
Software Requirements Specification

for

Online Student Representatives Election System

Version 1.0 approved

Prepared by Group 1

27.11.2022

Table of Contents

| | |
|--|-----------|
| 1. Introduction | 4 |
| 1.1 Purpose | 4 |
| 1.2 Scope | 4 |
| 1.3 Definitions, Acronyms, and Abbreviations | 4 |
| 1.4 References | 5 |
| 1.5 Overview | 5 |
| 2. Overall Description | 5 |
| 2.1 Product Perspective | 5 |
| 2.2 Product Functions | 6 |
| 2.3 User Characteristics | 9 |
| 2.4 Constraints | 10 |
| 2.5 Assumptions and Dependencies | 10 |
| 2.6 Apportioning of Requirements | 11 |
| 3. Specific Requirements | 12 |
| 3.1 Use Cases | 13 |
| 3.1.1 User Use Cases | 13 |
| 3.1.2 Admin Use Cases | 17 |
| 3.1.3 Voter Use Cases | 22 |
| 3.1.4 Department Representative Use Cases | 24 |
| 3.1.5 Candidate Use Cases | 27 |
| 3.2 Pages | 28 |
| 3.2.1 [Figure 1] - Login Page | 28 |
| 3.2.2 [Figure 2] - Logout | 28 |
| 3.2.3 [Figure 3] - Main Page | 29 |
| 3.2.4 [Figure 4] - Profile Page | 29 |
| 3.2.5 [Figure 5] - Announcement Page | 31 |
| 3.2.6 [Figure 6] - Election Results | 31 |
| 3.2.7 [Figure 7] - Election Creation Page | 32 |
| 3.2.8 [Figure 8] - Election Page | 32 |
| 3.2.9 [Figure 11] - Voting Page | 34 |
| 3.2.10 [Figure 12] – Ongoing Elections Page | 35 |
| 3.2.11 [Figure 13] – Upcoming Elections Page | 35 |
| 3.2.12 [Figure 14] – Finished Elections Page | 36 |
| 3.3 Popups | 37 |
| 3.3.1 [Popup 1] – Informational Popup | 37 |
| 3.3.2 [Popup 2] – Warning Popup | 37 |
| 3.3.3 [Popup 3] – Success Popup | 38 |
| 3.3.4 [Popup 4] – Error Popup | 38 |

| | |
|---|----|
| 3.4 Toasts | 39 |
| 3.4.1 [Toast 1] – Success Toast | 39 |
| 3.4.2 [Toast 2] – Error Toast | 39 |
| 3.4 External Interfaces | 39 |
| 3.5 Generic Performance/Software Requirements | 39 |
| 3.6 Logical Database Requirements | 42 |
| 3.7 Design Constraints | 42 |
| 3.8 Other Requirements | 43 |

1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed explanation of the Online Student Representatives Election System. It will explain the purpose and features of the system, the interfaces of the system, what the system is intended to do, the constraints under which it must operate and how the system will react to external provocations. This document is intended for both the stakeholders and the developers of the system.

1.2 Scope

The system will be an Online Election System for the students of İYTE. The system will be designed to make the election process of Department Student Representative, Faculty Student Representative, **and the selection process of Student Council President by alphabetical order** easier and faster by providing tools to assist in automation of the election and documentation processes, which otherwise would have to be performed manually. The system is designed to maximize the efficiency of all the responsible parties regarding the election. The system will meet all the requirements of the election process while remaining easy to understand and use. In more detail, the system is designed to allow the students of İYTE to vote in an online manner and to allow the communication of the documents to the responsible personnel. Since the candidate campaigns are out of scope, there will be no webpage reserved for the candidates to introduce themselves.

1.3 Definitions, Acronyms, and Abbreviations

- SRS: Software Requirements Specification
- Election Attendants: Chosen assistants that oversee the election process
- A/B Test: It is a randomized test where two or more versions of a webpage are shown to different website users at the same time to determine which one leaves the maximum required impact.
- VUC: Voter Use Case

- CUC: Candidate Use Case
- SUC: Secretary Use Case
- AUC: Administrator Use Case
- SYUC: System Use Case
- GUC: General Use Case

1.4 References

- IZTECH Student Council Guideline
- YÖK Guidelines
- ISO/IEC 25010:2011

1.5 Overview

The first part of the document has briefly explained what the project was about and gave some details about the scope of the project. The next part (second part) of this document will give an overview of the functionality of the system, it will describe the general perspective of the system, constraints of the system, and the assumptions that have been made. The last part (third part) of this document will explain the specific requirements in detail and will list all the use cases, external interfaces, software requirements, logical database requirements and the design constraints.

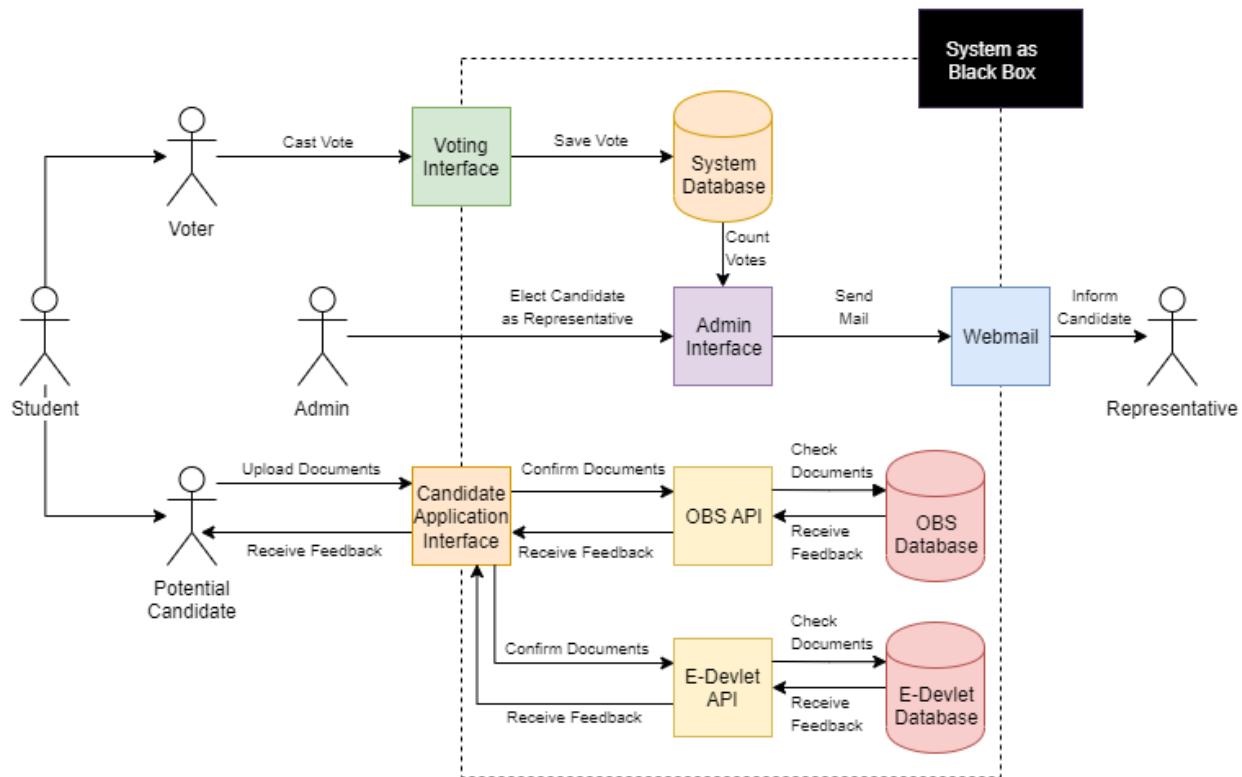
2. Overall Description

2.1 Product Perspective

This system is a replacement of the existing Student Representative Election Process which is done manually unlike our system. After this system is implemented, there will be no need to use the old system anymore. The system has a user interface that allows the voter

students to access the system using their IZTECH accounts and an interface for them to cast their votes. In the authentication of the Candidates/Representative, system will ask the student to provide the code that they were given so that the system knows the account belongs to that user. The system also has an interface for the students that want to become candidates. This interface allows those students to upload their related documents and enter their related information. The system will also communicate with the related system such as EBYS, OBS, E-Devlet for communication and confirmation of the documents presented by the candidate students.

Note: Product Perspective Diagram has been updated (E-Devlet API and Database has been added.)

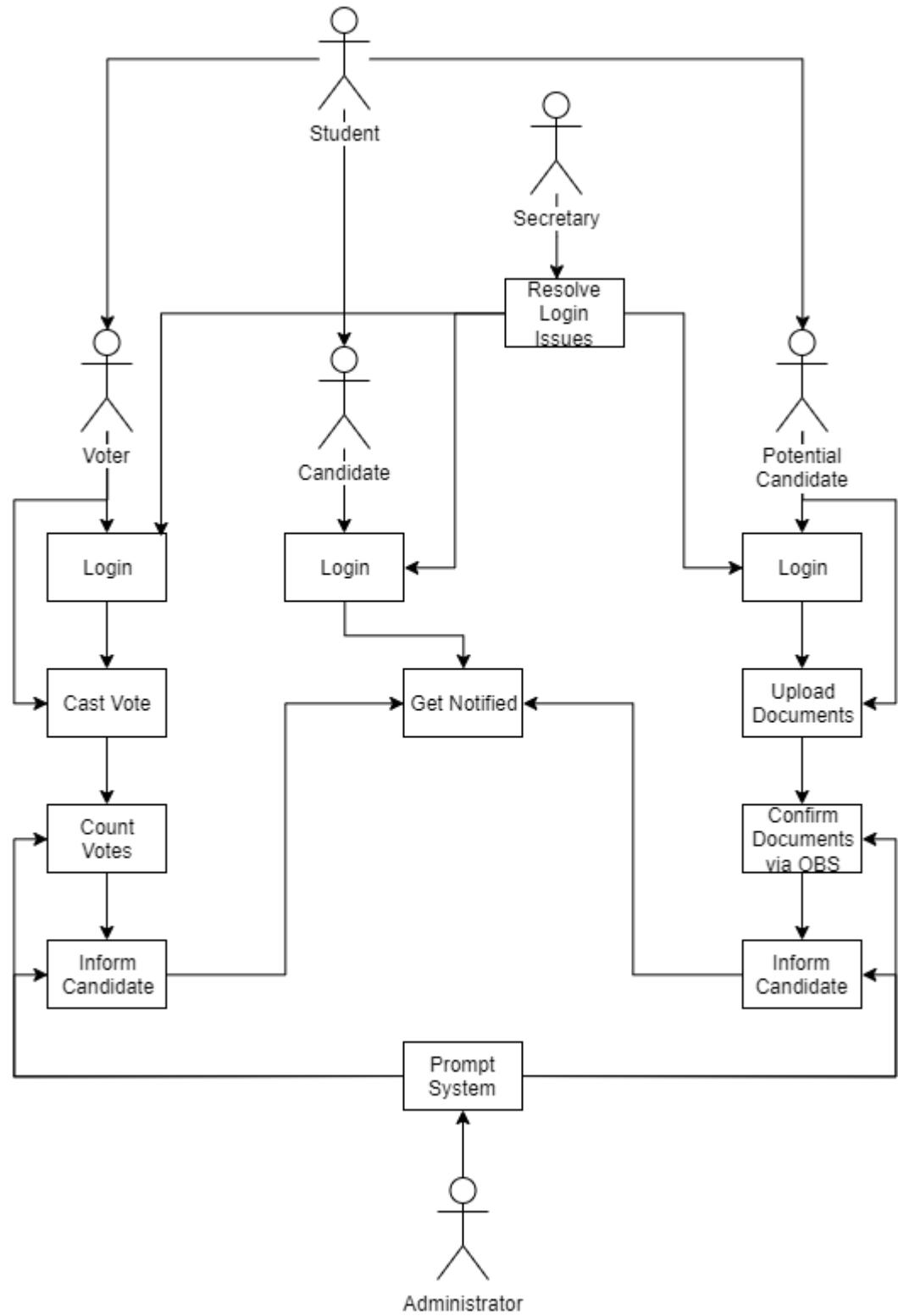


2.2 Product Functions

- Voter and Candidate Login:** Students will be able to login to the system by using their own IZTECH account username and passwords.

- **Voter Cast Vote:** The students registered as voters will be able to cast their votes for a candidate of their choice.
- **Count Votes (System Automation Function):** The system will be able to automatically count the votes and determine the representative.
- **Communicate Documents:** The system will be able to communicate the related documents to the responsible personnel via webmail.
- **Inform Students (System Automation Function):** The system will be able to inform students about various developments via webmail.
- **Upload Documents:** The system will allow students to upload related documents to become candidates.
- **Confirm Documents:** The documents will be able to be confirmed by communicating them to OBS.
- **Resolve Login Issues:** The department secretary will be able to resolve the issues about various user logins.
- **Deletion of Candidates:** The chosen administrator will be able to delete candidates/representatives either because they lost the right to be a candidate/representative or because candidate/representative withdrew from their role.
- **The Action of Prompting the System to do Various Things:** The administrator has the ability to prompt the system for it to do various automated actions that have been explained more in dept in use case section.

Note: Product Functions Diagram has been updated.



2.3 User Characteristics

- **The Voter**
 - They are expected to be students of İYTE. They will also be expected to know how to use the Internet since they will have to access and use the website on their own.
- **The Candidate**
 - They are expected to be a student of İYTE who has enrolled in at least the second year of the relevant faculty, to not be a member or official in political party organ, to not have a criminal record due to disgraceful crimes, to not have taken any disciplinary punishment other than warning, to not have frozen their registration at the time of the election, to have a GPA of 2.75 or higher (out of 4) and not to have any affiliation with a terrorist organization.
 - Types of Candidates:
 - Department Representative Candidate
 - Faculty Representative Candidate
 - Student Council President Candidate
- **The Representative**
 - They are candidates that have been chosen by either an election or a selection. The expectations regarding these users are the same as the candidates.
 - Types of Representatives:
 - Department Representative
 - Faculty Representative
 - Student Council Representative
- **The Secretary**
 - They are expected to know how to use the Internet and have experience on using various systems such as EBYS and Webmail.
 - Types of Secretaries:
 - Department Secretary
 - Faculty Secretary
- **The Administrator**
 - He/she is expected to be an expert on using the Internet and the system itself because their job is to grant access to related interfaces for related parties, to observe the process and intervene if an unexpected situation arises.

2.4 Constraints

- **YÖK Guidelines**
 - Even though our system will be online unlike the old system, we must still follow the guidelines of YÖK regarding the old system such as electing some assistants as Election Attendants even though there is no such necessity.
- **E-Devlet Limitations**
 - Not every document will be able to be confirmed as accurate because of the limitation of the E-Devlet interface.
- **OBS Limitations**
 - Approval of some documents is limited to the access granted by the OBS.
- **Privacy of the Voters and Candidates**
 - The votes must be anonymous, and the information and the related documents of the candidates shall remain private.

2.5 Assumptions and Dependencies

- The number of users accessing the system in a time period will not drastically change over the years.
- The guidelines of YÖK will not change.
- A domain will be provided for running the website on.
- Required number of personnel will be satisfied.
- There will at least be one student per department willing to and have the required specifications to become a candidate.

2.6 Apportioning of Requirements

- **Primary:**

- Voter Login
- Candidate Login
- Administrator Login
- Secretary Login
- Candidate Document Upload
- Communicate Documents
- Confirm Documents
- Voter Cast Vote
- Count Votes
- Inform Candidates

- **Secondary:**

- Provide the Security Code to Candidates
- Make Announcements to Students

- **Tertiary:**

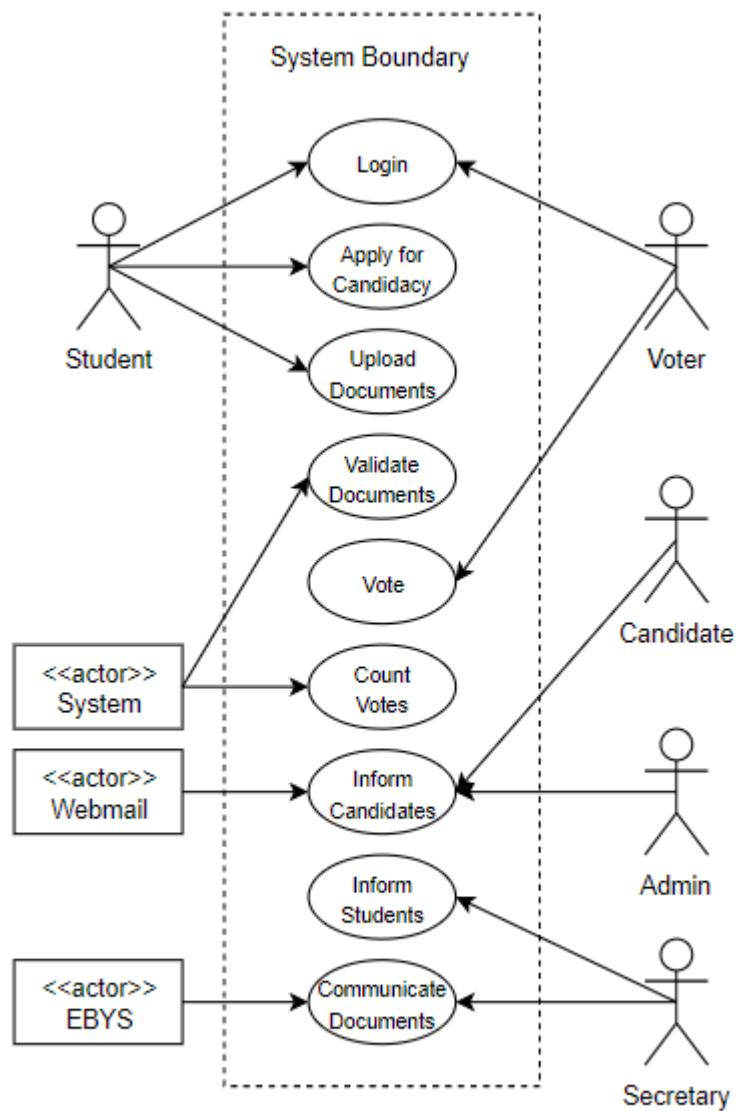
- Deal with Unsuccessful Login
- Manually Grant Access to Candidate

- **Other:**

- The implementation of a personal page for candidates to introduce themselves may be delayed until future versions of the system since it is out of scope for now.

3. Specific Requirements

- Use Case Diagram



3.1 Use Cases

IMPORTANT NOTE: For all use cases, the system has been removed from the actor list and since the system is not an actor anymore, the actions that the system performed automatically, has been distributed to various actors for them to prompt the system to perform those actions.

3.1.1 User Use Cases

| | | | |
|--------------------------|--|--------------------|-----------------------|
| Use Case ID: | UUC1 | | |
| Use Case Name: | User Login to System | | |
| Created By: | Alper Kaan Gayretoğlu | Last Updated By: | Alper Kaan Gayretoğlu |
| Date Created: | 13.11.2022 | Date Last Updated: | 08.04.2023 |
| Actor: | User | | |
| Description: | The action that every user must take to be able to login to the system. | | |
| Preconditions: | The user is a member of IZTECH. | | |
| Postconditions: | The user has logged in to the system. | | |
| Priority: | High | | |
| Frequency of Use: | All the users of the system İYTE, so approximately 7000, average of 100 per day, probably 6000 at the election day. | | |
| Normal Course of Events: | 1. User enters the URL of the website to their search engine of choice. 2. User enters the website. 3. System asks the user for their IZTECH account name and password. 4. User enters their IZTECH account name and password. 5. System allows access to the website. 6. User has logged in and now can use the website. | | |
| Alternative Courses: | 5a. User has entered invalid account name and/or password. <ol style="list-style-type: none"> 1. The system notifies the user about the error and gives at most 3 more chances. 2. User has still not been able to enter a valid account name and/or password. 3. System times out the user for 10 minutes. | | |
| Exceptions: | 1. Website is unable to respond in at most 10 seconds. <ul style="list-style-type: none"> • Display an error message to the user to let them know about the issue and inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | The user is the owner of the account that they are trying to login. | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|---|--------------------|-----------------------|
| Use Case ID: | UUC2 | | |
| Use Case Name: | User Logout from System | | |
| Created By: | Ismail Günay | Last Updated By: | Alper Kaan Gayretoğlu |
| Date Created: | 26.11.2022 | Date Last Updated: | 08.04.2023 |
| Actor: | User | | |
| Description: | The action that every user must take to end the session. | | |
| Preconditions: | The user is logged in to the system. | | |
| Postconditions: | The session has ended. | | |
| Priority: | High | | |
| Frequency of Use: | Every user of the system. | | |
| Normal Course of Events: | 1. The user clicks the 'Logout' button. 2. The user is logged out. 3. The login page appears and is ready for the user to login again. | | |
| Alternative Courses: | None | | |
| Exceptions: | 1. Website is unable to respond in at most 10 seconds. <ul style="list-style-type: none"> • Display an error message to the student to let them know about the issue and inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|--|--------------------|--------------------|
| Use Case ID: | UUC3 | | |
| Use Case Name: | User views his/her profile | | |
| Created By: | Muhammed Efe İncir | Last Updated By: | Muhammed Efe İncir |
| Date Created: | 08.04.2023 | Date Last Updated: | 08.04.2023 |
| Actor: | User | | |
| Description: | User clicks his/her name which is on the top left in the welcome menu. | | |
| Preconditions: | User must be logged into the system.. | | |
| Postconditions: | User sees his/her profile. | | |
| Priority: | Low | | |
| Frequency of Use: | Whenever the user wants. | | |
| Normal Course of Events: | 1. User clicks the 'Profile' button 2. User sees the information about himself/herself . | | |
| Alternative Courses: | None | | |
| Exceptions: | 1. Website is unable to respond in at most 10 seconds. • Display an error message to the student to let them know about the issue and inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | System can reach to OBS and E-Devlet | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|---|--------------------|--------------|
| Use Case ID: | UUC4 | | |
| Use Case Name: | See Election Results | | |
| Created By: | Ismail Günay | Last Updated By: | Ismail Günay |
| Date Created: | 26.11.2022 | Date Last Updated: | 08.04.2023 |
| Actor: | User | | |
| Description: | The action that every user can take to see the results of the election. | | |
| Preconditions: | All rounds of the election are done and the results are announced. | | |
| Postconditions: | The user is informed about the election results | | |
| Priority: | High | | |
| Frequency of Use: | All the users of the system İYTE, so approximately 7000, average of 100 per day, probably 6000 at the election day. | | |
| Normal Course of Events: | 1. User enters the announcement page. 2. User reads the results | | |
| Alternative Courses: | None | | |
| Exceptions: | 1. Website is unable to respond in at most 10 seconds. • Display an error message to the user to let them know about the issue and inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

3.1.2 Admin Use Cases

| | | | |
|--------------------------|---|--------------------|-----------------------|
| Use Case ID: | AUC1 | | |
| Use Case Name: | Create Election | | |
| Created By: | Alper Kaan Gayretoğlu | Last Updated By: | Alper Kaan Gayretoğlu |
| Date Created: | 08.04.2023 | Date Last Updated: | 08.04.2023 |
| Actor: | Admin | | |
| Description: | Admin creates a new election. | | |
| Preconditions: | Admin is logged in. | | |
| Postconditions: | The election has been created. | | |
| Priority: | High | | |
| Frequency of Use: | Once for every election. | | |
| Normal Course of Events: | 1. Admin presses the button that will forward them to the election creation page. 2. Admin enters the required parameters for the creation of the election. (Like date, time and election type etc.) 3. Admin presses the button indicating that they have finished creating an election and sends the information to the system. 4. System receives the information, and a new election is created. | | |
| Alternative Courses: | 3a. Admin has entered missing/invalid information. 1. System prompts the admin to enter the missing/invalid information again. 2. (Flow continues from the Normal Course of Events 4.) | | |
| Exceptions: | 1. Website is unable to respond in at most 10 seconds. • Display an error message to inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|---|--------------------|--------------------|
| Use Case ID: | AUC2 | | |
| Use Case Name: | Announcement of the election date to students | | |
| Created By: | Muhammed Efe İncir | Last Updated By: | Muhammed Efe İncir |
| Date Created: | 08.04.2023 | Date Last Updated: | 08.04.2023 |
| Actor: | Admin and System | | |
| Description: | Admin announces the election date to students | | |
| Preconditions: | An election must exist | | |
| Postconditions: | Announcement has been made | | |
| Priority: | Low | | |
| Frequency of Use: | Before every election starts | | |
| Normal Course of Events: | 1. Admin creates an election. 2. Admin presses the button indicating that they want to announce the election | | |
| Alternative Courses: | None | | |
| Exceptions: | 1. Website is unable to respond in at most 10 seconds. <ul style="list-style-type: none"> • Display an error message to the student to let them know about the issue and inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | System can reach to OBS | | |
| Notes and Issues: | None | | |

| | | |
|--------------------------|---|--------------------|
| Use Case ID: | AUC3 | |
| Use Case Name: | Select the President of the Student Council Alphabetically | |
| Created By: | Kürşat Çağrı Yakıcı | Last Updated By: |
| Date Created: | 08.04.2023 | Date Last Updated: |
| Actor: | Admin | |
| Description: | After the faculty representatives are chosen, president of the student council is concluded. This is done by checking the alphabetical order of the faculties and assigning the faculty representative in next order as the president. The faculty, whose representative is chosen as student council president, is iterated in every election that takes places every two years. | |
| Preconditions: | Faculty representative election must be completed. Admin must be logged in to the system. | |
| Postconditions: | President of the student council is assigned. President will now be visible in the election results page. Election process is completed. | |
| Priority: | High | |
| Frequency of Use: | Once per each election | |
| Normal Course of Events: | <ol style="list-style-type: none"> 1. Admin views the current faculty representatives. 2. Chooses the next student council president according to the alphabetical order of the faculty names. 3. Confirms the selection. | |
| Alternative Courses: | None | |
| Exceptions: | None | |
| Includes: | None | |
| Special Requirements: | None | |
| Assumptions: | Admin has internet connection and a device which he/she can access the system | |
| Notes and Issues: | None | |

| | | | |
|--------------------------|---|--------------------|-----------------------|
| Use Case ID: | AUC4 | | |
| Use Case Name: | Re-election Process | | |
| Created By: | Yaşar Mehmet Bağdatlı | Last Updated By: | Yaşar Mehmet Bağdatlı |
| Date Created: | 26.11.2022 | Date Last Updated: | 09.04.2023 |
| Actor: | Administrator | | |
| Description: | In case the quorum is not achieved, re-election is held. | | |
| Preconditions: | Admin logs in The representative of the department could not be elected because the majority of the votes could not be obtained. | | |
| Postconditions: | Re-election held for student representative election system | | |
| Priority: | High | | |
| Frequency of Use: | Minimum 0 times at per department election, maximum 2 times at per department election. | | |
| Normal Course of Events: | 1. Election system ends. (1st or 2nd election is meant. If a quorum is obtained in the 1st election, the 2nd election is not considered) and each department the data of the votes are taken from the database to count. 2. Since a sufficient majority is not achieved, a decision is made to hold a re-election. 3. Voting system re-initializes. | | |
| Alternative Courses: | 2a. As a result of repeating the election more than 2 times, the representative is elected as the one who receives the most votes compared to the others. Otherwise, the candidate with the majority wins the election. | | |
| Exceptions: | None | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|---|--------------------|-----------------------|
| Use Case ID: | AUC5 | | |
| Use Case Name: | End Election | | |
| Created By: | Alper Kaan Gayretoğlu | Last Updated By: | Yaşar Mehmet Bağdatlı |
| Date Created: | 13.11.2022 | Date Last Updated: | 09.04.2023 |
| Actor: | Administrator | | |
| Description: | Voting process has ended. By looking at the votes, the result of the vote is announced. | | |
| Preconditions: | The time allotted for students to vote has expired. | | |
| Postconditions: | Votes are counted by the system and the administrator has been informed. | | |
| Priority: | High | | |
| Frequency of Use: | At most 9 times, 3 per election. | | |
| Normal Course of Events: | 1. The initialized election process is finished by the administrator. 2. System automatically counts the votes. 3. System gets the results. 4. The system announces the election result to users. | | |
| Alternative Courses: | None | | |
| Exceptions: | 1. Admin has not ended the voting system. <ul style="list-style-type: none"> • The voting system is repeated on another specified date. 2. System is unable to count the votes. <ul style="list-style-type: none"> • Inform the admin about the issue. 3. The system has not gotten election results. <ul style="list-style-type: none"> • Inform the admin about the issue. 4. The system has not announced the election result to users. <ul style="list-style-type: none"> • Inform the admin about the issue. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

3.1.3 Voter Use Cases

| | | | |
|--------------------------|--|--------------------|--------------------|
| Use Case ID: | VUC1 | | |
| Use Case Name: | Create A Candidacy Application | | |
| Created By: | Muhammed Efe İncir | Last Updated By: | Muhammed Efe İncir |
| Date Created: | 08.04.2023 | Date Last Updated: | 08.04.2023 |
| Actor: | Voter | | |
| Description: | The student who wants to be a candidate can perform the necessary steps via the system such as check the required documents and fill the candidacy text. | | |
| Preconditions: | The user is a member of IZTECH. Student logged in to the system | | |
| Postconditions: | Candidacy Application Created | | |
| Priority: | High | | |
| Frequency of Use: | Every time up to 1 week before the election | | |
| Normal Course of Events: | 1. User clicks the 'BE CANDIDATE' button 2. User enters the website. 3. User fills candidacy text 4. User press the check the documents button (criminal report, gpa etc.) 5. System checks documents via OBS and E-Devlet API 6. User press the submit button. 6. System display a text about candidacy application approval. | | |
| Alternative Courses: | None | | |
| Exceptions: | 1. Candidacy text cannot be null <ul style="list-style-type: none"> • Display an error message to the user to let them know about the issue | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | System can reach to OBS and E-Devlet API | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|--|--------------------|--|
| Use Case ID: | VUC2 | | |
| Use Case Name: | Voter Casts a Vote | | |
| Created By: | Tuğçe Türkmenler | Last Updated By: | |
| Date Created: | 07.04.2023 | Date Last Updated: | |
| Actor: | Voter | | |
| Description: | When it's time for the election, voter cast vote. | | |
| Preconditions: | <ul style="list-style-type: none"> • The designated time to vote must have arrived. • The voter must have logged in to the system. • The applications of the candidates must be approved. | | |
| Postconditions: | Voter has voted. | | |
| Priority: | High | | |
| Frequency of Use: | Every student who is not a candidate votes once for each department election. | | |
| Normal Course of Events: | <ol style="list-style-type: none"> 1. Voter enters the voting interface. 2. Voter clicks on the button below the desired candidate. 3. Voter clicks the "vote" button. | | |
| Alternative Courses: | None | | |
| Exceptions: | None | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

3.1.4 Department Representative Use Cases

| | | | |
|--------------------------|--|--------------------|--------------|
| Use Case ID: | DRUC1 | | |
| Use Case Name: | Department Representatives Apply for Faculty Representative Candidacy | | |
| Created By: | Ismail Günay | Last Updated By: | Ismail Günay |
| Date Created: | 08.04.2023 | Date Last Updated: | 08.04.2023 |
| Actor: | Department Representative | | |
| Description: | The action that voluntary department representatives can take to apply for the faculty representative candidacy position | | |
| Preconditions: | The user is a department representative The user is logged in | | |
| Postconditions: | The user applied for the faculty representative candidacy | | |
| Priority: | High | | |
| Frequency of Use: | Some of the department representatives of the system İYTE, so approximately 15 | | |
| Normal Course of Events: | <ol style="list-style-type: none"> User enters the system User opens up the application page for the faculty representative candidacy. User applies for the candidacy by clicking the relevant button | | |
| Alternative Courses: | None | | |
| Exceptions: | <ol style="list-style-type: none"> Website is unable to respond in at most 10 seconds. <ul style="list-style-type: none"> Display an error message to the user to let them know about the issue and inform the admin. | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

| | | | |
|--------------------------|--|--------------------|--|
| Use Case ID: | DRUC2 | | |
| Use Case Name: | Department representative casts his/her vote for faculty representative candidate | | |
| Created By: | Kürşat Çağrı Yakıcı | Last Updated By: | |
| Date Created: | 08.04.2023 | Date Last Updated: | |
| Actor: | Department Representative | | |
| Description: | Department representative casts their vote for one of the available faculty representatives. | | |
| Preconditions: | Department representative election must be completed. Faculty representative elections must already have started. Department representative must be logged in to the system. | | |
| Postconditions: | The total vote count of the faculty representative is increased by one. The total vote count in the faculty representative election is increased by one. The department representative will see the faculty representative whom they have chosen as marked as "voted" when they list the candidates again. | | |
| Priority: | High | | |
| Frequency of Use: | Once per each election | | |
| Normal Course of Events: | <ol style="list-style-type: none"> 1. Department representative views the candidates. 2. Department representative chooses the candidate whom they want to vote. 3. Department representative casts their vote for their candidate of choice. 4. Department representative confirms the vote in the pop-up window. 5. The candidate's votes are increased by one. | | |
| Alternative Courses: | <ol style="list-style-type: none"> 1. Department representative cancels the confirmation page at step 4. <ol style="list-style-type: none"> 1.1. Department representative returns to step 2 of normal course. 2. Department representative cancels their vote. <ol style="list-style-type: none"> 2.1. Department representative chooses to cancel their vote. 2.2. The vote count of the whole system and the previous selected candidate are dropped by one. | | |

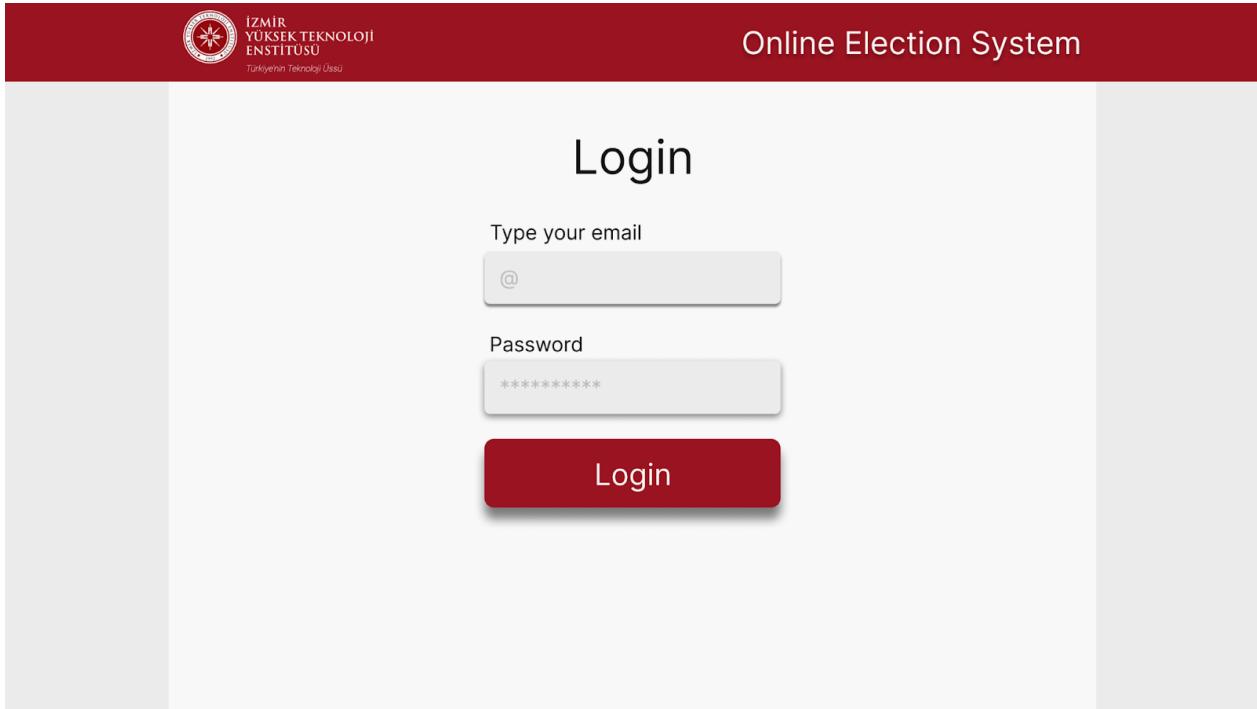
| | |
|-----------------------|---|
| | 2.3. Department representative returns to step 1 of normal course. |
| Exceptions: | 1. The vote is not processed properly due to server load. 1.1 Department representative sees an error message indicating that the voting procedure was unsuccessful. |
| Includes: | None |
| Special Requirements: | None |
| Assumptions: | Department representative has internet connection and a device which he/she can access the system |
| Notes and Issues: | None |

3.1.5 Candidate Use Cases

| | | | |
|--------------------------|--|--------------------|--|
| Use Case ID: | CUC1 | | |
| Use Case Name: | Withdraw from Candidacy | | |
| Created By: | Tuğçe Türkmenler | Last Updated By: | |
| Date Created: | 07.04.2023 | Date Last Updated: | |
| Actor: | Candidate | | |
| Description: | Candidates who have applied to be a candidate can withdraw from candidacy. | | |
| Preconditions: | The student has applied to become a candidate. | | |
| Postconditions: | The candidate has withdrawn from the candidacy. | | |
| Priority: | Medium | | |
| Frequency of Use: | Only when a student decides to withdraw from the candidacy. | | |
| Normal Course of Events: | 1. Candidate enters the URL of the website to their search engine of choice. 2. Candidate enters the website. 3. Student logs in to the system (login use case adı) 4. Candidate chooses the option that indicates they want to withdraw from the candidacy. 5. A pop-up appears informing the student that this selection cannot be undone. 6. Candidate clicks the approval button. | | |
| Alternative Courses: | None | | |
| Exceptions: | None | | |
| Includes: | None | | |
| Special Requirements: | None | | |
| Assumptions: | None | | |
| Notes and Issues: | None | | |

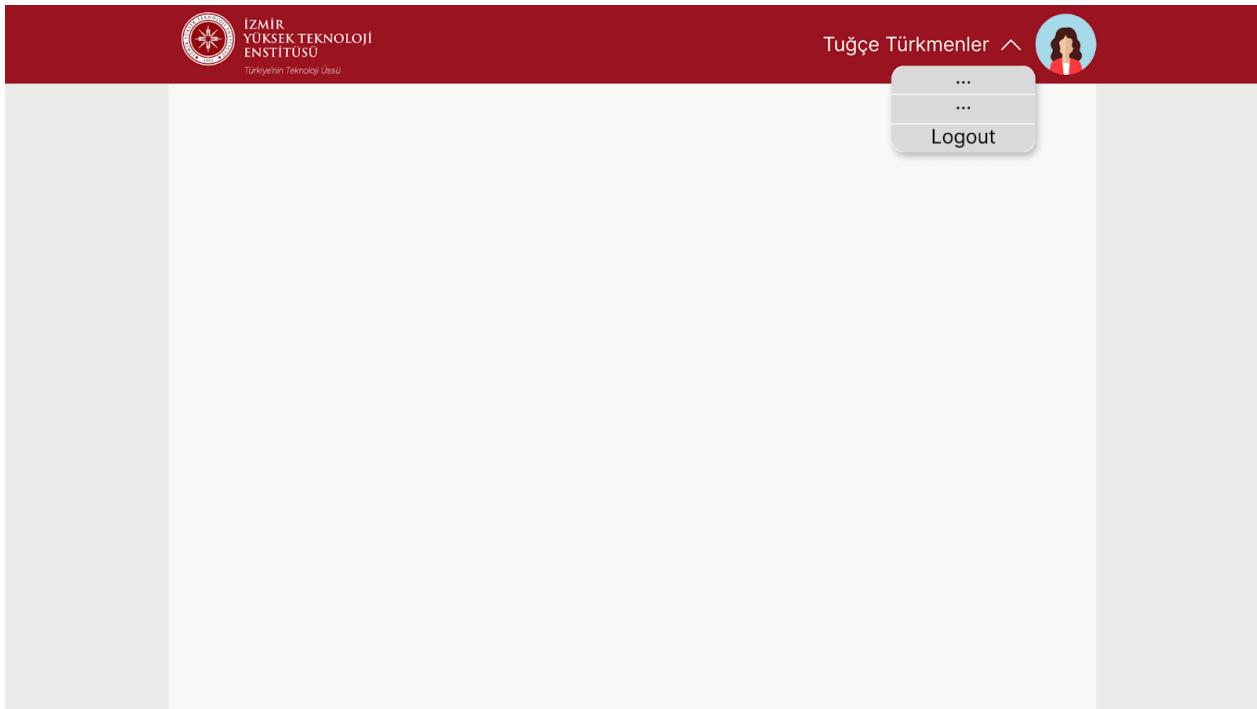
3.2 Pages

3.2.1 [Figure 1] - Login Page



The screenshot shows the login page of the Online Election System. At the top left is the logo of Izmir High Technology Institute (İzmir Yüksek Teknoloji Enstitüsü) with its name in Turkish and English. At the top right is the text "Online Election System". The main title "Login" is centered above two input fields: one for email with placeholder "@", and one for password with placeholder "*****". A large red "Login" button is positioned below the password field.

3.2.2 [Figure 2] - Logout



3.2.3 [Figure 3] - Main Page

The screenshot shows the main page of the Online Student Council Election System. At the top, there is a red header bar with the logo of İzmir Yüksek Teknoloji Enstitüsü (IYTE) on the left and a user profile icon on the right. The profile icon shows a female student with the name Tuğçe Türkmenler next to it. Below the header, the text "Welcome to the Online Student Council Election System" is displayed. There are three blue buttons at the bottom: "See Upcoming Elections", "See Ongoing Elections", and "See Finished Elections". The background features a light gray gradient with abstract blue shapes.

3.2.4 [Figure 4] - Profile Page

The screenshot shows the profile page of the user Tuğçe Türkmenler. At the top, there is a red header bar with the IYTE logo on the left and a user profile icon on the right. The profile icon shows a female student with the name Tuğçe Türkmenler next to it. Below the header, there is a circular profile picture of the user. To the right of the profile picture, there are several user details listed in pairs: Name (Tuğçe), Surname (Türkmenler), Number (290201097), GPA (4.0), Email (tugceturkmenler@std.iyte.edu.tr), and Department (Computer Engineering). Below these details, there are two sections: "Candidate Type" and "Representative Type", each with a single horizontal line. At the bottom, there are two buttons: "Become a Candidate" (in a red box) and "Withdraw From Candidacy" (in a gray box).

 İZMİR
YÜKSEK TEKNOLOJİ
ENSTİTÜSÜ
Türkiye'nin Teknoloji Üssü

Tuğçe Türkmenler 

| | | |
|---|---|---|
|  | Name Tuğçe | Surname Türkmenler |
| | Number 290201097 | GPA 4.0 |
| | Email tugceturkmenler@std.iyte.edu.tr | Department Computer Engineering |

Candidate Type
Department Representative

Representative Type
-

[Become a Candidate](#) [Withdraw From Candidacy](#)

 İZMİR
YÜKSEK TEKNOLOJİ
ENSTİTÜSÜ
Türkiye'nin Teknoloji Üssü

Tuğçe Türkmenler 

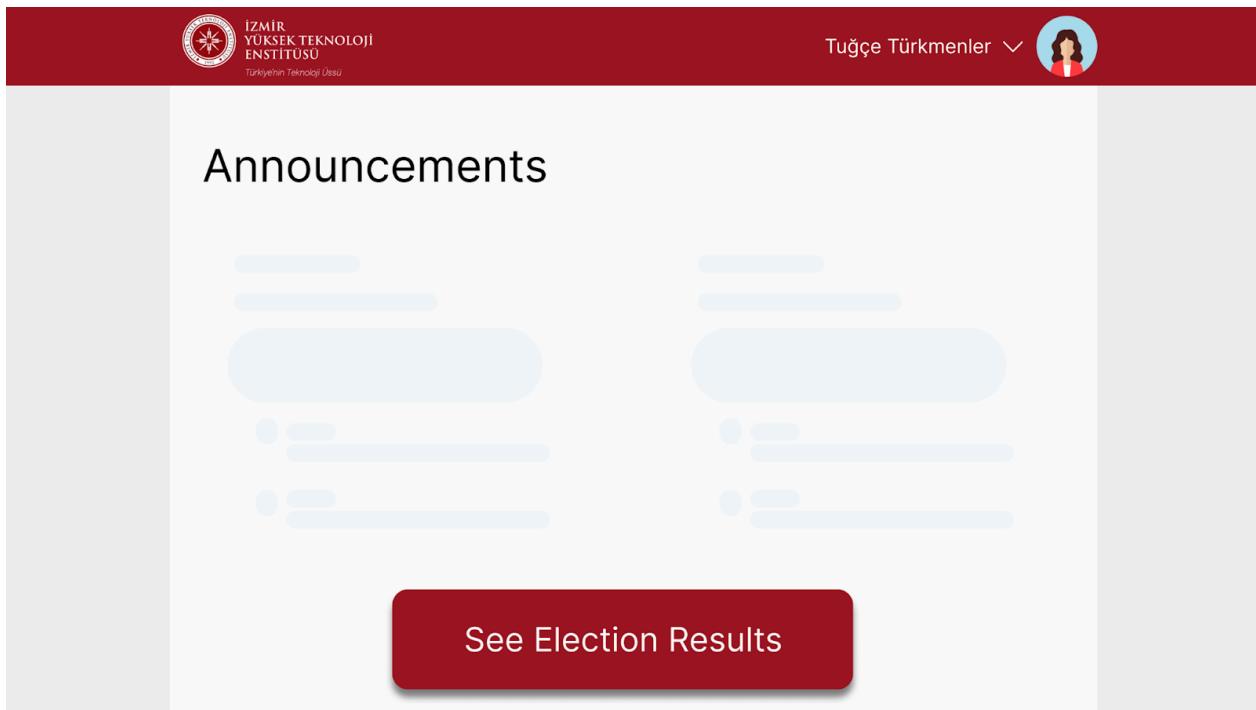
| | | |
|---|---|---|
|  | Name Tuğçe | Surname Türkmenler |
| | Number 290201097 | GPA 4.0 |
| | Email tugceturkmenler@std.iyte.edu.tr | Department Computer Engineering |

Candidate Type
-

Representative Type
Department Representative

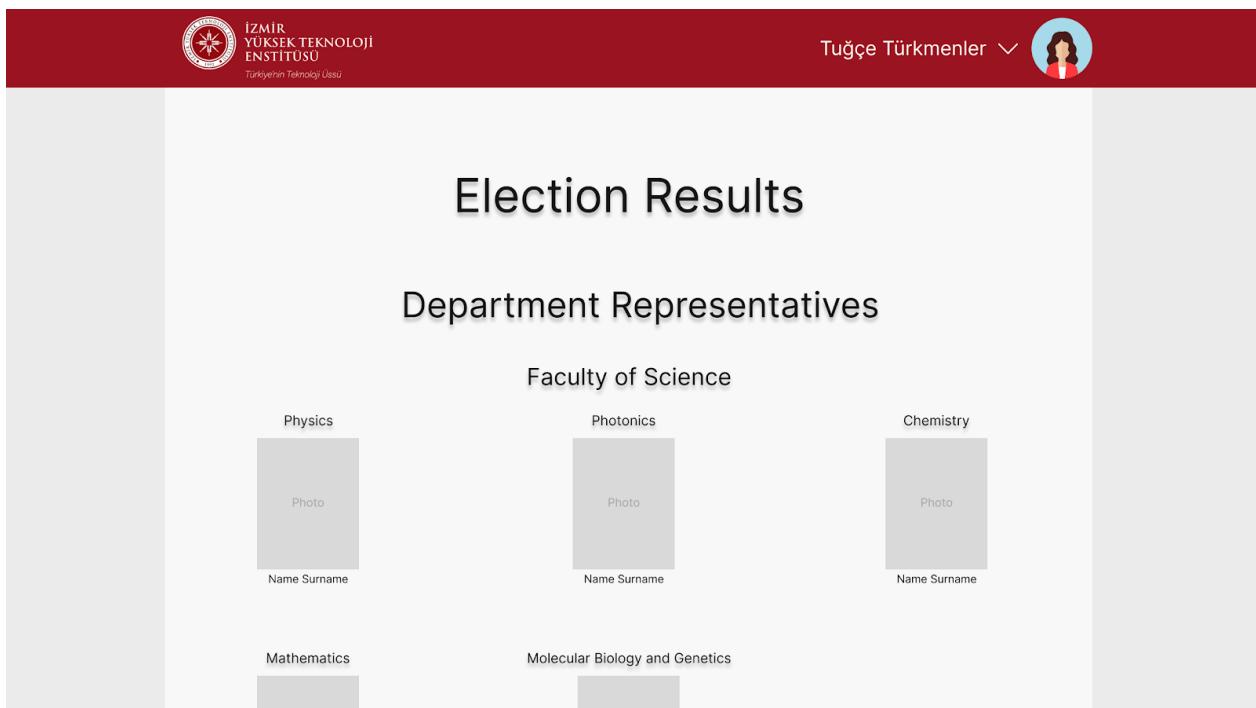
[Become a Candidate](#) [Withdraw From Candidacy](#)

3.2.5 [Figure 5] - Announcement Page



The screenshot shows a user interface for an announcement page. At the top, there is a red header bar with the logo of Izmir High Technology Institute (İZMİR YÜKSEK TEKNOLOJİ ENSTİTÜSÜ) and a user profile for Tuğçe Türkmenler. Below the header, the word "Announcements" is displayed in large black font. There are several placeholder cards for announcements, each consisting of a blue rounded rectangle with a white horizontal bar inside. A prominent red button at the bottom center says "See Election Results".

3.2.6 [Figure 6] - Election Results



The screenshot shows a user interface for election results. It features a red header bar with the same institutional logo and user profile as Figure 5. The main content area has a light gray background. The title "Election Results" is centered at the top in a large, bold, dark font. Below it, the heading "Department Representatives" is displayed. Under this heading, the "Faculty of Science" is mentioned. Below this, there are five placeholder cards for department representatives, each showing a gray box labeled "Photo" and "Name Surname". The departments listed are Physics, Photonics, Chemistry, Mathematics, and Molecular Biology and Genetics.

3.2.7 [Figure 7] - Election Creation Page

The screenshot shows the 'Create an Election' page. At the top, there is a red header bar with the university's logo and name ('İZMİR YÜKSEK TEKNOLOJİ ENSTITÜSÜ') and a user profile for 'Admin'. Below the header, the main title 'Create an Election' is centered. The form fields include:

- Department Name:** A dropdown menu showing 'Computer Engineering'.
- Starting Date:** A date picker showing April 2023, with the 29th selected.
- Starting Time:** A text input field with placeholder 'Type a name'.
- Ending Date:** A date picker showing April 2023, with the 30th selected.
- Ending Time:** A text input field with placeholder 'Type a name'.
- Create Election:** A large red button at the bottom.

3.2.8 [Figure 8] - Election Page

The screenshot shows the election details for the '2022 - 2023 Spring | Computer Engineering Department Representative Election'. The top navigation bar includes the university's logo and name, and a user profile for 'Tuğçe Türkmenler'. The main content area displays the following information:

| | | | |
|-----------------------------------|---------------------------------|---------------------------------|------------|
| Department: | Computer Engineering Department | Status: | Upcoming |
| Starting Date of Election: | 23/05/2023 | Ending Date of Election: | 24/05/2023 |
| Starting Time of Election: | 12:00 PM | Ending Time of Election: | 12:00 PM |

 İZMİR
YÜKSEK TEKNOLOJİ
ENSTITÜSÜ
Türkçe'nin Teknolojisi Üssü

Admin 

2022 - 2023 Spring | Department Representative Election

| | |
|----------------------------------|--------------------------------|
| <u>Department</u> | <u>Status</u> |
| Computer Engineering Department | Upcoming |
| <u>Starting Date of Election</u> | <u>Ending Date of Election</u> |
| 23/05/2023 | 24/05/2023 |
| <u>Starting Time of Election</u> | <u>Ending Time of Election</u> |
| 12:00 PM | 12:00 PM |

[Announce the Election to Students](#)

[Run the Election Again](#)

[End the Election](#)

 İZMİR
YÜKSEK TEKNOLOJİ
ENSTITÜSÜ
Türkçe'nin Teknolojisi Üssü

Admin 

2022 - 2023 Spring | Department Representative Election

| | |
|----------------------------------|--------------------------------|
| <u>Department</u> | <u>Status</u> |
| Computer Engineering Department | Ongoing |
| <u>Starting Date of Election</u> | <u>Ending Date of Election</u> |
| 23/05/2023 | 24/05/2023 |
| <u>Starting Time of Election</u> | <u>Ending Time of Election</u> |
| 12:00 PM | 12:00 PM |

[Announce the Election to Students](#)

[Run the Election Again](#)

[End the Election](#)

 İZMİR
YÜKSEK TEKNOLOJİ
ENSTITÜSÜ
Türkiye'nin Teknoloji Üssü

Admin 

2022 - 2023 Spring | Department Representative Election

| | |
|----------------------------------|--------------------------------|
| <u>Department</u> | <u>Status</u> |
| Computer Engineering Department | Finished |
| <u>Starting Date of Election</u> | <u>Ending Date of Election</u> |
| 23/05/2023 | 24/05/2023 |
| <u>Starting Time of Election</u> | <u>Ending Time of Election</u> |
| 12:00 PM | 12:00 PM |

[Announce the Election to Students](#) [Run the Election Again](#)

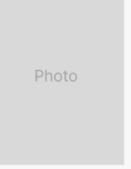
[End the Election](#)

3.2.9 [Figure 11] - Voting Page

 İZMİR
YÜKSEK TEKNOLOJİ
ENSTITÜSÜ
Türkiye'nin Teknoloji Üssü

Tuğçe Türkmenler 

Vote for

| | | | | |
|--|--|--|---|--|
|  Photo |  Photo |  Photo |  Photo |  Photo |
| <input type="radio"/> Name Surname | <input type="radio"/> Name Surname | <input type="radio"/> Name Surname | <input type="radio"/> Name Surname | <input type="radio"/> Name Surname |
|  Photo |  Photo |  Photo |  Photo |  Photo |
| <input type="radio"/> Name Surname | <input type="radio"/> Name Surname | <input type="radio"/> Name Surname | <input type="radio"/> Name Surname | <input type="radio"/> Name Surname |

[Vote](#)

3.2.10 [Figure 12] – Ongoing Elections Page

The screenshot shows a web page with a dark red header. On the left side of the header is the logo of Izmir High Technology Institute (İzmir Yüksek Teknoloji Enstitüsü) with its name in both Turkish and English, and the tagline 'Türkiye'nin Teknoloji Üssü'. On the right side, there is a user profile icon for 'Tuğçe Türkmenler' with a dropdown arrow, and a small circular profile picture of a woman.

Ongoing Elections

- 1. Election A (end date: xx.xx.xxxx)**
- 2. Election B (end date: xx.xx.xxxx)**
- 3. Election C (end date: xx.xx.xxxx)**

3.2.11 [Figure 13] – Upcoming Elections Page

The screenshot shows a web page with a dark red header. On the left side of the header is the logo of Izmir High Technology Institute (İzmir Yüksek Teknoloji Enstitüsü) with its name in both Turkish and English, and the tagline 'Türkiye'nin Teknoloji Üssü'. On the right side, there is a user profile icon for 'Tuğçe Türkmenler' with a dropdown arrow, and a small circular profile picture of a woman.

Upcoming Elections

- 1. Election A (start date: xx.xx.xxxx)**
- 2. Election B (start date: xx.xx.xxxx)**
- 3. Election C (start date: xx.xx.xxxx)**

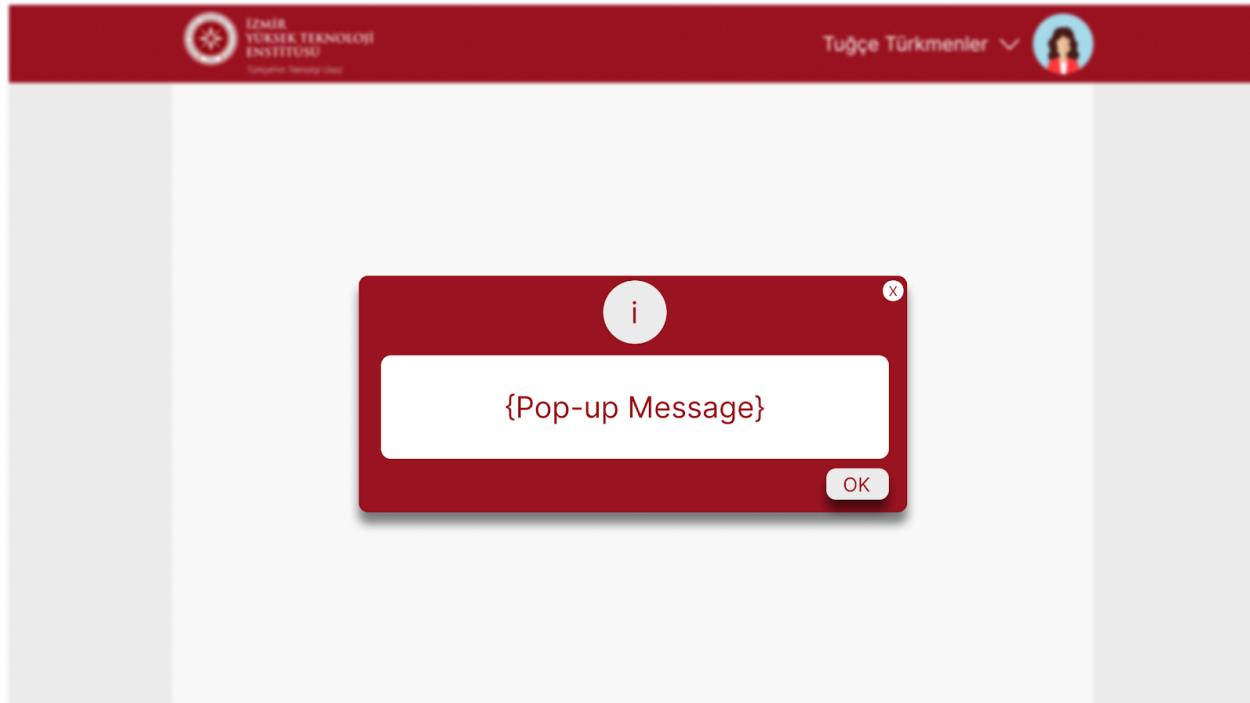
3.2.12 [Figure 14] – Finished Elections Page

The screenshot shows a web page titled "Finished Elections". At the top left is the logo of İZMİR YÜKSEK TEKNOLOJİ ENSTİTÜSÜ (Izmir High Technology Institute) with the tagline "Türkiye'nin Teknoloji Üssü". At the top right is a user profile for "Tuğçe Türkmenler" with a dropdown arrow and a small profile picture. The main content area has a light gray background and displays three entries under the heading "Finished Elections":

- 1. Election A (end date: xx.xx.xxxx)**
- 2. Election B (end date: xx.xx.xxxx)**
- 3. Election C (end date: xx.xx.xxxx)**

3.3 Popups

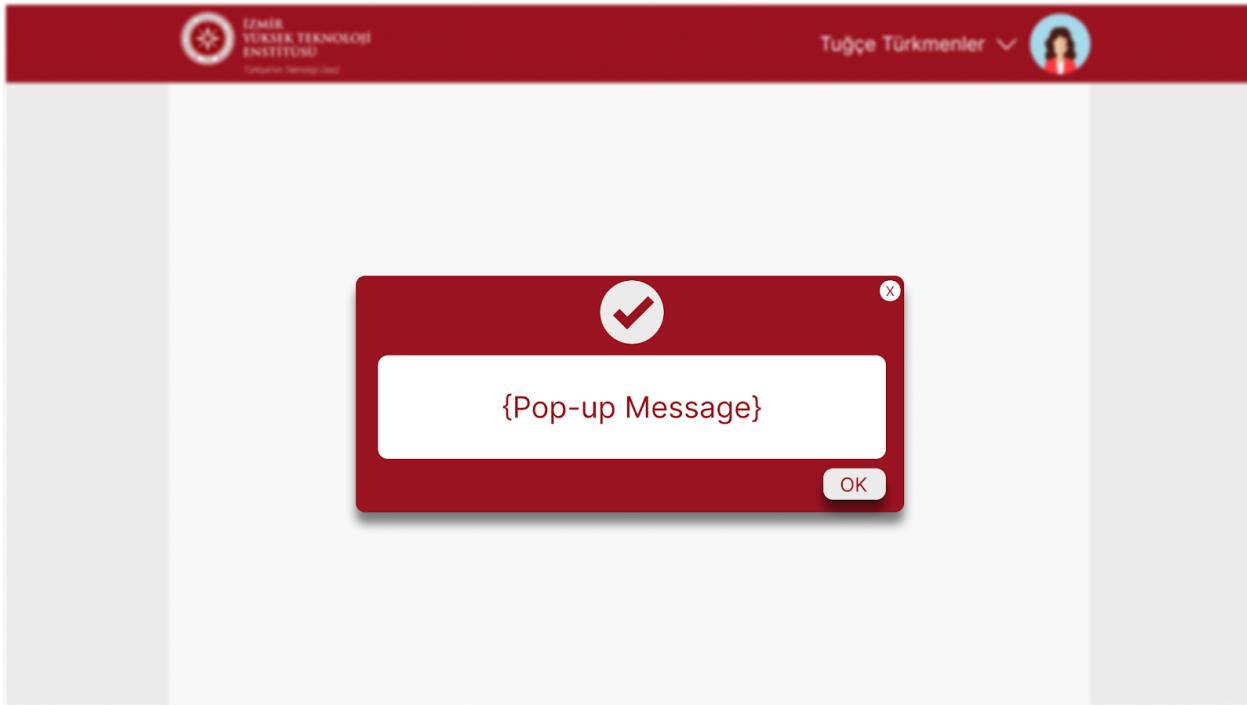
3.3.1 [Popup 1] – Informational Popup



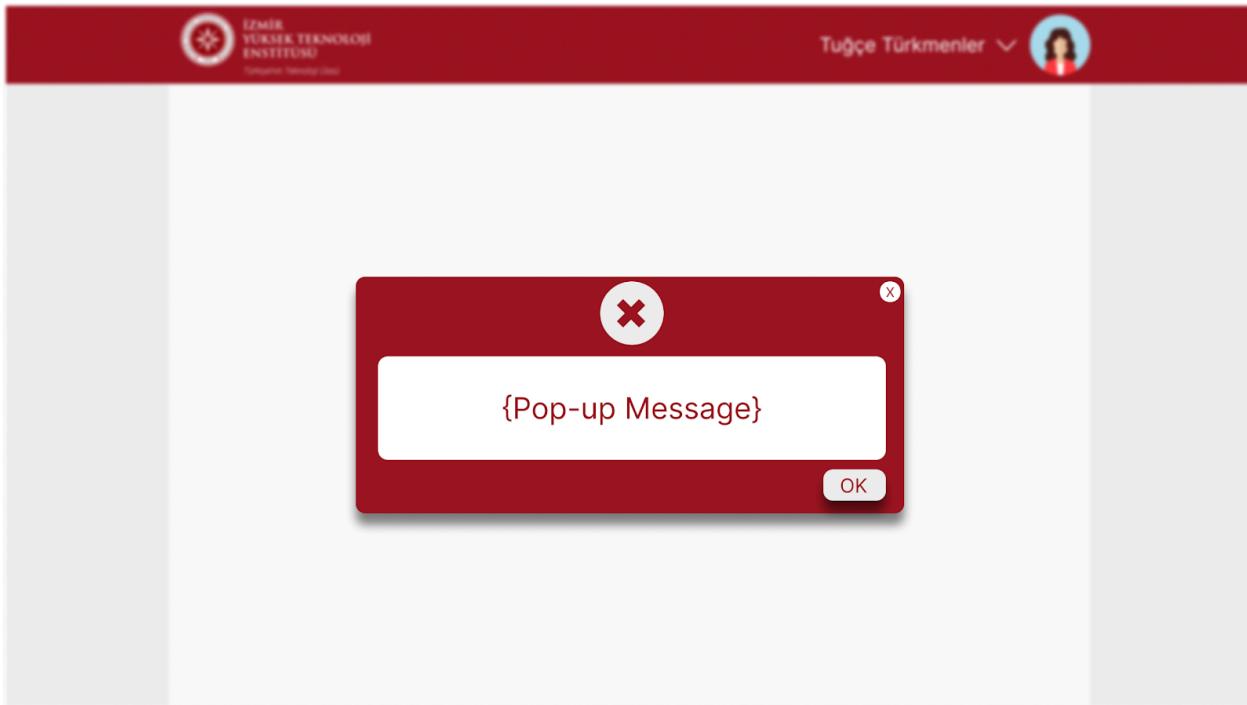
3.3.2 [Popup 2] – Warning Popup



3.3.3 [Popup 3] – Success Popup



3.3.4 [Popup 4] – Error Popup

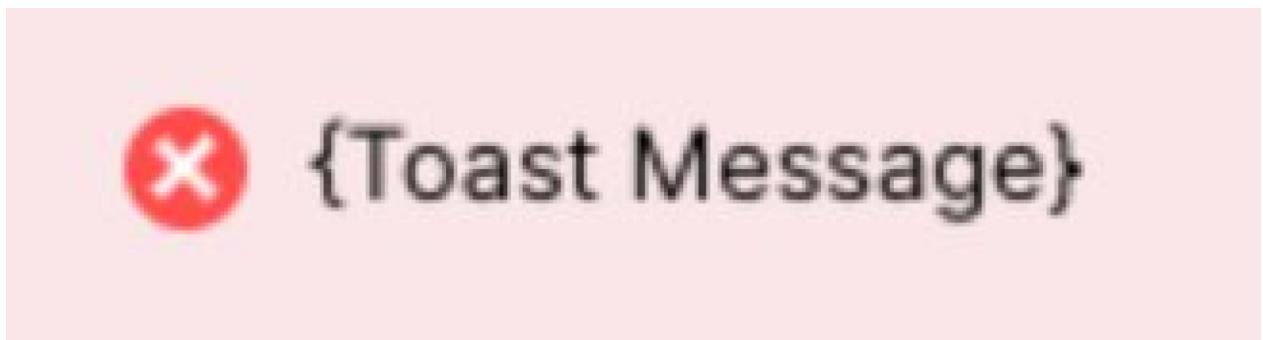


3.4 Toasts

3.4.1 [Toast 1] – Success Toast



3.4.2 [Toast 2] – Error Toast



3.4 External Interfaces

- OBS Interface
 - Will be used for the validation of the uploaded documents.
- E-Devlet API
 - Will be used for the validation of the uploaded documents that contain legal information.

3.5 Generic Performance/Software Requirements

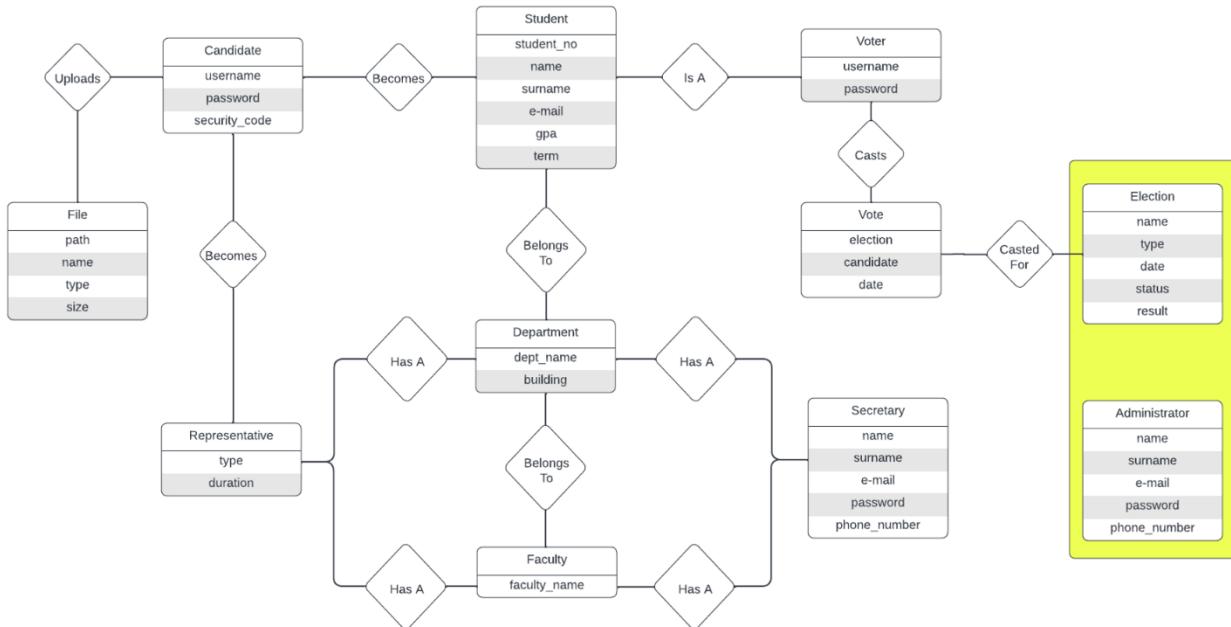
- External Requirements
 - Availability
 - The system should be available 95% of the time in the year that the elections will take place.

- The system access shall be available for the administrator so that he/she can oversee the whole process.
 - The voting interface shall not be available to students outside of the designated election time.
- Installability
 - It is enough for the website to be installed with at least 90% efficiency since it will be installed once, at the selected domain.
- Integrity
 - Other than some files, the system shall be able to check the accuracy of the files by communicating with the necessary applications, with a 99% efficiency since some files include important legal information.
- Interoperability
 - The system shall be able to communicate with OBS
 - The system shall be able to communicate with E-Devlet
- Performance
 - The number of seconds to display the page shall not exceed 3 seconds.
 - There should be at least 500 votes processed per second to ensure that the system does not slow down at an event of multiple people voting at the same time.
- Reliability
 - The processing of the votes casted by students shall not fail at least 99.99% of the time.
 - The system shouldn't experience issues at least 90% of the time (outside of the designated election day)
 - The system shall perform without issues in the designated election day.
- Robustness
 - The system should automatically let the admin know when there is an unexpected speed loss in loading speed of any webpage.
- Safety
 - The system should do an automatic backup every single day to ensure that there are no documents lost.
- Security

- The system shall protect against unauthorized access at least 99% of the time since the website will contain important legal information about the candidates.
 - The system shall ensure that the voter students don't have access to the system outside of the election time.
 - The documents uploaded by candidate students shall stay private.
 - The votes casted by the voter students shall remain anonymous.
- Usability
 - An A/B test should be conducted with a statistical significance of at least 95% to ensure the ease of use of the website.
- Internal Requirements
 - Efficiency
 - Since the website might receive a large volume of traffic, it is required that the server that runs the website should have a bare minimum of 8GB RAM.
 - Modifiability
 - The system should be implemented so that the system will let administrator make changes when something goes wrong, and therefore the system becomes maintainable.
 - Portability
 - Since it is assumed that there will be no change of domains that run the website, there will be no need to make the website work on other operating environments.
 - Reusability
 - This system will be designed only for the students of İYTE so there is no need for the system to be reused in other systems.
 - Scalability
 - There is no need for the system to grow to accommodate more users since it is assumed that the number of voter students will not drastically increase over the years.
 - Verifiability
 - The website should be ready 90% of the time for testing.

3.6 Logical Database Requirements

NOTE: Database ER Diagram has been updated. (Election entity and Administrator entity and their relationships have been added.) (The changes are denoted inside of a yellow box for clarification.)



3.7 Design Constraints

- It must be taken into consideration that the website can be viewed by many different devices with different screen measurements so while designing the website, it must be made sure that the website will look proper in every device.
- GitHub should be used for version control.
- The system should be designed such that it can be used in at least these versions of the browsers:
 - Chrome: 23
 - Firefox: 21
 - Internet Explorer: 10
 - Safari: 6
 - Opera: 15

3.8 Other Requirements

- It is required that the website is tested and shown to the dean for approval before opening it to the public.