# NEXT GEN EMPLOYABILITY PROGRAM

Creating a future-ready workforce

Team Members

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# CAPSTONE PROJECT SHOWCASE

**Project Title**

**Voting Web Application using Django Framework**

Abstract | Problem Statement | Project Overview | Proposed Solution | Technology Used | Modelling & Results | Conclusion

## Abstract

This paper presents the development of a modern voting web application using the Django framework. The application aims to facilitate efficient and secure voting processes for various elections, including political, organizational, or community-based. Leveraging Django's robust features such as authentication, authorization, and ORM, the application ensures the integrity and confidentiality of the voting system.Through rigorous testing and adherence to best practices, the voting web application provides a reliable and user-friendly platform for democratic participation.

## Problem Statement

- Develop a secure and user-friendly web application using Django framework that allows registered users to participate in various voting processes, such as polls, surveys, or elections.
- The application should ensure the integrity of votes, provide an intuitive interface for both administrators and users, and include features for authentication, authorization, and result visualization.

## Project Overview

- Create a new Django app within the project to handle the voting functionality. This app will contain models, views, templates, and any other necessary components.Define Django models to represent the data associated with the voting system, such as User, Poll, Choice, and Vote.

- Project setup
- App creation
- Database models
- Admin interfaces
- User authentication
- Poll creation
- Voting and results display
- Frondend design and URL routing
- Testing and deployment

## Proposed Solution

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- Utilize Django's built-in authentication system for user registration, login, and logout functionalities. Customize authentication views and templates as needed.

- Implement views and templates for displaying candidates and allowing users to cast their votes. Ensure that each user can only vote once and handle any potential errors or edge cases.

- Register models with Django's admin interface to allow administrators to manage candidates, voters, and votes easily.
- Customize admin views and templates for better usability if necessary.

## Advantages

- Django's built-in features like authentication, URL routing, and templating system allow for quick development of complex web applications.
- Django provides built-in security features like protection against SQL injection, cross-site scripting (XSS), cross-site request forgery (CSRF), and clickjacking.
- Django's ORM simplifies database interactions by abstracting away the need to write SQL queries directly, making database operations more intuitive and less error-prone.
- Django is versatile and can be used to build a wide range of web applications, from simple blogs to complex e-commerce platforms, including voting systems.

## Disadvantages

- Learning curve: Django has a learning curve, especially for beginners or developers who are not familiar with Python or MVC (Model-View-Controller) frameworks. It may take time for developers to become proficient in Django's concepts and conventions.

- Overhead: Django is a full-stack framework, which means it includes a wide range of features and functionalities. While this can be advantageous, it also means that Django applications may have more overhead compared to micro-frameworks or minimalistic solutions, especially for smaller projects.

- Performance:While Django is capable of handling high traffic and scaling horizontally, it may not be as performant as some other frameworks or languages in certain use cases. Careful optimization and tuning may be required for applications with particularly demanding performance requirements.

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## Technology Used

Front-end

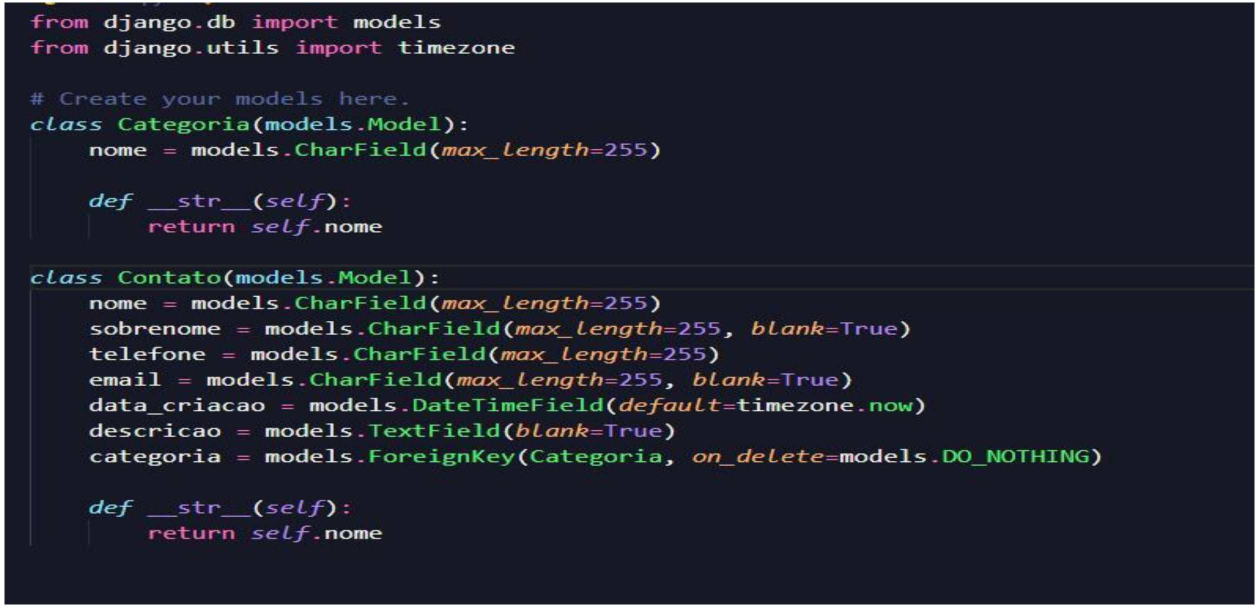
Back-end

Source :

## Modelling & Results

- In developing a voting application using Django, meticulous attention is directed towards both modeling the underlying data structure and effectively presenting the voting results to users.
- Through Django's model system, the application's data architecture is meticulously crafted, typically featuring models like Question and Choice to represent the polls and available choices.
- Once users have participated in the voting process, conveying the results to them becomes paramount.
- Leveraging Django's templating system, the application dynamically generates HTML templates that vividly present the voting outcomes in an intuitive and visually engaging manner.
- Furthermore, the application may utilize charting libraries or custom visualization techniques to elucidate the distribution of votes across different options, offering users valuable insights into the voting process's outcome.

# Homepage



```
from django.db import models
from django.utils import timezone

# Create your models here.
class Categoria(models.Model):
    nome = models.CharField(max_length=255)

    def __str__(self):
        return self.nome

class Contato(models.Model):
    nome = models.CharField(max_length=255)
    sobrenome = models.CharField(max_length=255, blank=True)
    telefone = models.CharField(max_length=255)
    email = models.CharField(max_length=255, blank=True)
    data_criacao = models.DateTimeField(default=timezone.now)
    descricao = models.TextField(blank=True)
    categoria = models.ForeignKey(Categoria, on_delete=models.DO_NOTHING)

    def __str__(self):
        return self.nome
```

## About-Us-Page

1.Credibility: The "About Us" page establishes credibility by providing informationabout the organization's history, mission, and team members .

2.Mission and Values: It communicates the organization's mission, values, and objectivesin promoting democratic participation and decision-making.

3. Community Engagement: The page showcases the organization's commitment tocommunity engagement and empowerment through the voting process, inspiring active participation.

4. Contact Information: Users can easily reach out with questions, feedback, or inquiriesabout the voting application through the contact information provided on the page.

## Service-Page

- Header Section
- Introduction section
- User Services
- Administrator Services
- Organizational Services
- Technical Services
- Consulting Services
- Call to Action Services

## Departments-Page

Header Section
- Introduction Section
- Department Listings
- Department Details
- Key Personnel
- Collaboration Opportunities
- Footer Section

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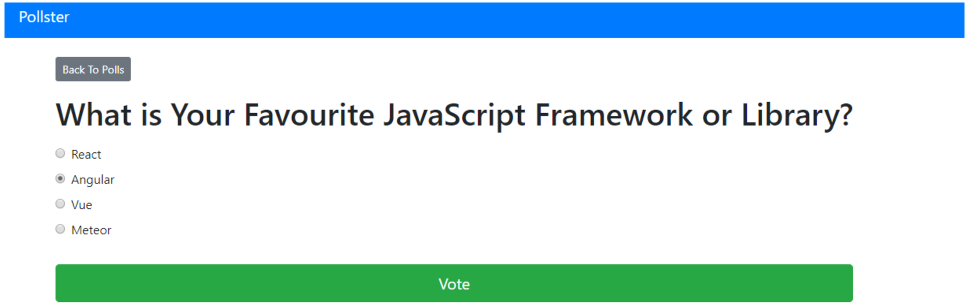
## Blog-Page


Pollster

Back To Polls

What is Your Favourite JavaScript Framework or Library?

- ○ React
- ● Angular
- ○ Vue
- ○ Meteor

Vote

## Future Enhancements:

- Utilize machine learning algorithms to analyze voting data, predict future trends, and provide personalized recommendations for users based on their voting history and preferences

- Extend the voting application's reach by developing native mobile apps for iOS and Android platforms, offering a seamless and optimized experience for mobile users.

- Explore integrating blockchain technology to enhance the transparency, security, and integrity of the voting process, ensuring that votes are immutable and tamper-proof.

- Implement comprehensive reporting functionalities for administrators to generate detailed reports on voting patterns, demographics, and trends. This could include visualizations such as charts and graphs.

## Conclusion

In conclusion, building a voting web application using the Django framework offers a solid foundation for creating a secure, scalable, and user-friendly platform. With Django's built-in features and extensive ecosystem of libraries and tools, developers can efficiently implement key functionalities such as user authentication, data modeling, and web templating. Overall, Django provides a robust framework for developing a voting web application that empowers users to participate in democratic processes effectively while ensuring the integrity and fairness of the voting process.

## Thank You!