UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Malaysia-Japan International Institute of Technology (MJIIT)

SEMESTER 1 (2020/2021)

SMJE 4383

ADVANCED PROGRAMMING

ASSIGNMENT 1

VOTING SYSTEM WEB APPLICATION

GROUP MEMBERS:

NAME	MATRIC NO
SITI NUR 'ATIQAH BINTI HALIMI	A17MJ0141
SITI NABIHAH AMILAH BINTI MARMIN	A17MJ0139
MAIZATUL SHAFIQAH BINTI SHARUL ANUAR	A17MJ0064

LECTURERS: **IR. DR. ZOOL BIN ISMAIL**

TABLE OF CONTENTS

1. INTRODUCTION

The World Health Organization (WHO) stated on 12 January 2020 that a novel coronavirus was the cause of respiratory disease in a group of people identified to the WHO on 31 December 2019 in Wuhan City, Hubei Province, China[2][12]. On 25 January 2020, Malaysia announced its first three incidents, which were all Chinese nationals who had visited the country[4][11]. Malaysia saw a big spike in active cases from 15 March onwards. On 16 March 2020, the Prime Minister of Malaysia conducted a live national telecast to announce the federal government's decision to enforce the Movement Control Order (MCO)[3].

Examples of the restrictions imposed on all Malaysians are mass meeting or attending mass gatherings, including religious, sporting, social and cultural activities, is forbidden by the public. In addition, all kindergartens, government and private schools, including regular schools, internships, international schools, tahfiz centres and other primary, secondary and pre-university institutions, all public and private institutions of higher education (IPTs) and institutes of skills training are closed[3]. However, for university students, online classes have been introduced during MCO and university activities are still carried out as usual. The university's club societies also need to recruit new members for the club.

Therefore, the voting system web application project is developed. This project is about the voting system to vote for the candidates in any club societies especially in university. Python was used for this project since python offers a fast and easy way to create apps, including web applications. Besides that in this project, the Django framework is also used. The Django framework will create projects much smoother, thus saving time in the process of web development. The aim of this project is to prevent any mass meeting by voting online for the candidates in order to reduce the risk of virus infection.

2. PROBLEM STATEMENT

On 26 September 2020, the Sabah 2020 state election took place to elect all 73 elected members of the 16th Sabah State Legislative Assembly[7]. On 30 July 2020, the previous Assembly was disbanded. Some standard operating procedures (SOPs) were developed by the Election Commission (EC) to ensure that the COVID-19 infection did not spread further due to the state election campaign. Unfortunately, certain SOPs have not been adhered to.

A large influx of COVID-19 cases in Malaysia has been triggered by the return of voters and politicians from Sabah to Peninsular Malaysia. Cases registered daily have risen to three digit numbers[9][10]. On 14 October, due to the increasing number of cases, the Federal Government announced the introduction of a Conditional Movement Control Order in Selangor, Kuala Lumpur, and Putrajaya[1][6].

The crowded meeting is the main source for these outbreaks of the speared COVID-19 virus. The Ministry of Higher Education therefore took early caution by announcing the closure of all Malaysian universities and the class will perform online as usual. As university students, the university's club societies must run smoothly aspecially in recruit new members for the club. Thus, this project is being developed as part of an effort to avoid any mass meeting to prevent infections with Covid-19 by voting online for the candidates.

3. METHODOLOGY

3.1 Design Process

First of all, an online meeting using Google Meet is conducted to brainstorm the idea for the project. Then a repository is created in github to save and edit the coding of the project. Below is the process of the project design:

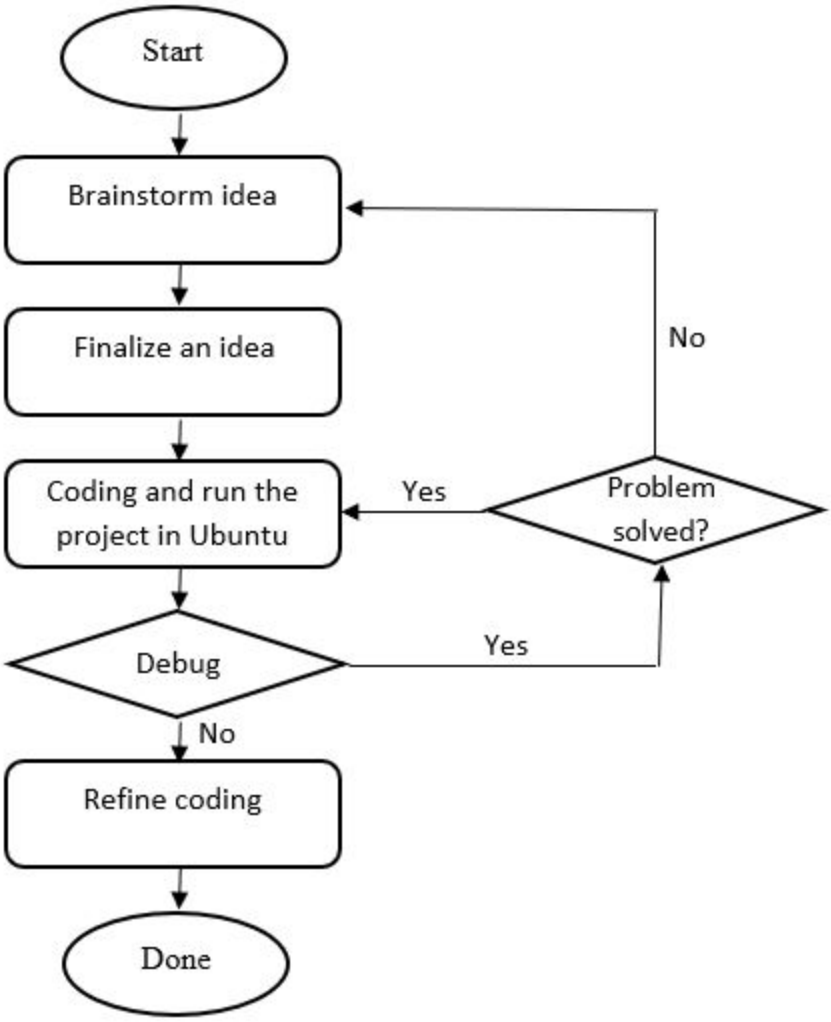

Figure 1: Process of project design

3.2 Integration

In order for the web applications to function well, there are a few steps and files that must be defined. The steps are as follows:

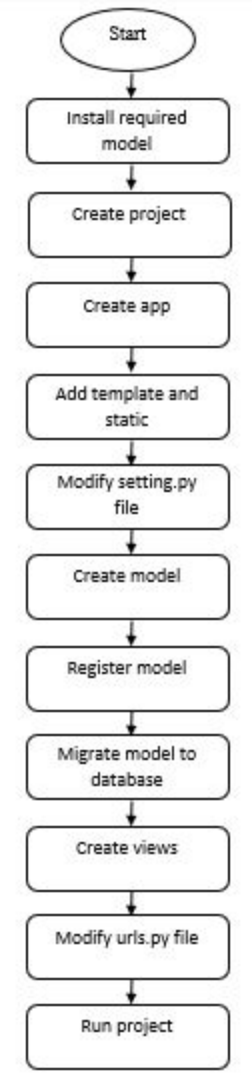

Figure 2: Steps to create the project

- Install required model: Django as the framework, django widget tweaks to modify form field and SQLite3 to join tables in different databases.
- Modify setting.py file: To add the app name, path for templates, add database credentials and mapping static file.
- Create model: Create user model

- Register model: Register the app model in admin.py file for admin to access and edit the data.
- Migrate model to database: Create table inside the app database
- Create views: Create views for the app templates
- Modify urls.py file: Adding url to access template

3.3 Methodology and Evaluation

The web application was managed in Ubuntu software because it provides a terminal application that has its own programming language which is python. The software was easy to use since python supports many modules and packages that can be used to create a website.

Django is chosen to create the web application as the framework. By creating an app using Django, the basic directory structure of an app is automatically generated into several files. From these files, the editing and writing of code is performed to develop the project . This could save time for the debugging phase. After the code is done, the project is run in the terminal and the web application is ready to be tested using the IP address provided. Debugging the web application is the challenging part of this phase because if there is error, the code needs to be fixed.

Then, superuser id was created to give access to admin. In admin, the polls can be edited or deleted. This action cannot be done by unauthorized users. Thus, by completing all the coding and debugging, the web application for the project is complete. Before the project was finalized, the code was running several times to ensure it works perfectly.

4. RESULT AND DISCUSSION

The end of this project development, a voting system web application project is developed. It is found that this web application comes with some features as shown in Figure 4.1, 4.2, and 4.3. such as:

a). Creating a new survey or poll statement for the voting

b.) Inserting the candidates

c.) Voting and viewing the vote results

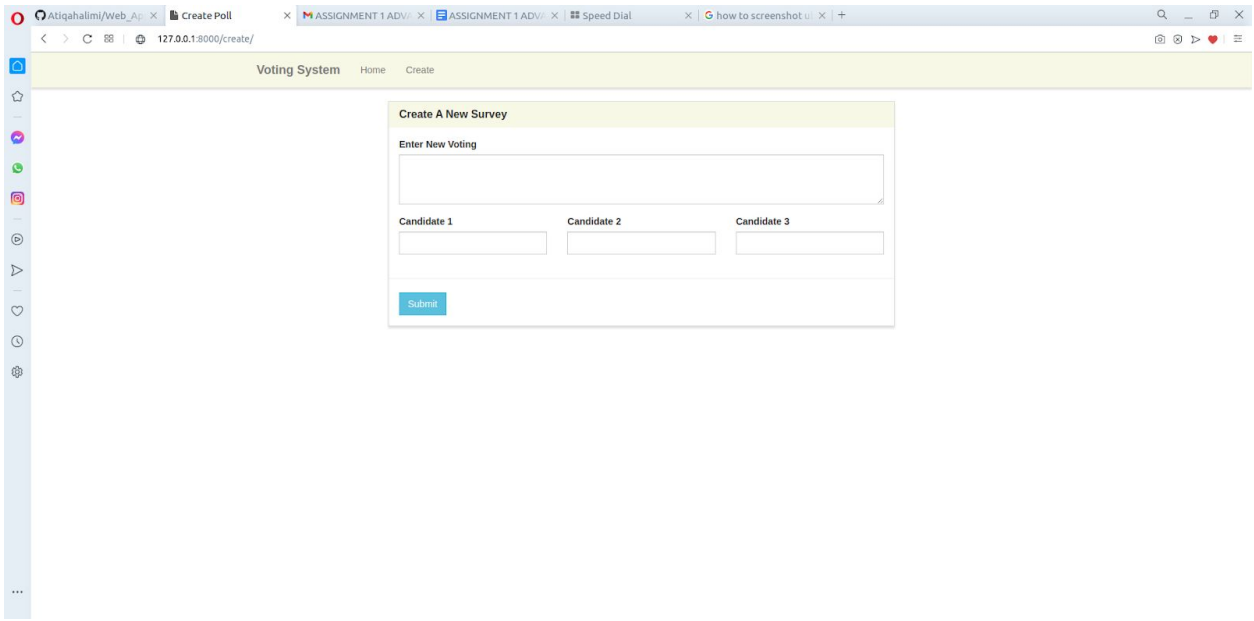

Figure 4.1: The view of the web application for the create page.

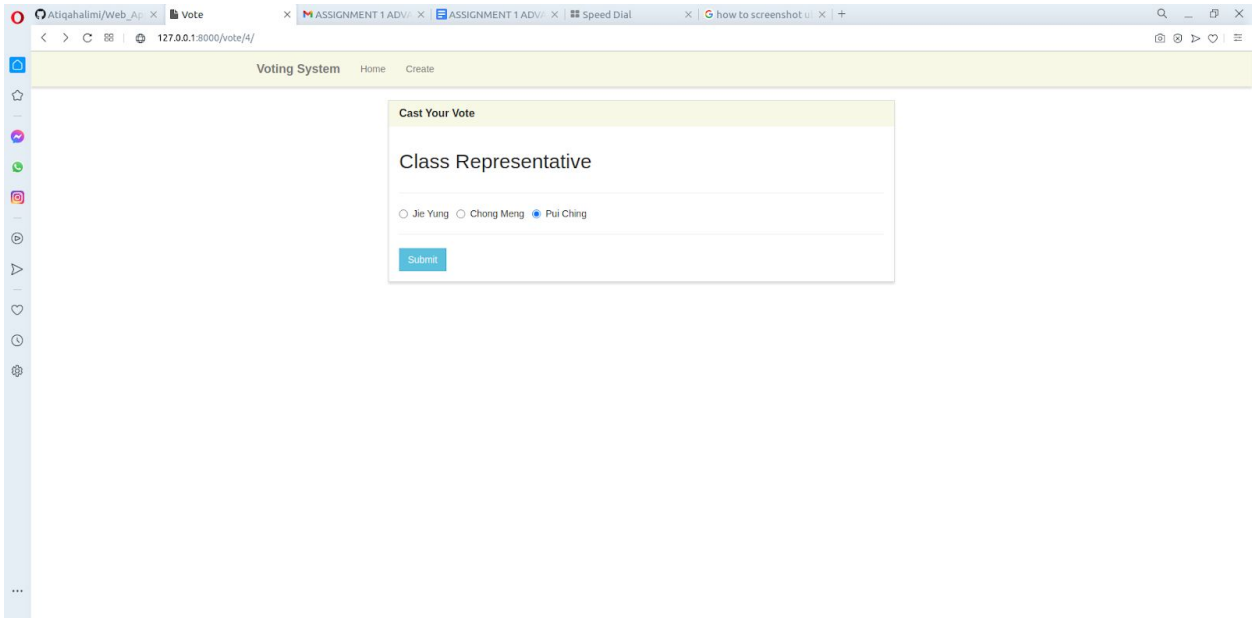

Figure 4.2: The view of the web application for the voting page.

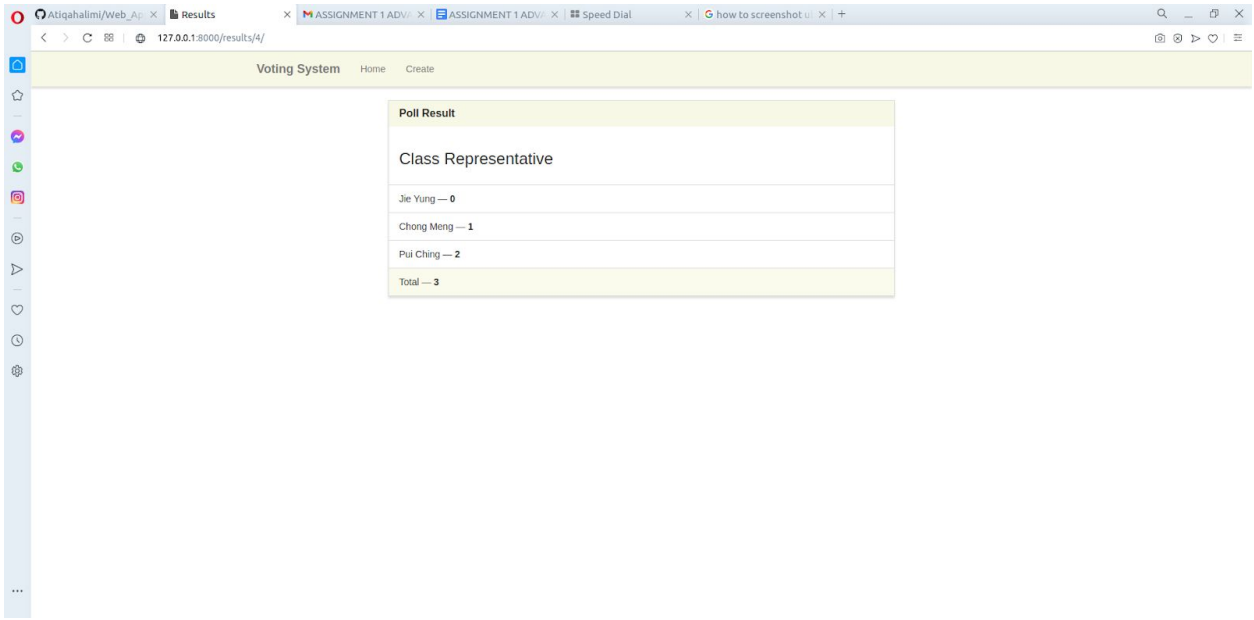

Figure 4.3: The view of the web application for the vote results.

Other than that, this web application also can enable the user to redirect from the create page and voting page to the home page. As demonstrated in Figure 4.4, the home page is created for the user to view the available voting polls.

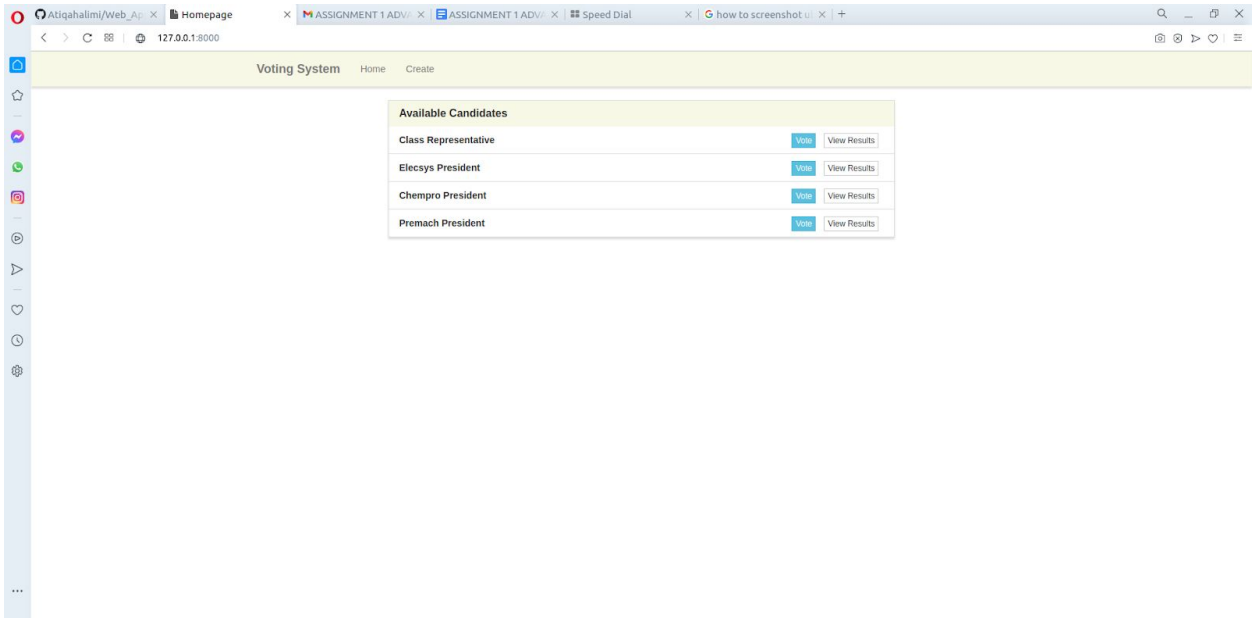

Figure 4.4: The view of the web application for the home page.

As mentioned the purpose of this project is used to vote for the candidates in any club societies in university. However, it also can be improved to a bigger event like the country's election by making some improvement on the programme system. The improvement that can be made for the country's election purpose is that by adding a login page to avoid cheating on the voters, can backup email to reset password, viewing the voting history and any others feature that is acceptable for the voting privacy and security purposes.

5. CONCLUSION

This project is satisfied due to the aim of this project which is to avoid any mass meeting to prevent infections with Covid-19 was accomplished. This project was mainly for university students to conduct club societies' activities smoothly. However, this project can be improved for the country's election purpose. This is because the COVID-19 virus is already in our daily life and the precaution needs to be taken to prevent the infections of COVID-19 virus.

REFERENCES

1. Adam, A., Aizat, S., & Zahid, S. J. (2020, October 14). CMCO Brings Lull to Klang Valley Roads as Public Heeds Call to Limit Travel: Malay Mail. Retrieved November 28, 2020, from https://www.malaymail.com/news/malaysia/2020/10/14/cmco-brings-lull-to-klang-valley-roads-as-public-heeds-call-to-limit-travel/1912500
2. Community, T. E. (2020, November 24). Novel Coronavirus Information Center. Retrieved November 28, 2020, from https://www.elsevier.com/connect/coronavirus-information-center
3. Covid-19: Movement Control Order Imposed with Only Essential Sectors Operating: New Straits Times. (2020, March 16). Retrieved November 28, 2020, from https://www.nst.com.my/news/nation/2020/03/575177/covid-19-movement-control-order-imposed-only-essential-sectors-operating
4. First Coronavirus Cases in Malaysia: 3 Chinese Nationals Confirmed Infected, Quarantined in Sungai Buloh Hospital. (2020, January 25). Retrieved November 28, 2020, from https://www.theborneopost.com/2020/01/25/first-coronavirus-cases-in-malaysia-3-chinese-nationals-confirmed-infected-quarantined-in-sungai-buloh-hospital/
5. Herbert, A. (n.d.). CREATING A POLL APP IN DJANGO. Retrieved November 28, 2020, from https://prettyprinted.com/tutorials/creating-a-poll-app-in-django
6. Mahpar, N. (2020, October 14). 96 Roadblocks Set Up Across Klang Valley as CMCO Takes Effect. Retrieved November 28, 2020, from https://www.freemalaysiatoday.com/category/nation/2020/10/14/96-roadblocks-set-up-across-klang-valley-as-cmco-takes-effect/
7. Malaysia's Sabah State Urged to Consider Postal Voting for Election. (2020, August 09). Retrieved November 28, 2020, from https://www.scmp.com/week-asia/politics/article/3096610/malaysias-sabah-state-urged-consider-postal-voting-election-due
8. PrettyPrinted. (2020, February 11). PrettyPrinted/youtube_video_code. Retrieved November 28, 2020, from

https://github.com/PrettyPrinted/youtube_video_code/tree/master/2020/02/11/Creating%20a%20Poll%20App%20in%20Django

9. Sabah Election Spurred Malaysia virus surge, says prime minister. (2020, October 07). Retrieved November 28, 2020, from https://www.scmp.com/week-asia/health-environment/article/3104421/coronavirus-malaysia-pm-blames-sabah-election-among
10. The Star Online. (2020, September 25). Mitigating a Covid-19 Spike During The Sabah State Election. Retrieved November 28, 2020, from https://www.thestar.com.my/opinion/letters/2020/09/25/mitigating-a-covid-19-spike-during-the-sabah-state-election
11. Times, N. S. (2020, January 25). [Breaking] 3 Coronavirus Cases Confirmed in Johor Baru: New Straits Times. Retrieved November 28, 2020, from https://www.nst.com.my/news/nation/2020/01/559563/breaking-3-coronavirus-cases-confirmed-johor-baru
12. Weiss, M. R. (2020, May 27). How Coronavirus Started and What Happens Next, Explained. Retrieved November 28, 2020, from https://www.wired.co.uk/article/china-coronavirus

APPENDIX

forms.py

```
from django.forms import ModelForm

from .models import Poll

class CreatePollForm(ModelForm):
    class Meta:
        model = Poll
        fields = ['question', 'option_one', 'option_two', 'option_three']
```

models.py

```
from django.db import models

class Poll(models.Model):
    question = models.TextField()
    option_one = models.CharField(max_length=30)
    option_two = models.CharField(max_length=30)
    option_three = models.CharField(max_length=30)
    option_one_count = models.IntegerField(default=0)
    option_two_count = models.IntegerField(default=0)
    option_three_count = models.IntegerField(default=0)

    def total(self):
        return self.option_one_count + self.option_two_count + self.option_three_count
```

urls.py

```
from django.contrib import admin
from django.urls import path

from poll import views as poll_views

urlpatterns = [
    path('admin/', admin.site.urls),
    path('', poll_views.home, name='home'),
    path('create/', poll_views.create, name='create'),
    path('vote/<poll_id>/', poll_views.vote, name='vote'),
    path('results/<poll_id>/', poll_views.results, name='results'),
]
```

views.py

```
from django.shortcuts import render, redirect
from django.http import HttpResponse

from .forms import CreatePollForm
from .models import Poll

def home(request):
    polls = Poll.objects.all()
    context = {
        'polls' : polls
    }
    return render(request, 'poll/home.html', context)

def create(request):
    if request.method == 'POST':
        form = CreatePollForm(request.POST)
        if form.is_valid():
            form.save()
            return redirect('home')
    else:
        form = CreatePollForm()
    context = {
        'form' : form
    }
    return render(request, 'poll/create.html', context)

def vote(request, poll_id):
    poll = Poll.objects.get(pk=poll_id)

    if request.method == 'POST':

        selected_option = request.POST['poll']
        if selected_option == 'option1':
            poll.option_one_count += 1
        elif selected_option == 'option2':
            poll.option_two_count += 1
        elif selected_option == 'option3':
            poll.option_three_count += 1
        else:
            return HttpResponse(400, 'Invalid form')

        poll.save()

        return redirect('results', poll.id)

    context = {
        'poll' : poll
```

```
    }
    return render(request, 'poll/vote.html', context)

def results(request, poll_id):
    poll = Poll.objects.get(pk=poll_id)
    context = {
        'poll' : poll
    }
    return render(request, 'poll/results.html', context)
```