have to give the mobile one time password which is sent to the voter's registered mobile number, if mobile one time password verification successful then voter have to give email one time password which is sent to the voter's registered email address, if the email one time password verification is successful then the vote will be submitted. One voter can vote for a candidate only once per election.

II. LITERATURE SURVEY

Meelis Kitsing [1] says the voter starts by inserting the ID-card into card reader and opening the webpage for voting (www.valimised.ee). Then voter verifies his/her identity by using the personal identification number of ID-card. This number is given to voter when card is issued together with PIN 2 and PUK code. Both PIN codes are used also for all other online transactions with the ID card that require digital signature. After entering first PIN server checks whether voter is eligible or not by using the data from population register. Once eligibility is verified, voter is shown candidate list of the electoral district, voter can click on his/her choice which is encrypted. The decision has to be confirmed by inserting the digital signature in the form of second PIN code. The submission of vote concludes the process for individual voter.

Limitation: The limitation of this system is if someone finds ID-card and pin of other then he/she can access the voter account and can vote also. There is no two factor authentication like entering one time password in this system.

Micha Germann, Flurin Conradin, Christoph Wellig, Uwe Serdül [2] say that Swiss implementation of online voting is determined by the federal structure of country. The voter have to login into his/her account and cast the vote. In order to vote online, as with many other online services, voter need to have various codes. If voter are entitled to vote online, these codes will be shown on voter's polling card. Voter have to use the first code to log into the online voting system, where voter can then cast his/her vote. After voter have cast the vote, voter can then check it has been correctly recorded. The system will give various code that will allow voter to verify whether it has been entered correctly in the system or not.

Limitation: The limitation of this system is that there is no face recognition in the voting process. Voter can login into account and can simply submit the vote which is less secure.

Joseph .D. Enoch, Nne .R. Saturday [3] say that in Nigeria, The voter have to login enter username and password in order to access other parts of the system. After login voter can see voter registration data, candidate registration

data, electoral voting process, election party data and general election results. For submitting the vote the voter have to scan his/her fingerprint if fingerprint matches then only vote will be submitted, if fingerprint does not matches then the vote will not be submitted. Admin have to login into the account by entering username and password, after logging into the account admin can enter party candidates, create voters data, and enter party information.

Limitation: The limitation of this system is that there is only fingerprint authentication and no face recognition of voter or two factor authentications in the voting process.

III. METHODOLOGY
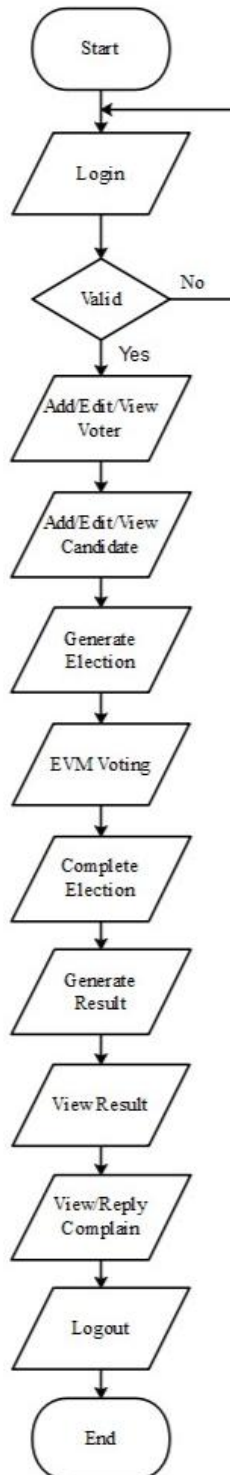
Fig.1 Flowchart of Admin

Description: This flowchart describes that admin (election commission) will login first then add/edit/view voter details, add/edit/view candidate details. Then admin will generate election. While election is running the online voters can vote online by logging into their account, but the voter who do not have facility to vote online can go to polling booth to vote, here admin will mark those voter who came to polling booth for EVM (Electronic Voting Machine) voting as voter voted by entering their voter id number. After election time is over the admin will complete the election. Then the admin will generate the result by adding the EVM votes with the online votes. Admin can also view the generated result. Admin can view the complaint submitted by the voter and can also reply to that complain. After all process completed the admin can have to logout from the account.
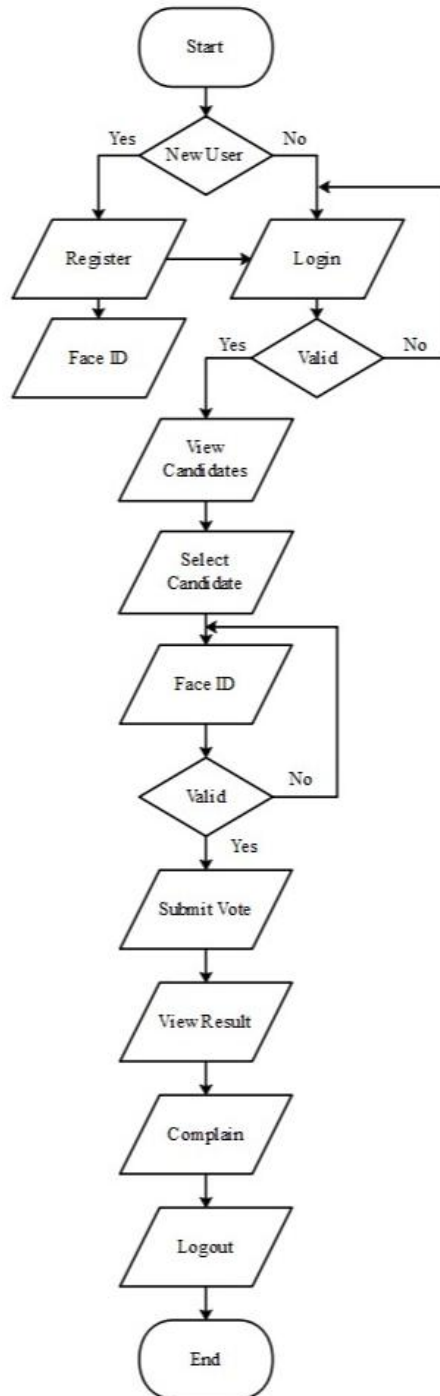
Fig.2 Flowchart of Voter

Description: This flowchart describes that the voter have to first complete the registration process by giving the face id (scanning the face in camera) and setting the password. Voter can then login by username and password and can view their profile. Voter can view candidate details. Once election is started voter can login into the account and can vote online, first voter have to select a candidate from the list and have to give the face id (scan face in camera) if the face matches with the face given at the time of registration then voter will be promoted for two factor authentication. In two factor authentication, voter have to give the mobile one time password which is sent to the voter's registered mobile number, if mobile one time password verification successful then voter have to give email one time password which is sent to the voter's registered email address, if the email one time password verification is successful then the vote will be submitted. Once the result and report are generated the voter can view result and report. Voter can also complain to admin if voter finds anything wrong in the election process or has any problem, voter can view the complaint response given by the admin.

IV.   IMPLEMENTATION

Login Page
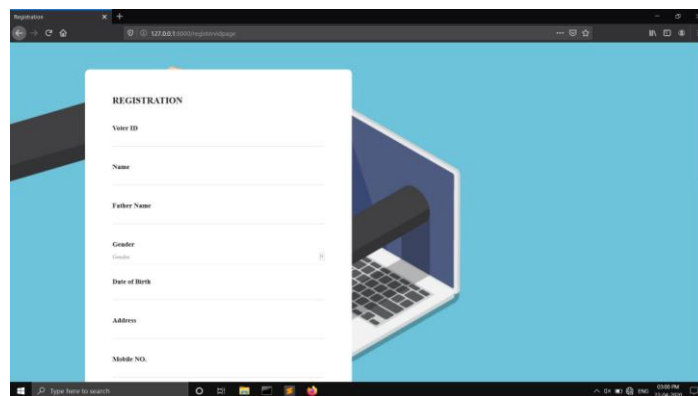
Registration Page
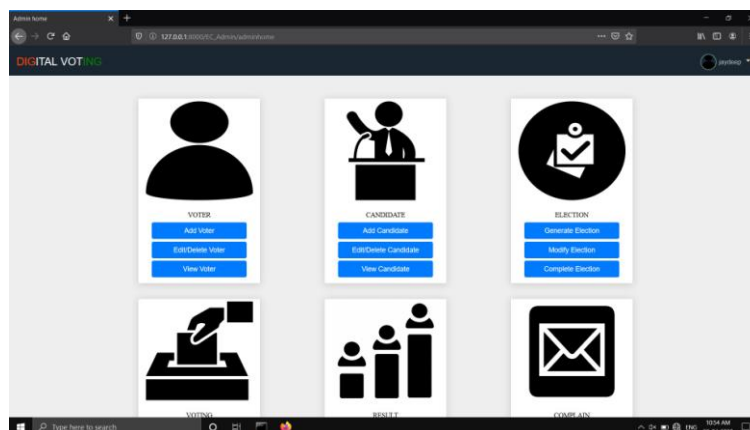
Admin Home Page
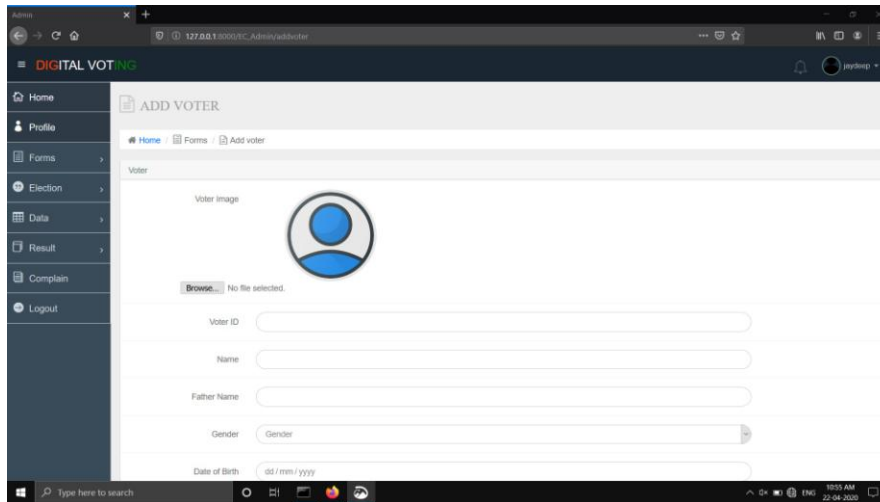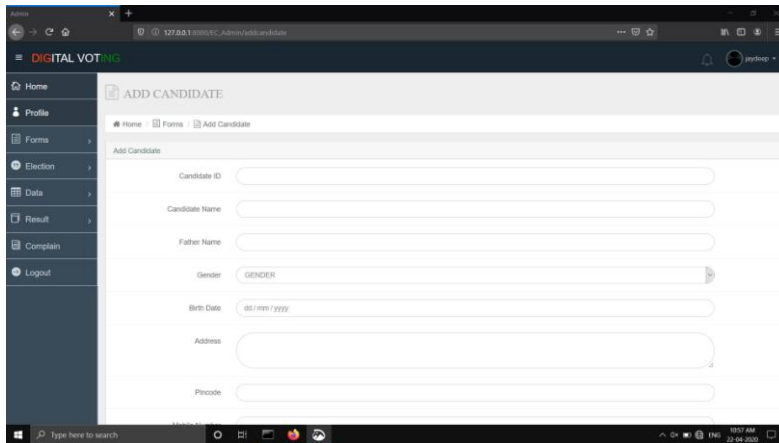
Add Voter Page
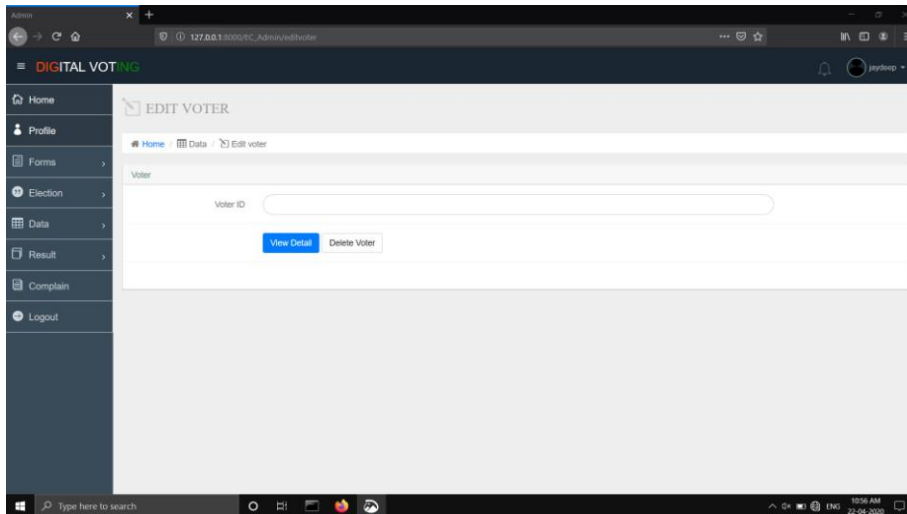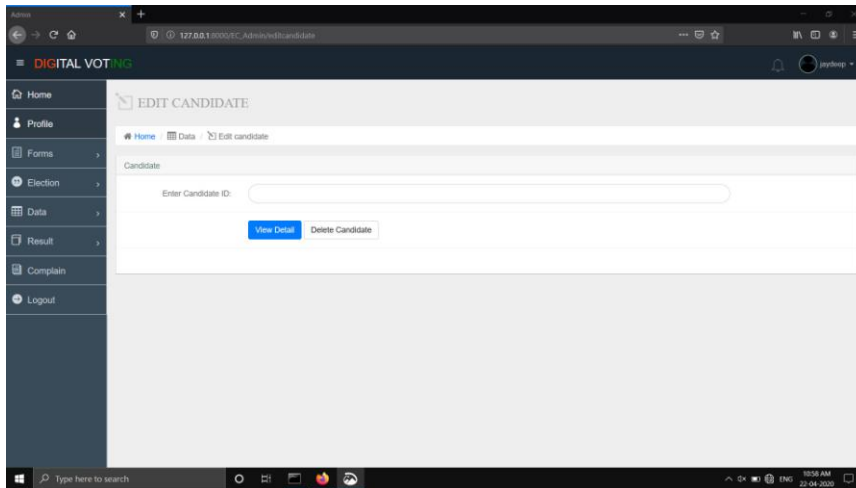
Edit/Delete Voter Page

View Voter Page

Add Candidate Page

Edit/Delete Candidate Page

View Candidate Page
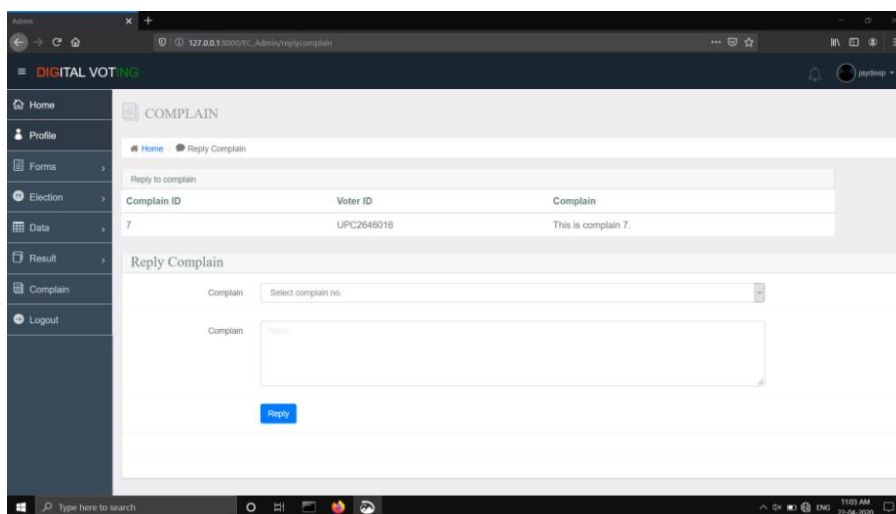
Generate Election Page
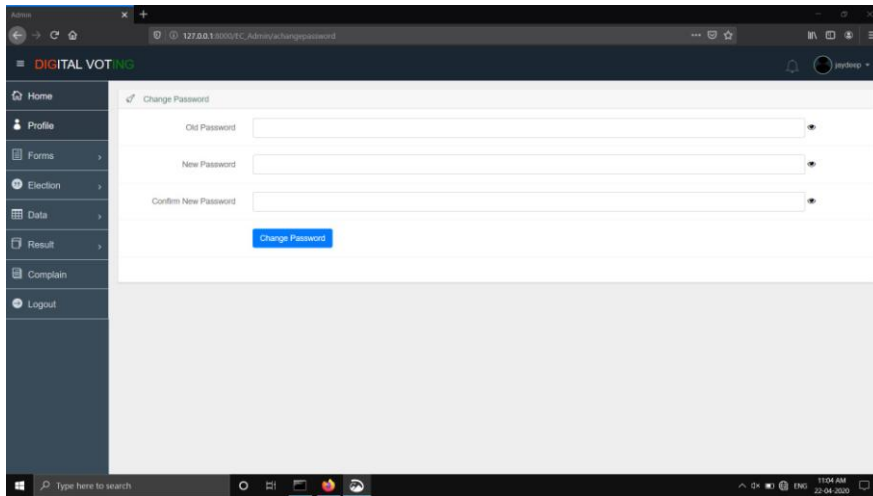

Complete Election Page

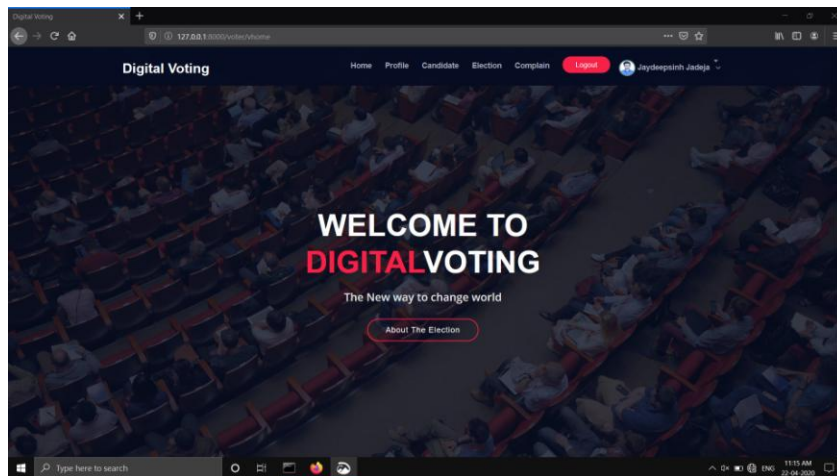Generate Result Page
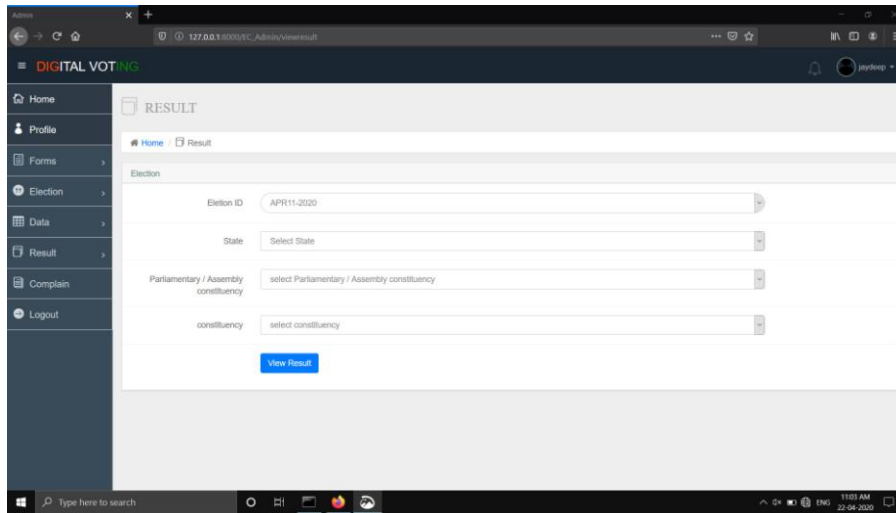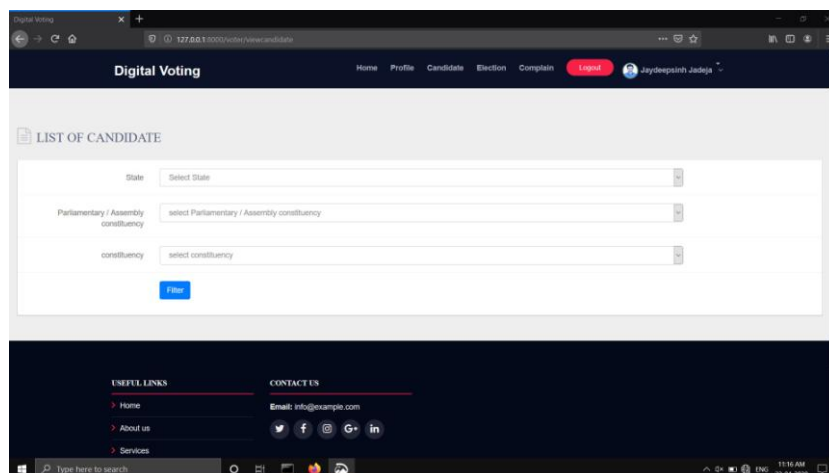
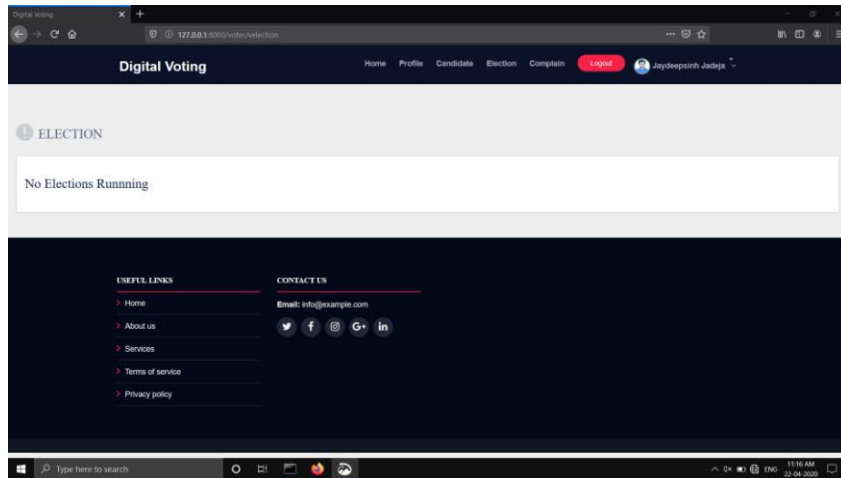View Result Page
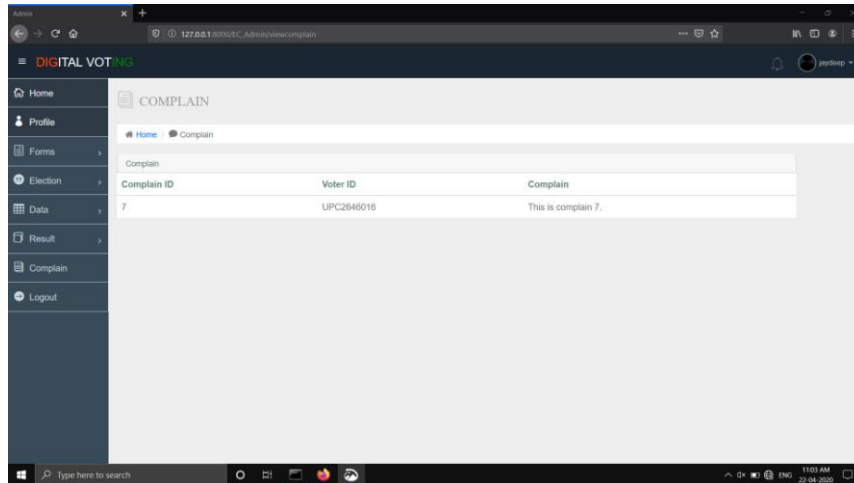
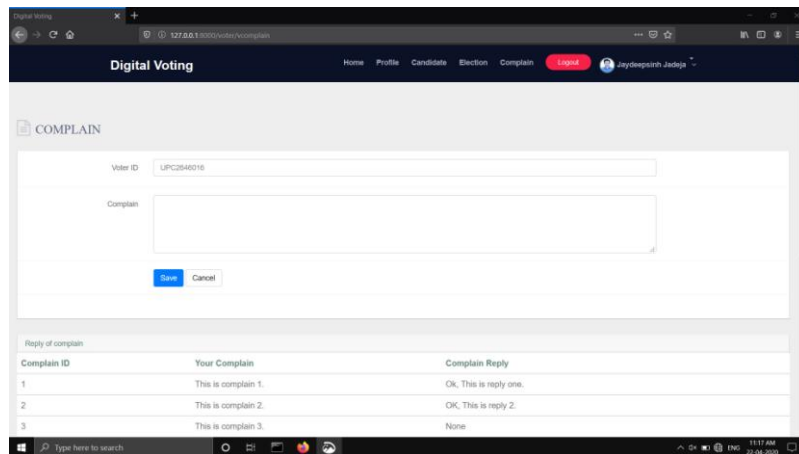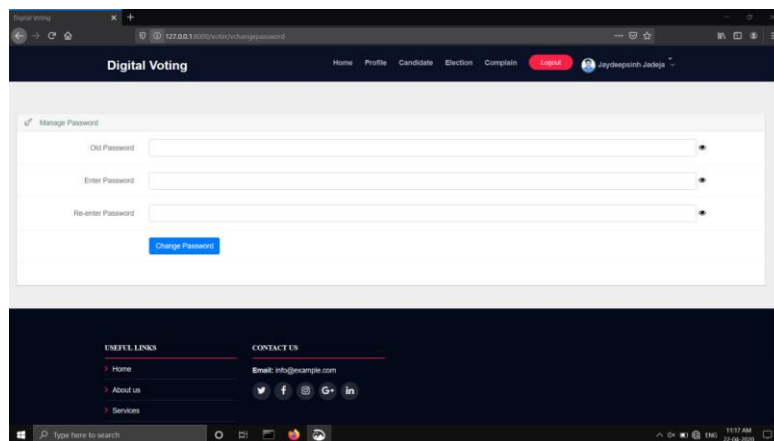View Complain Page

Reply Complain Page
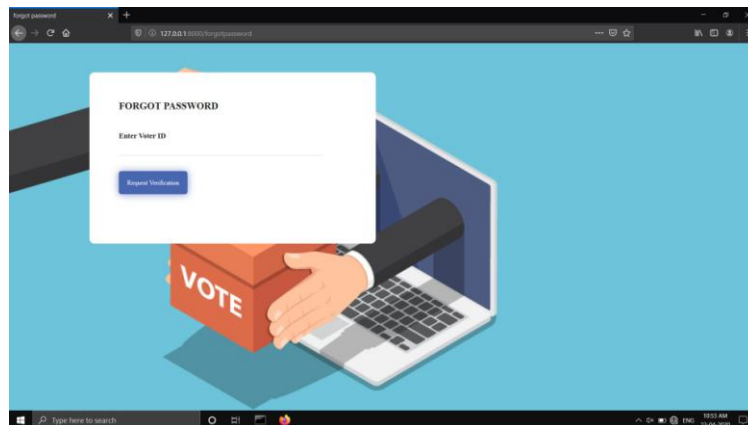
Change Password Page

Voter Home Page

View Candidate Page

Election Page

Complain Page

Change Password Page

Forgot Password Page

V. CONCLUSION AND FUTURE WORK

We conclude that with the implementation of the proposed system we will able to help election commission and voters to save their time. We will able to increase the voting percentage and take voting process at next level.

VI. REFERENCES

[1] Meelis Kitsing. Online Participation in Estonia: Active Voting, Low Engagement, 2011.

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