E Voting System Using Django Framework

(Internship Project Report)

By

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Letter of Transmittal

June, 2021

To

Dr. Mohammad Rezaul Bari
Associate Professor and Chairman,
Department of Electrical and Computer Engineering,
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Subject: Submission of Internship Project Report on " My Area - E voting System Using Django Framework".

Dear Sir,

With due respect, I would like to submit my Internship Project Report on " My Area - E voting System Using Django Framework" as a part of our BSc program. The report deals with an Online voting platform, where user can vote to a pool from anywhere of the world after registration process. They also can see the result immediately. I tried my best to make the report meaningful and informative. The internship project was very much valuable to me as it helped me to gain experience from practical field. It was a great learning experience for me. I tried to the maximum competence to meet all the dimensions required from this report. I will be highly obliged if you are kind enough to this report and provide your valuable judgement. It would my immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours
Mehedi Hasan
Department of ECE, North South University
Bashundhara R/A, Dhaka

Approval

The project entitled "**E Voting System Using Django Framework**" by **Mehedi Hasan** (Id # 1610882042) is approved in partial fulfillment of the requirement of the Degree of Bachelor of Science in Computer Science and Engineering on June, 2021 and has been accepted as satisfactory.

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Author's Declaration

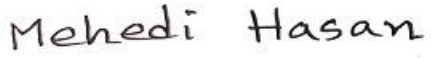
This is my truthful declaration that the "Internship Project Report" I have prepared is not a copy of any " Project Report" previously made by any other team. I also express my honest confirmation in support of the fact that the said " Project Report" has neither been used before to fulfill any other course related purpose nor it will be submitted to any other team or authority in future.

…….

Mehedi Hasan

Department of Electrical and Computer Engineering

North South University



ACKNOWLEDGEMENT

First of all, I wish to express our gratitude to the Almighty for giving us the strength to perform our responsibilities and complete the report.

The internship project program is very helpful to bridge the gap between the theoretical knowledge and professional life experience as part of Bachelor of Science (BSc) program. This report has been designed to have a practical experience through the theoretical understanding. Furthermore, **North South University** gave us plenty of privileges regarding technical facilities. So, we also like to admire the cooperation of our authority.

We also acknowledge our profound sense of gratitude to all the teachers who have been instrumental for providing me the technical knowledge and moral support to complete the project with full understanding. We would like to convey our gratitude to my faculty **AKM Bahalul Haque** for his stimulating inspiration, kind guidance, valuable suggestions, sagacious advice and kind cooperation throughout the period of word undertaken, which has been instrumented in the success of my project. At this level of understanding it is often difficult to understand the wide spectrum of knowledge without proper guidance and advice. His suggestions and guidance have made the report a good manner.

I like to express my heartiest gratitude to our family and friends for their moral support to carve out this project.

ABSTRACT

The term “E Voting” refers to the use of computerized system to cast vote in an election. This report describes how to make a voting system using Django framework. In this system there is a registration process. With this process a voter will be eligible to vote. Then a voter can vote from anywhere. This system is very useful for fast voting process. Any voter can see the result immediately. This is the alternative of using paper and pen process that is very lengthy and costly. This process also decreases of complexity in voting process. This is also cost efficient. I used Django framework and python as programming language. For template I used HTML and CSS. In database system I used MySQL. Django framework very flexible for implementing a large website. It doesn’t hamper other works. So, for making a website Django is a good choice.

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Chapter 1

Introduction

Election is a very important issue for any area. In this modern age it is high time to use the online voting system. This system provides fast voting process and less time. It also minimizes the cost. It also provides strong security in voting process. In this report I tried to show how E Voting system can be implemented with Django Framework. Using this new technology in voting process will make the system more organized. By using this system anyone can vote after the registration process. So, it decreases many hassle of going to the voting center. One of the advantages of paper based system is ballot is physically represented. But physical ballot does not ensure a vote will be correctly counted. Many factor can damage vote. So online voting process is more trust worthy process. Now a days, many countries are using E Voting System in their national elections.

To make easy and fast voting process there is no alternative of E Voting System.

Chapter 2

Proposed Methodology

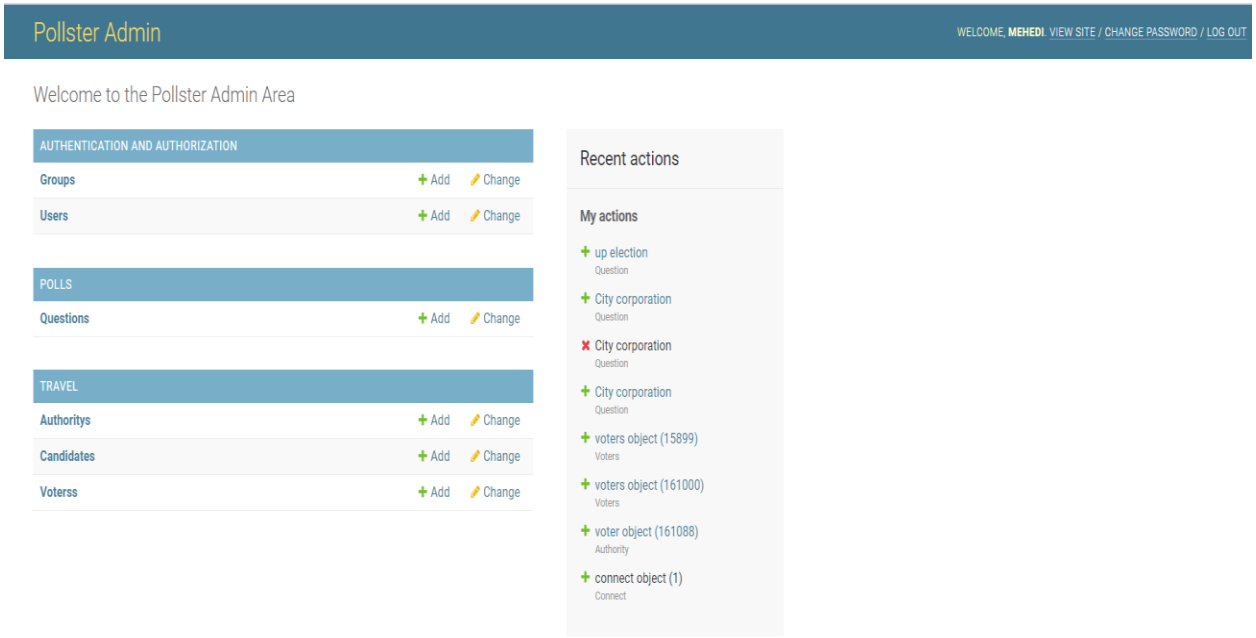
There are mainly three characters in this system. They are admin, voter and candidate.

1. Admin: Admin will be added by the authority. Then they will be able to control the whole process. They can create pool and delete pool. They can also add candidate.
2. Voter: Voter will able to vote after registration process. They will also able to see the result immediately from the website.
3. Candidate: Candidate can also vote and they will see the result. But before that they must have to added by the admins.

So, this is the way how the characters will act in this system. As the voter can see the result immediately it is more secured. The authority will not able to change the final result.

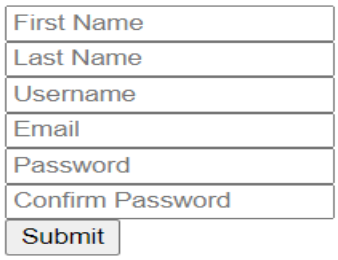
Here is the homepage:

Here I am adding the admin panel:

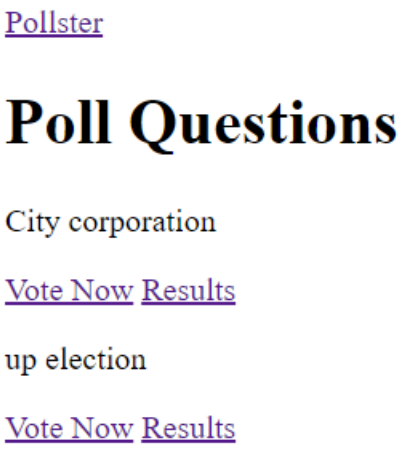


This is the admin panel. From here an admin can control the whole system. From Pools section the admin can add and delete pool. He can also add new candidates and voters. There is also a database called authority. Here the information of the authority will be added.

By registration process someone will able to participate in voting system. After registration the voter will be added by the admin. Then he can vote and see result. Here, I am adding the registration page:



After this process anyone can vote in the system. When the voting time arrives voter will see the pool by clicking on the Vote icon in Homepage.



After clicking the Vote Now icon the voter will able to vote for each election.

Every voter and candidate can see the result instantly.

Pollster

City corporation

- 1.Atikul 1 vote
- 2.Saidur 0 votes
- 3.Moinul 0 votes

Back To Polls Vote again?

So this is the whole process how the website works.

Chapter 3

Implementation

In this chapter I will describe the implementation process. The project was built with some languages. In implementation I used HTML, CSS, Python. HTML and CSS for designing the templates and the python is for implementing the logical implementation.

3.1 HTML

I used HTML for making the template. This is a hypertext language [1]. I make the navigation bar and the other important things in homepage. In other templates I also used HTML.

Some codes of HTML of the website are given below:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title> CSS</title>
    <link rel="stylesheet" href="css/style.css">

</head>

<body>
    <h2>Online Voting Website</h2>
    <ul class="menu">
        <li>
            <a href="#">Home</a>
        </li>
        <li>
            <a href="#">Registration</a>
        </li>
        <li>
            <a href="#">Vote</a>
        </li>
        <li>
            <a href="#">Log Out</a>
        </li>
    </ul>


</body>



</html>

```

Figure 3.1: example of HTML code of the website.

3.2 CSS

CSS language is very useful tool in designing the html page. It makes the website good looking and more user friendly. CSS describes how HTML elements should be displayed [2]. Full form of CSS is Cascading Style Sheets.

Some CSS codes of the website are given below:

```css
h2{
    color: blueviolet;
    text-align: center;
    background-color: aquamarine;
}

body{

    background-image: url('../assets/evoting2.PNG');
    background-repeat: no-repeat;
    background-size: 100%;
}

.mehedi{

    border-width=4px;
    border-style=solid;
    border-color: aqua;
    border-radius: 10px;
    text-align= center;
    background-color: antiquewhite;

}
a:link{
    background: none;
    text-decoration: none;
    color: black;
}

a:visited{
    background: yellow;
    color: darkgreen;
}

.m1{
    border: 3px solid blue;
    max-width: 400px;
    margin: auto;
}
```

Figure 3.2: Example of CSS code of the website.

3.3. Database

There is a Database management system in this project.

Here I used MySQL for this. This is an open source relational database management system(RDBMS) [3]. RDBMS is a software or a service used to create and manage databases based on a relational model. I created some table for database. After creating the database, I added this to the framework. Adding process is given below.

```
WSGI_APPLICATION = 'myproject1.wsgi.application'


# Database
# https://docs.djangoproject.com/en/3.1/ref/settings/#databases

DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.mysql',
        'NAME': 'mydb1',
        'HOST': 'localhost',
        'PORT': '3306',
        'USER': 'root',
        'PASSWORD':'mehedi-hasan'

    }
}


# Password validation
# https://docs.djangoproject.com/en/3.1/ref/settings/#auth-password-validators

AUTH_PASSWORD_VALIDATORS = [
    {
```

Figure 3.3: Adding database to the framework

I used MySQL workbench as visual database design tool that integrates SQL development, administration, database design, creation and maintenance into a single integrated development environment for the MySQL database system [4].

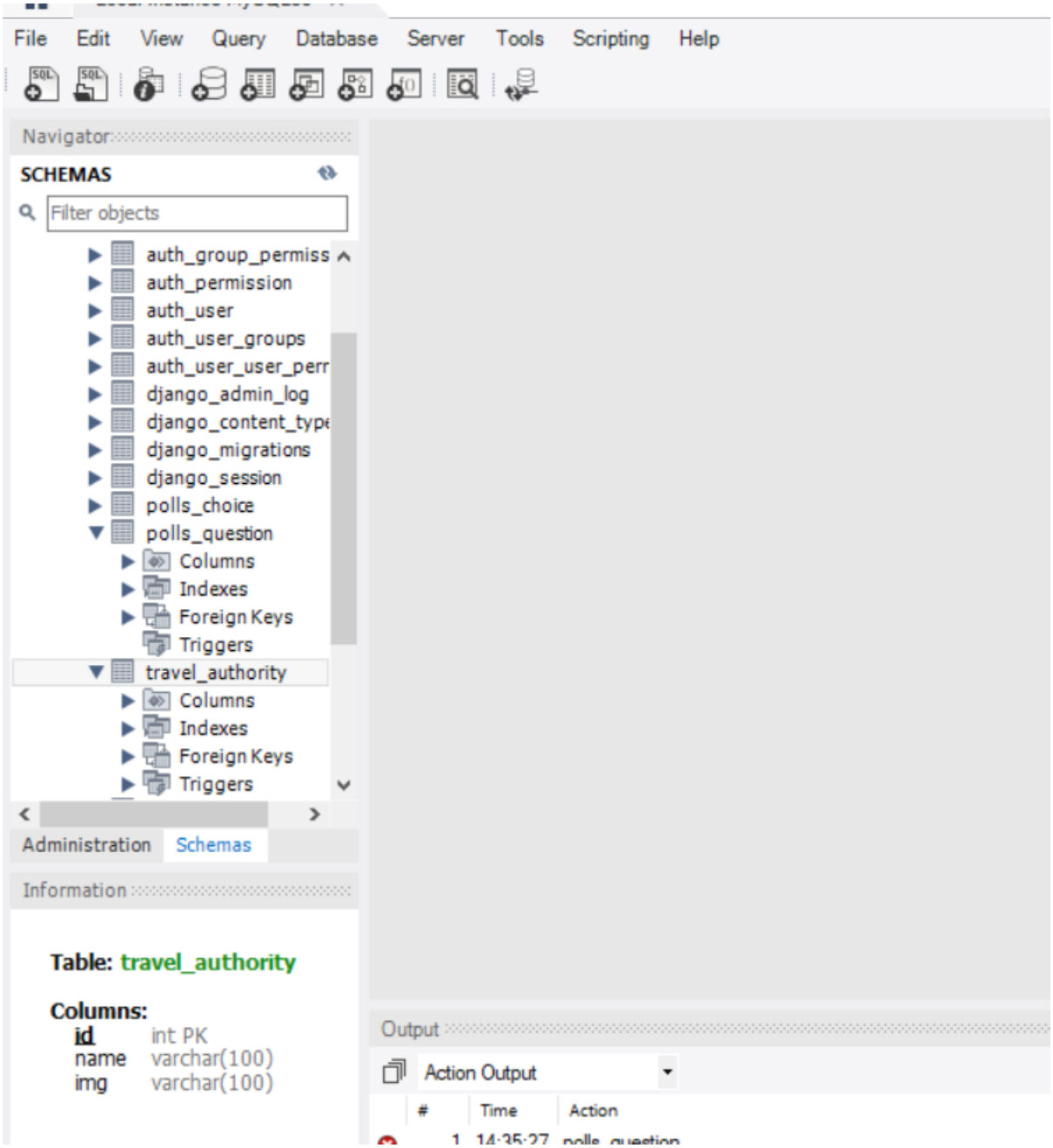


Figure 3.4: MySQL workbench

3.4 Source Code Editor

In implementation process, I used visual studio for editing the codes. Visual Studio Code is a free editor that helps the programmer write code, helps in debugging and corrects the codes using the intelli-sense method [5]. Visual Studio Code is free and available on Linux, macOS, and Windows platform. It is super-fast and light weight source code editor.

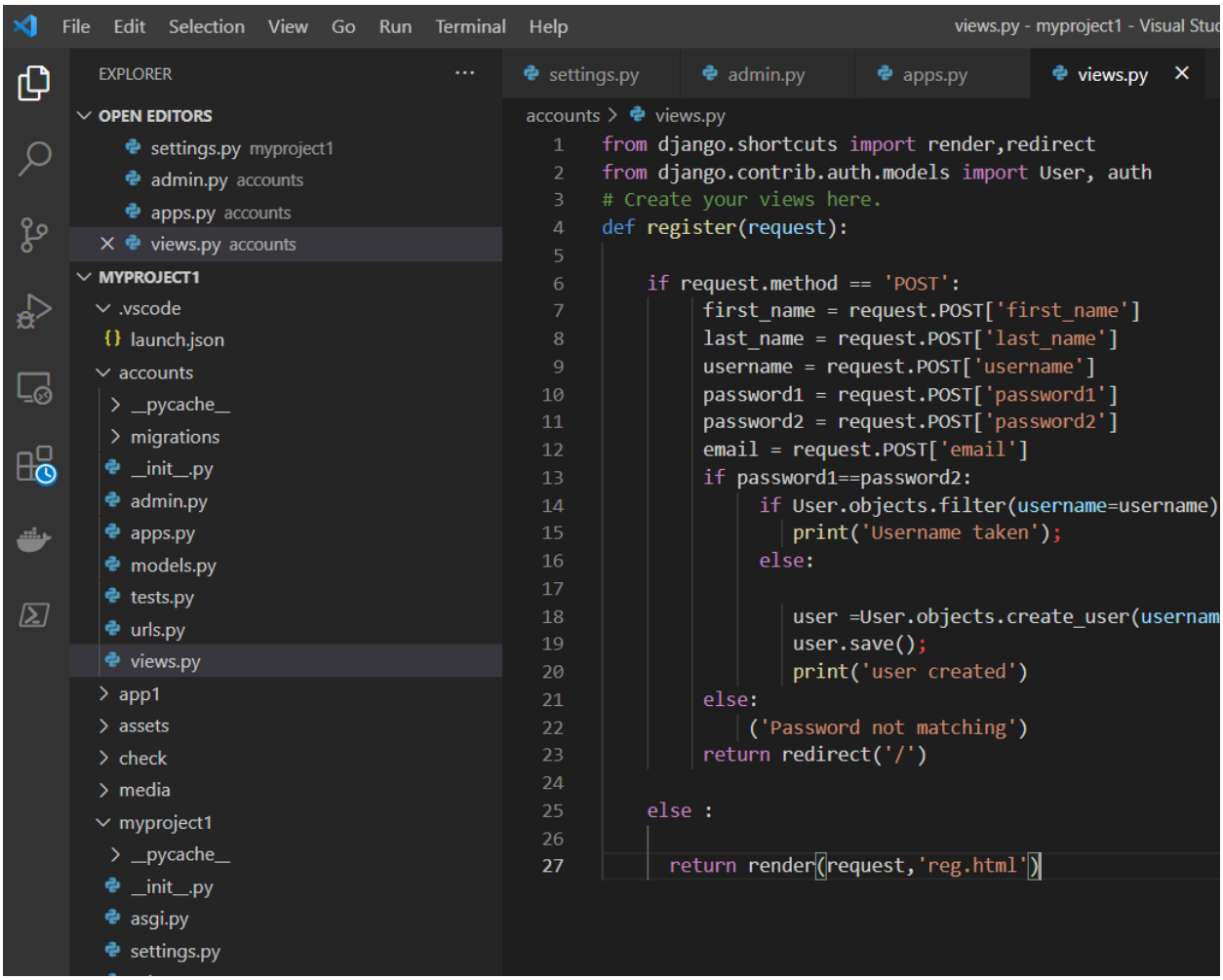


Figure 3.5: Some works of the project in Visual Studio Code

3.5 Framework

Framework is a very important issue in building websites. Many similar works can be reused if we use a framework. Some extra work can be reduced by using framework. In this project, I used **Django** framework. It is a python based framework [6]. It is very organized and working friendly platform. Many programmers can work at a same time in similar project in this platform. No work hampers other. If a developer faces a problem with his work, it will not decrease the flow of works of other developer. So, this platform is very useful in organizational works.

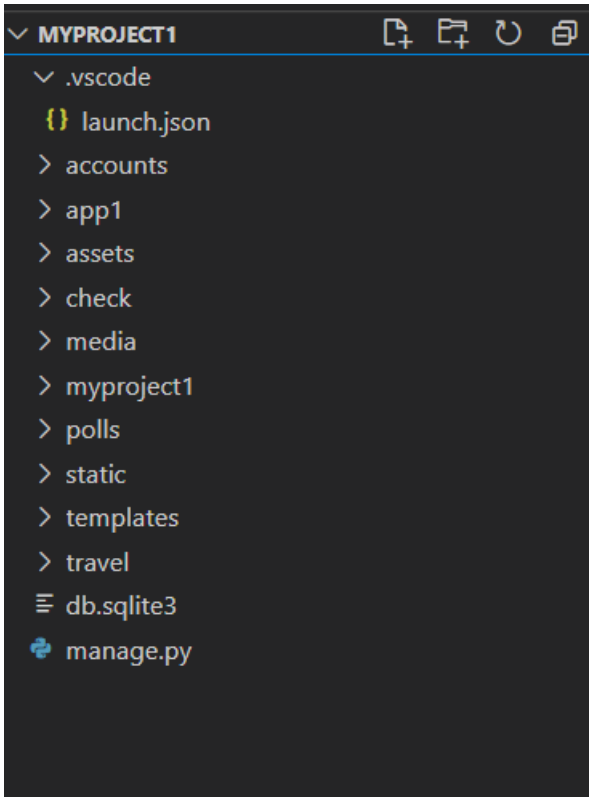


Figure 3.6: Basic files of Django based on the project

3.6 Command Prompt

Django uses command prompt to deploy new app, to create database, to run server and some other activities. There are a lot of command to work with Django [7].

For example, to run the server Django uses “python manage.py runserver” command.

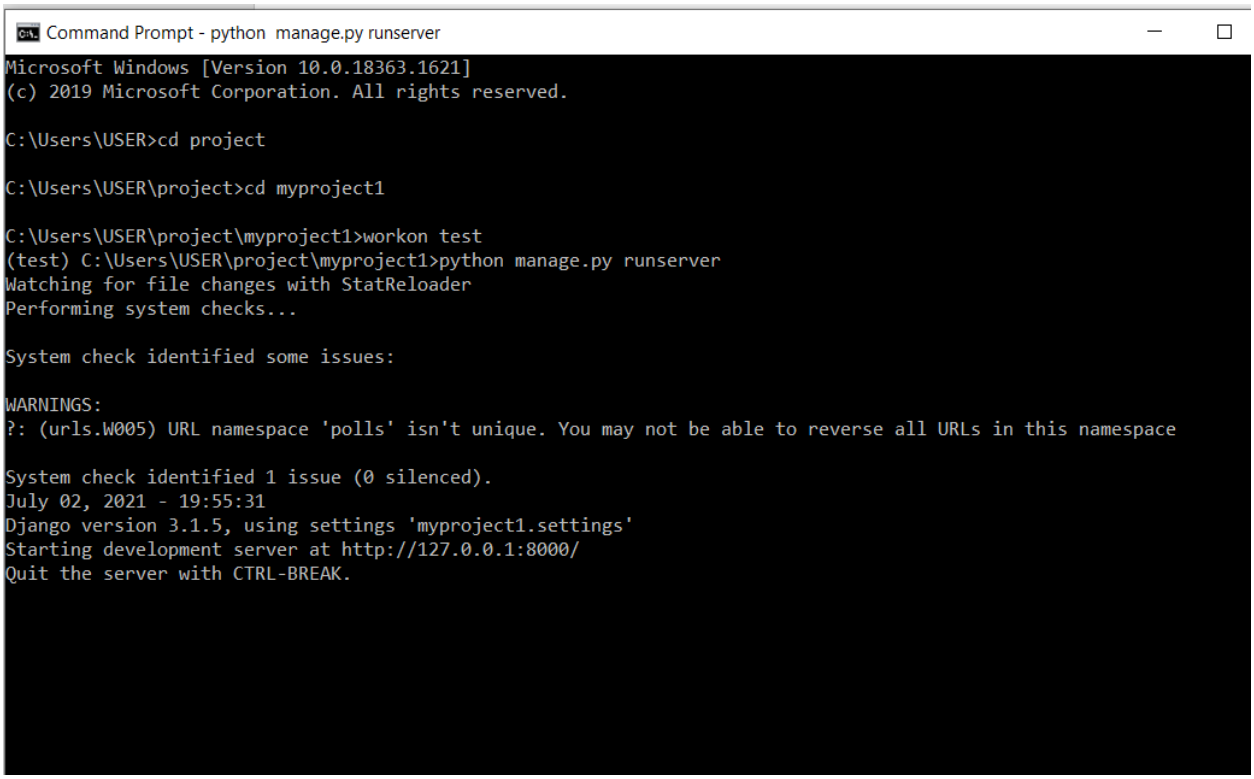


Figure 3.7: Run the server using command prompt

Chapter 4

Result and Findings

As this is an online voting website there are some issues and requirements. So I tried to fulfill all of them. I was successfully added the logical implementation and admin panel and databases. I also shared the screenshots earlier. The purpose was to make easy and user friendly. I tried it. Firstly, I tried a downloaded template. But that was not working with the framework. Then I decided to make it from skrech. So, I can say that using the Django and Python is very flexible for a organized project. Because I can also reuse my code in another similar project. And if some works are pending the other will not be effected. These are my findings regarding this project.

Now a days, many large organizations using Django to build their official websites. Like Amazon.

There are a lot of flexibility in this platform. A lot of API can be used in this platform. To make a website robust Django always provide nice APIs. Using of REST API developer can be helped.

Chapter 5

Discussion

In this chapter we briefly explain the complications and limitations related to our findings. How we can improve the system is also explained in this section.

5.1 Complication and Limitation

There is always a challenge to meet up the security issue in voting websites. So ensuring security was a big challenge for me. Registration process was very helpful to remove that problem. There is an also authentication issue while checking the real voter. So, in this purpose any voter will be provided the user id and password. The admin also responsible for checking some other issue related to the security. So, this was the complications.

There are also some limitations in this project. It would be better if anyone could see the result of every election from the homepage. To see result, any voter have to go to the voting platform page. I didn't use any API. If I tried to use any API I could explain the benefit briefly and had better experience of work.

5.2 Future Work

In future, I will try to improve this site and try make this more user friendly and robust. Specially, I will try to add a biometric process to this system. I will also try to add the related APIs [8]. There are also some improvements in the templates. Then the security issues are also very important. So in future work it will be in target to improve.

5.3 Organizational Help

The organization was a lot of helpful to me during the work period. I faced some problems in frontend issues as I like to work with the backend. I also faced some other issues. They helped me in these regards. I came to know a lot of other informations about the corporate field from them. There are also other platforms in web developing sector. They provided me those informations. The requirements of being a good developer is very important. The academic life and the corporate life are very much different. The knowledge a student gained from academic life is very useful. But those learnings have to implement in corporate life. So, working a few days with that corporate field helped me to learn much about the corporate sector. I also learn how to apply the learnings and relate to the theory and implementation. So, the internship period helped me a lot to achieve the practical working experience.

Chapter 6

Conclusion

E Voting System created a new era in voting system. But it couldn't earn the faith of the people. So, by using the new technology of Django Framework there are a lot of possibility to make it secured and user friendly. I tried to fulfill those criteria. Online voting is easy and less time consuming. By using this people will experience a new technology. They will enjoy it. This is an era of technology. There is no need to use traditional voting system. So, by using this we can make our voting system easy, comfortable and less time consuming. If people become friendly with this system, they will be benefited. The system is also cost efficient. Because there is no need of pen, paper, and ballot box. So, by using this process effectively any organization, any group or any community can be benefited.

References

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