

ONLINE STUDENT COUNCIL ELECTION SYSTEM

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Software Design Descriptions

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1. Introduction

We want to develop a system that will automate the IZTECH Student Council elections. Therefore, we want this system to do all the operations done in a physical election. In addition to these, we want this system to be used for processes such as receiving candidacy applications before the election, announcements, and qualification control of representatives after the election.

1.1 Purpose

The purpose of the Software Design Explanation document is to explain the IZTECH Online Election System in detail. In this document, we will discuss the purpose of the system, its features, how it works, used, how it will behave and change under different conditions, its interfaces and by whom this system will be used and will be the beneficiary. The aim of this project is to develop a web application where students can vote, and upload their candidacy application documents, representatives can upload their qualification control documents, so they can do these activities online instead of physically.

1.2 Scope

A web-based system with two types of users will be introduced to use our online selection system. The first user type is students. They vote to elect department representatives. Students selected as department or faculty representatives have different authorities. For example, only department representatives can vote for faculty representative candidates. The second user type is university administration. They control candidacy application for department representative, election result, representatives' qualification control documents.

1.3 Context

The aim of the project is to automate the election process via web application. The application will be created by considering the benefit of students, university administration and stakeholders being in mind. This project will be implemented with JavaScript Frameworks. Database will be used for store students' information.

1.4 Summary

This Software Design Description document describes and provides a general overview on the structure, design, and implementation details for our project "Online Election System for IZTECH."

2. References

Group 8 Problem Analysis Report
Group 8 Software Project Management Plan
Group 8 Software Requirement Specification
CENG316-Lecture03-SDD

3. Glossary

University Administration: University's board of directors from the lowest to the highest. (Rectorate, dean's departments, etc.)

Candidates: Students who are candidates for department representation User: All people who can view the site, regardless of whether they are logged in or not.

Election: Student Council Election System: The implemented version of the online election system. A website.

Database: The environment in which the system will store all the data in it.

İYTE ÖBS: İzmir Yüksek Teknoloji Enstitüsü Öğrenci Bilgi Sistemi (İzmir Institute of Technology Student Information System)

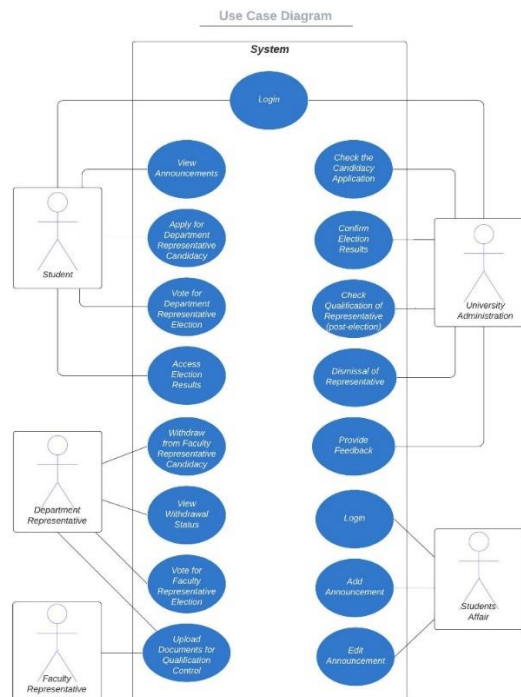
Representatives: It is the student body whose department representation is approved after the election. Therefore, it is clear that the relationship of the representatives with ,the system is through students and candidates.

4. Viewpoints

4.1 Identified stakeholders and design concerns.

Our project stakeholders are Tanıl Levent (Faculty Secretary) and İlgin Efetürk (President of the Student Council). The online election system should be designed to be user-friendly, reliable and also easy to update & maintain.

4.2 Context Viewpoint



4.3 Informational Viewpoint

Election System: System provides an online voting platform for IZTECH students.

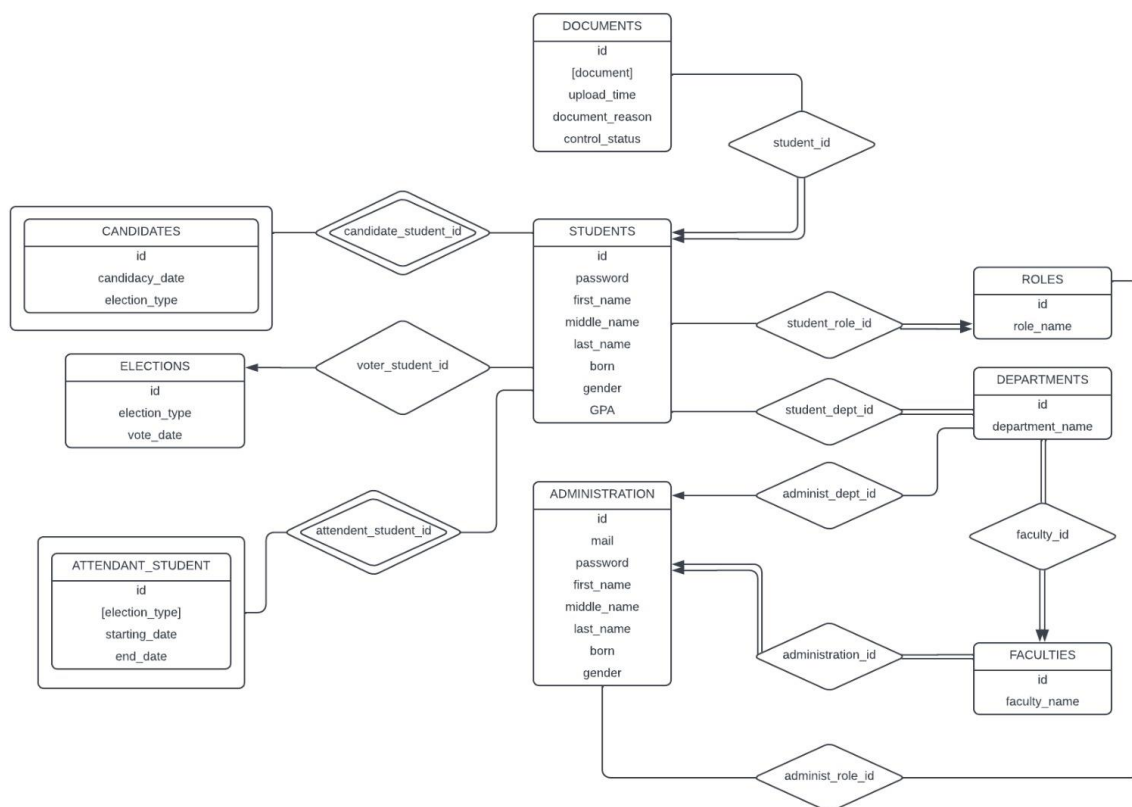
Students: They will assume the role of user, which is the most important part of the system. It is the user community that will interact with the system interface and benefit from the system.

University Administration: It is the university's board of directors from the lowest to the highest. (Rectorate, dean's departments, student affairs department, etc.) It is the important factor for the system, event controls, instructions and procedures are provided from this domain.

Candidates: They are defined as a subset of the student's domain. Candidates for department representatives are indirectly connected to this system on students.

Representatives: It is the student body whose department representation is approved after the election. Therefore, it is clear that the relationship of the representatives with the system is through students and candidates.

The ER diagram is given below.



4.4 Interface Viewpoints

Figure-1) Login Portal for Student and University Staff Entry

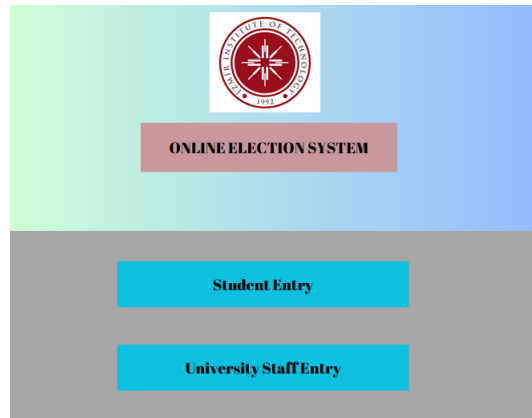


Figure-2) Login Interface for Students

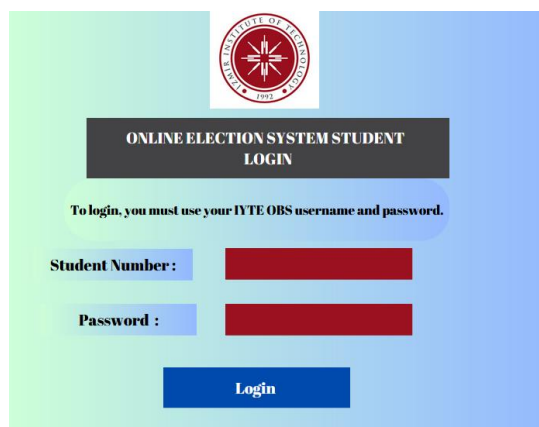


Figure-3) Login Interface for University Staff

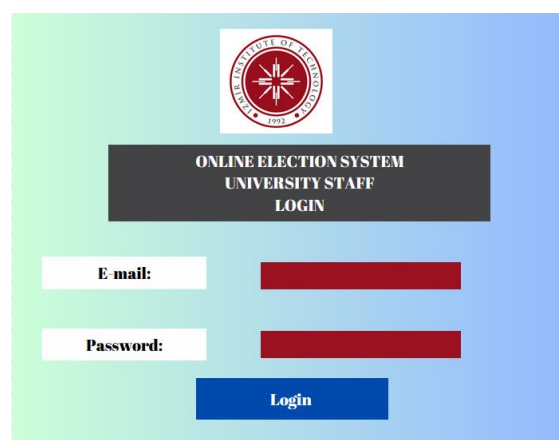


Figure-4) Student's Home Page Interface

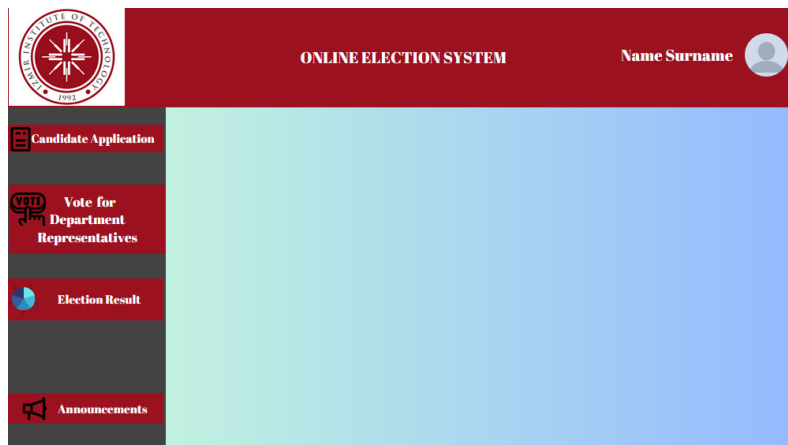


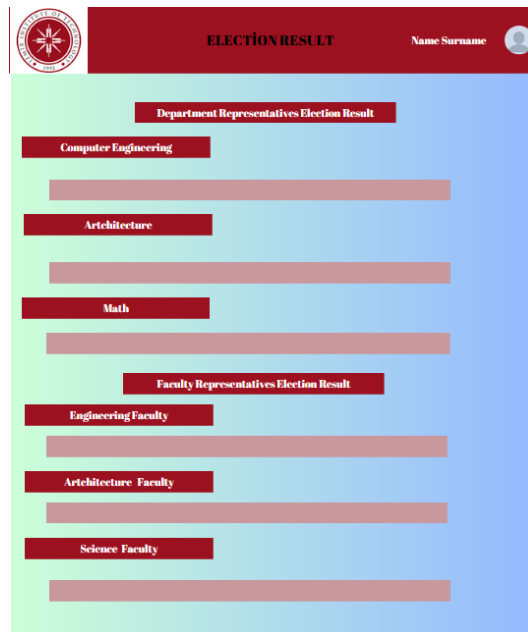
Figure-5) Candidate application interface for department representative

Name:	<input type="text"/>	Criminal Report	<input type="text"/> upload
Student Number:	<input type="text"/>	Student Certificate	<input type="text"/> upload
Major:	<input type="text"/>	Member or official in political party organ	<input type="text"/>
Grade:	<input type="text"/>		
Year:	<input type="text"/>		
<input type="button" value="Submit"/>			

Figure-6) Students' Voting Interface for Department Representative

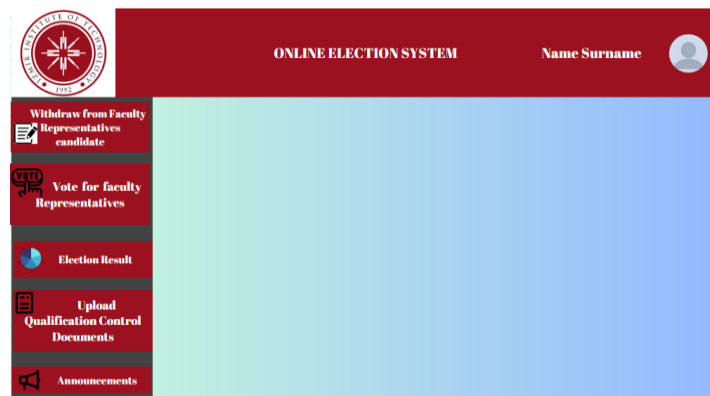
Candidates	Candidates's info	Vote
<input type="text"/>	<input type="text"/>	<input type="button" value="VOTE"/>
<input type="text"/>	<input type="text"/>	<input type="button" value="VOTE"/>
<input type="text"/>	<input type="text"/>	<input type="button" value="VOTE"/>
<input type="button" value="SUBMIT"/>		

Figure-7) Election Result Interface



The interface features a dark red header with the university logo on the left, the text "ELECTION RESULT" in the center, and a user profile icon with the label "Name Surname" on the right. The main content area has a light blue background. It contains two sections: "Department Representatives Election Result" and "Faculty Representatives Election Result". Each section lists departments (Computer Engineering, Architecture, Math, Engineering Faculty, Architecture Faculty, Science Faculty) with corresponding horizontal bars representing election results.

Figure-8) Department Representative Home Page Interface



The interface has a dark red header with the university logo on the left, the text "ONLINE ELECTION SYSTEM" in the center, and a user profile icon with the label "Name Surname" on the right. The main content area has a light blue background. On the left side, there is a vertical sidebar with five buttons: "Withdraw from Faculty Representatives candidate", "Vote for faculty Representatives", "Election Result", "Upload Qualification Control Documents", and "Announcements".

Figure-9) Interface for department representative can withdraw from faculty representative's candidacy.



The interface features a dark red header with the university logo on the left, the text "Withdraw from Faculty Representatives Candidate" in the center, and a user profile icon with the label "Name Surname" on the right. The main content area has a light blue background. It contains a text box with the instruction: "If you wanna withdraw from faculty representatives' candidates, please fill out why you want to withdraw and press submit button." Below the text box is a large, empty rectangular area for input. A blue "Submit" button is located at the bottom right.

Figure-10) Department Representatives' Voting Interface for Faculty Representative

The interface features a dark red header with the Sakarya University of Education logo on the left, the title "Vote for Faculty Representatives" in the center, and a user profile section on the right labeled "Name Surname" with a placeholder icon. The main content area has a light blue background and is divided into three columns: "Candidates", "Candidates's info", and "Vote". Each column contains three rows of grey rectangular placeholders. To the right of each row in the "Vote" column is a green "VOTE" button. At the bottom right of the main area is a blue "SUBMIT" button.

Figure-11) Interface for uploading qualification control document of representatives.

The interface has a dark red header with the Sakarya University of Education logo, the title "UPLOAD QUALIFICATION CONTROL DOCUMENTS", and a user profile section labeled "Name Surname" with a placeholder icon. The main area has a light blue background and contains several input fields. On the left, there are five rows of labels with corresponding grey input boxes: "Name:", "Student Number:", "Major:", "Grade:", and "Year:". On the right, there are three rows of labels with corresponding grey input boxes and "upload" buttons: "Criminal Report", "Student Certificate", and "Member or official in political party organ". A blue "Submit" button is located at the bottom right.

Figure-12) University Staff Home Page Interface

The interface features a dark red header with the Sakarya University of Education logo on the left, the title "ONLINE ELECTION SYSTEM" in the center, and a user profile section on the right labeled "Name Surname" with a placeholder icon. The main content area has a light blue background. On the left side, there is a dark red sidebar with three menu items, each with a document icon and a checkmark: "Check Candidancy Application", "Confirm Election Result", and "Check Qualification Documents of Representatives".

Figure-13) University Staffs Check Students' Candidate Application for Department Representatives Interface



Name	Student's info	Confirmation
Berkan Gonulsever	berkan_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Enes Demirel	enes_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Fatih Yelboğa	fatih_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Gökay Gülsöy	gokay_info	<input checked="" type="checkbox"/> <input type="checkbox"/>

Figure-14) University Staffs Check Qualification Control Documents of Representatives Interface



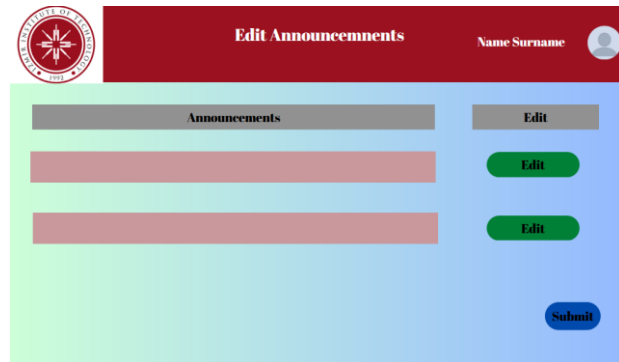
Name	Representatives' info	Confirmation
Berkan Gonulsever	berkan_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Enes Demirel	enes_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Fatih Yelboğa	fatih_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Gökay Gülsöy	gokay_info	<input checked="" type="checkbox"/> <input type="checkbox"/>

Figure-15) University Staffs Confirms or not Election Results Interface



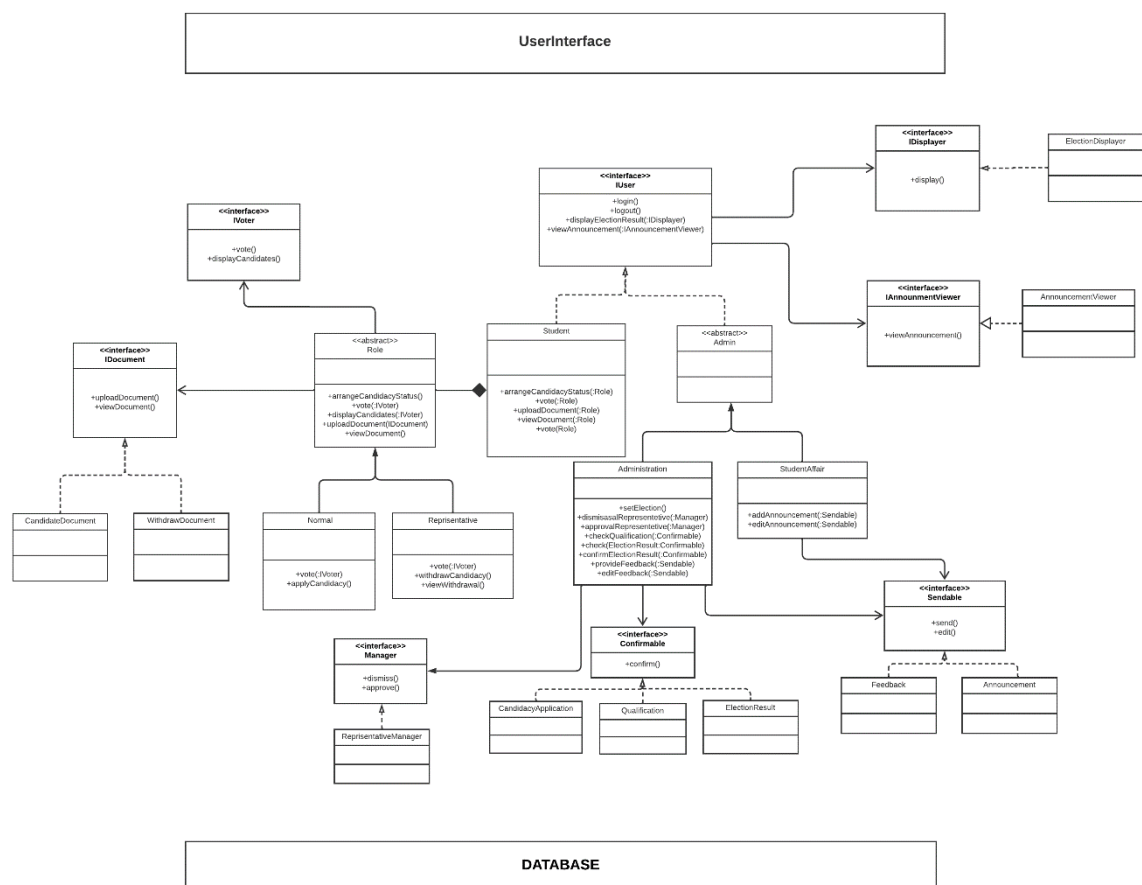
Department Name	Election Result Info	Confirmation
Computer Engineering	com_eng_election_result_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Bioengineering	bio_eng_election_result_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Architecture	arch_election_result_info	<input checked="" type="checkbox"/> <input type="checkbox"/>
Math	math_election_result_info	<input checked="" type="checkbox"/> <input type="checkbox"/>

Figure-16) University Staff's Editing Announcements Interface



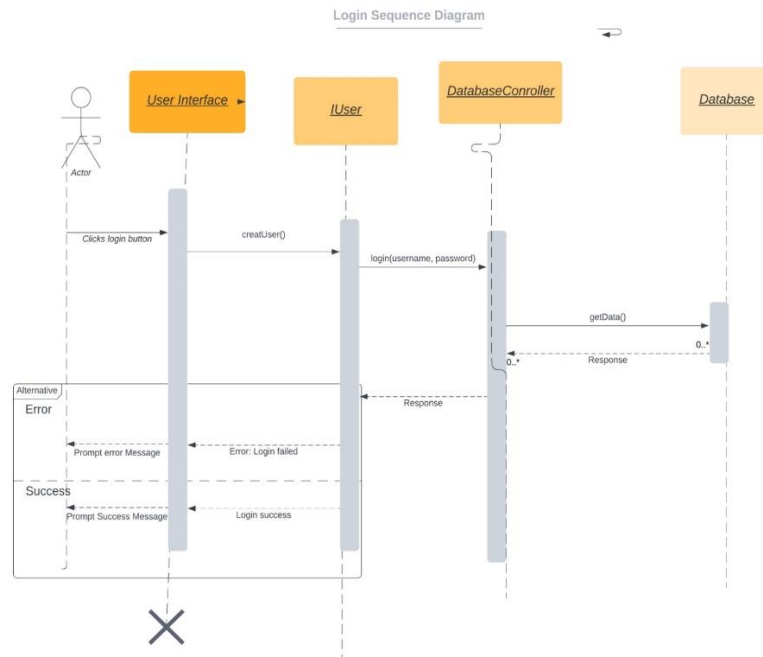
4.5 Logical Viewpoint

The UML Class Diagram is given below.

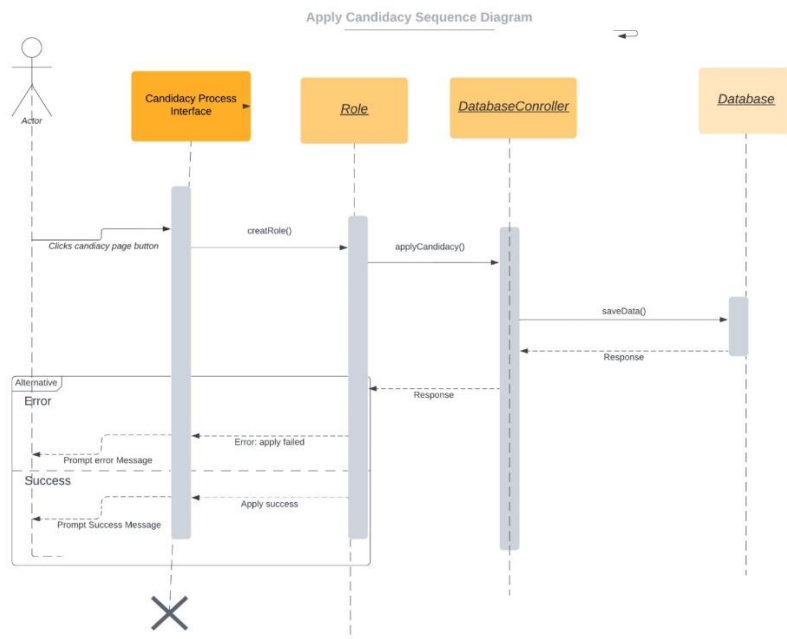


4.6 Interaction Viewpoint

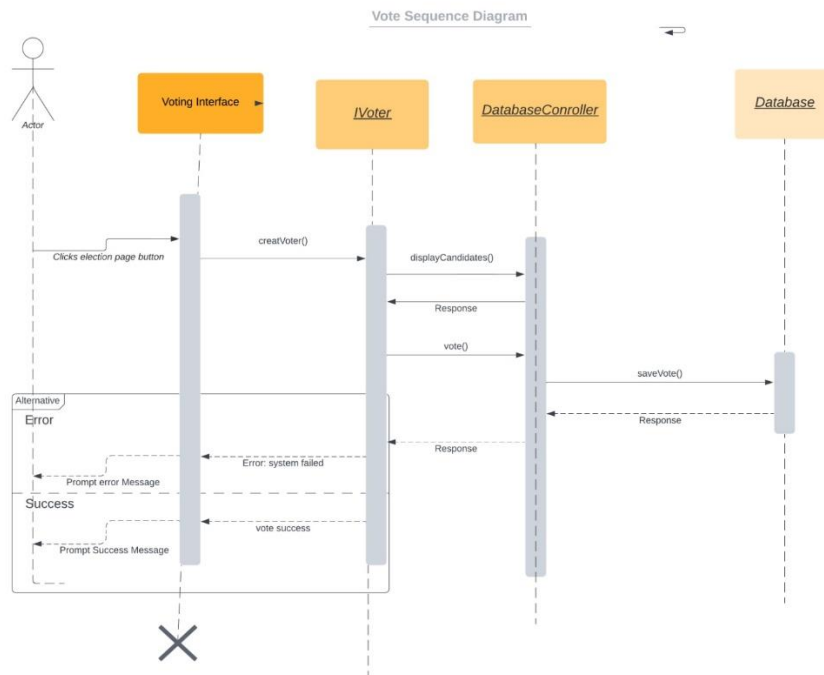
4.6.1 Login Sequence Diagram



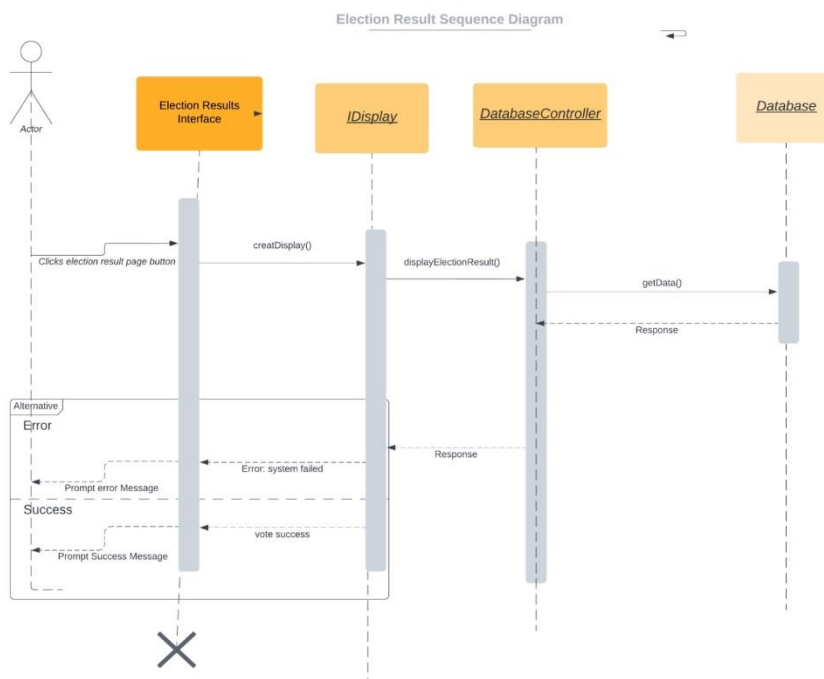
4.6.2 Apply Candidacy Sequence Diagram



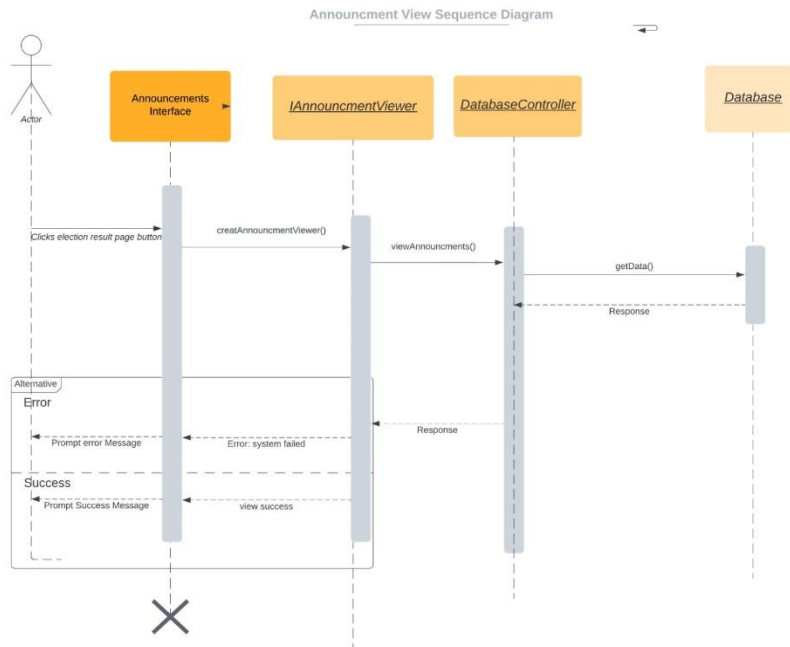
4.6.3 Vote Sequence Diagram



4.6.4 Election Result Sequence Diagram



4.6.5 Announcement View Sequence Diagram



4.7 Design Rationale

All steps we've taken towards the development of this program were intended to contribute to the development with our design concerns, reliability, and simplicity, in mind.