

# CA326 Year 3 Project

## User Manual

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- **Project Title:** Decentralized Voting App
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## **Walkthrough video**

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You can view the walkthrough video here:

<https://www.youtube.com/embed/JO-732wtZTw>

# 1. Home Page

The homepage has **two** main components and many subcomponents.

- The **Elections in Progress** table is a list of every election in progress on the site.
- The **Closed Elections** table is a list of all elections closed on the site.

The screenshot shows the DEVOTE homepage. At the top is a dark header with the DEVOTE logo on the left and navigation icons (home, user, group) on the right. Below the header, the page is divided into two main sections. The left section contains two tables. The first table, titled 'Elections in Progress', has a search bar at the top with a search filter dropdown set to 'Name' and a search input field. To the right of the search bar are 'REFRESH' and 'HIDE' buttons. The table has columns: '#', 'Name', 'Society', 'Candidates', 'Status', and 'View'. It contains one row for 'Test Election 1' with 3 candidates and an 'Active' status. The 'View' column has a 'VIEW' button. The second table, titled 'Closed Elections', has columns: '#', 'Name', 'Society', 'Winner', and 'View'. It contains one row for 'Test Election 2' with 'None' as the society and 'Test Candidate 1, Test Candidate 2' as the winner. The 'View' column has a 'VIEW' button. Below this table is a 'HIDE TABLE' button. The right section of the page is titled 'Instructions' and contains a list of three steps: 1. Make sure Ganache is running on port 8545, 2. Have Metamask running on localhost:8545, and 3. Refresh this page.

#	Name	Society	Candidates	Status	View
1	Test Election 1	Redbrick	3	Active	<a href="#">VIEW</a>

#	Name	Society	Winner	View
2	Test Election 2	None	Test Candidate 1, Test Candidate 2	<a href="#">VIEW</a>

[HIDE TABLE](#)

**Instructions**

1. Make sure Ganache is running on port 8545
2. Have Metamask running on localhost:8545
3. Refresh this page

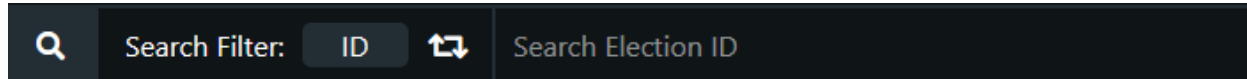
## 1.1 Search

Every election can be searched through at the top of the **Elections in Progress** table using the search bar. The search bar has two filters, each swapped by clicking the rotate icon next to the current filter.

The **Name Filter** searches through the names of the elections and displays matching elections.

This close-up shows the search bar at the top of the 'Elections in Progress' table. It features a search icon on the left, followed by the text 'Search Filter:'. To the right of this text is a dropdown menu currently showing 'Name'. Next to the dropdown is a rotate icon. To the right of the rotate icon is a search input field with the placeholder text 'Search Election Name'.

The **Election ID Filter** takes numbers as input and matches to one election.



## 1.2 Table Buttons


The table can be manually reloaded using the **Refresh** button to the far right of the search bar. The table can be completely collapsed by clicking the **Hide** button next to refresh, to free up some screen space. All tables on the site have a button to collapse the table.



## 1.3 Election Table Contents

Each election in the table displays **six** different columns of data.

- Election ID
- Election Name
- Society Name (if any)
- Total Candidates in the Election
- Election current status
- A button to view the election

#	Name	Society	Candidates	Status	View
1	Test Election 1	Redbrick	3	Active	 VIEW

Clicking the view button on an election will bring you to the dedicated election page for that election.

## 2. Election Page as Voter

The election page displays a **Candidate Table** and a **Voting Form**.

**Test Election 1**  
👤 Society: TestSociety

Name	Position	Votes
Test Candidate 1	President	43
Test Candidate 2	President	49
Test Candidate 3	President	31

REFRESH

Election: Active

Start date: Wed Mar 04 2020      End date: Thu Mar 05 2020

Start time: 22:52      End time: 10:52

Candidate name:

VOTE


### 2.1 Candidate Table

The candidate table has three different fields:

- Name of Candidate
- Position Applying For
- Votes Acquired

If the **election** is linked to a **society**, the name of the society is displayed beneath the title of the candidate table.

# Test Election 1

 Society: TestSociety

Name	Position	Votes
Test Candidate 1	President	43
Test Candidate 2	President	49
Test Candidate 3	President	31

REFRESH

## 2.2 Election State

The **Voting Form** displays the current state of the election and the date & time for the start and end of the election. Elections can be in one of **four** states:

- Awaiting Start
- Pending Start
- Active
- Closed

## 2.3 Awaiting Start

When an election is created, is to automatically set to the **Awaiting Start** state. The start and end dates have not been specified yet, and it is not possible to vote for candidates.

Election: <b>Awaiting Start</b>			
Start date:	Not Specified	End date:	Not Specified
Start time:	Not Specified	End time:	Not Specified

## 2.4 Pending Start

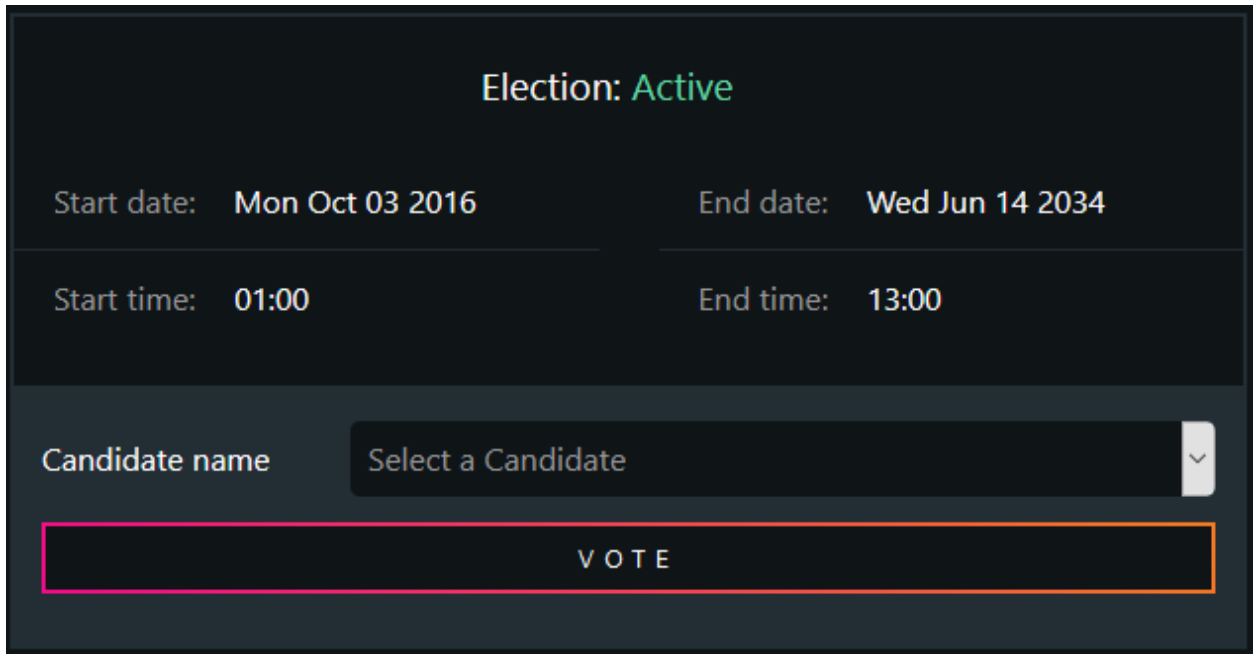
When the election start and end dates are set by the owner of the election, the election changes state. If the start date is later than the current date, the election is set to the **Pending Start** state. Whilst the election is pending, you can add and remove candidates, and change the name of the election. Votes cannot be casted whilst the election is pending.

Election: <b>Pending Start</b>			
Start date:	Thu Oct 01 2020	End date:	Thu Oct 01 2020
Start time:	01:00	End time:	13:00

## 2.5 Active

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If the start date of the election is set before the current date, the election will be **Active** immediately. Once the election is **Active**, the owner loses the ability to edit the election and users can start voting. The election will end when the end date is reached.



The screenshot shows a dark-themed user interface for an election. At the top, the text "Election: Active" is displayed in green. Below this, there are two rows of date and time information. The first row shows "Start date: Mon Oct 03 2016" and "End date: Wed Jun 14 2034". The second row shows "Start time: 01:00" and "End time: 13:00". Below the time information, there is a label "Candidate name" followed by a dropdown menu with the text "Select a Candidate" and a downward arrow icon. At the bottom of the interface, there is a large rectangular button with the text "VOTE" in all caps, outlined in orange.

## 2.6 Closed

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If an election reaches its end date, the system automatically closes the election and derives a winner. You can still see the start and end dates of the election. The voting form is replaced with the winner of the election, and the person you voted for if you voted in the election. There can be multiple winners of an election if two or more candidates have the same amount of votes when it ends.



Election: **Closed**


Start date: Mon Oct 03 2016

End date: Tue Feb 11 2020

Start time: 01:00

End time: 13:00

Election Winner:

 Ciaran Palmer

You voted for:

☒ Ciaran Palmer

## 2.7 Voting

You can select a candidate from the drop down menu and click vote to process the vote. Once a vote has been made, you will not be able to vote for anyone else in this election. The voting form will automatically change and display the name of the person you voted for.

Election: **Active**

Start date: Wed Jan 01 2020

End date: Sat Apr 25 2020

Start time: 21:43

End time: 00:00

You voted for:

☒ Test Candidate 1

## 3. Election Page as Creator

If the election is in the **Awaiting Start State** and you are the owner of the election, you will see **four** different components to edit the details of the election.

- Change Election Name
- Add Candidates to Election
- Delete Candidates from Election
- Set Start and End date of Election

### 3.1 Election Details

Candidates can be added and removed from the election using the two forms provided. The name of the election can also be changed.

The screenshot displays the 'Election Page as Creator' interface, which is divided into four main sections:

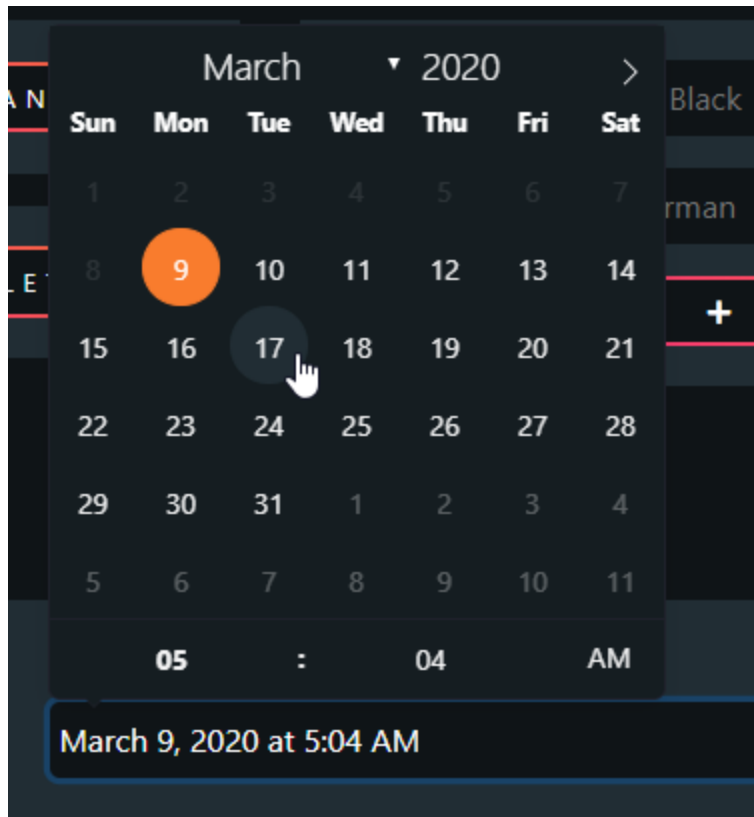
- Edit Election Details:** This section contains two forms. The first form, 'Change Name', has a text input field with the placeholder 'New election name' and a 'CHANGE' button with a pencil icon. The second form, 'Delete Candidate', has a dropdown menu and a 'DELETE' button with an 'x' icon.
- Add Candidate:** This section contains two forms. The first form, 'Name', has a text input field with the placeholder 'Jack Black'. The second form, 'Position', has a text input field with the placeholder 'e.g. Chairman'. Below these is a '+ ADD CANDIDATE' button.
- Set Election Start & End Date:** This section contains two forms. The first form, 'Election Start Date', has a dropdown menu with 'Now' selected. The second form, 'Election End Date', has a dropdown menu with '12 hrs' selected. Below these is a 'SET ELECTION DATES' button.
- Bottom Bar:** A bar at the bottom of the page with the text 'SET ELECTION DATES'.

### 3.2 Start Date

The start date can be set to **Now** or **Specific Date**. The date can be entered by first changing "Now" in the drop down select to "Specific date" and using the user interface popup to select a time and date.

### 3.3 End Date

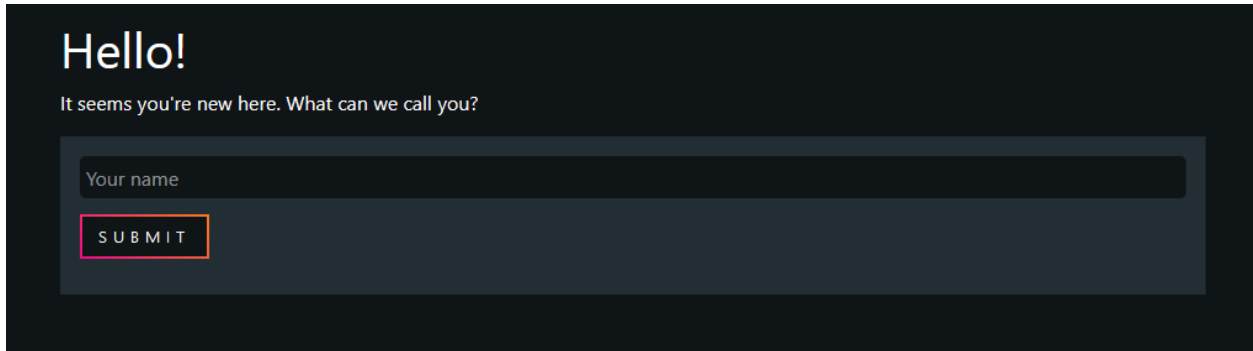
The end date can be entered the same way as the start date, simply click on the date to change it using the popup interface.



## 4. Accounts Page

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You can navigate to the accounts page by clicking the user icon in the far right of the navigation bar. If this is your first time on the site, you will be prompted to enter a name.



After entering a name, the accounts page is loaded. This page has **three** main components.

- Account Information
- Create an Election Form
- Your Elections

### 4.1 Account Information

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This component displays the users name, the date they joined the site, societies they own and their metamask account number.


### 4.2 Election Form




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This component allows the user to create new elections. The input requires an election name and has an optional drop down menu for specifying a certain society. If a society is selected, only users that are a member of that society will be able to vote.


## 4.3 Your Elections


This component is a table that displays every election that your account has created. When you create an election it will be placed in the **Awaiting Start** state and can be made **Active** by clicking the **Setup** button in the last column of the table. This will bring you to the elections dedicated page described above. The table can be hidden using the **Hide Table** button beneath. The table can be refreshed using the **Refresh** button below.


DEVOTE





### Account Information



 **User:** Ciaran



 **Joined:** 27/02/2020

 **Societies:** Redbrick

 **Account:** 0x8eC14E57D62D05219EFa399...

### Create an Election

Name

Society   

### Your Elections

#	Name	Society	Candidates	Status	View / Setup
3	Test Election	Redbrick	0	Awaiting Start	<input type="button" value="SETUP"/>

## 5. Societies Page

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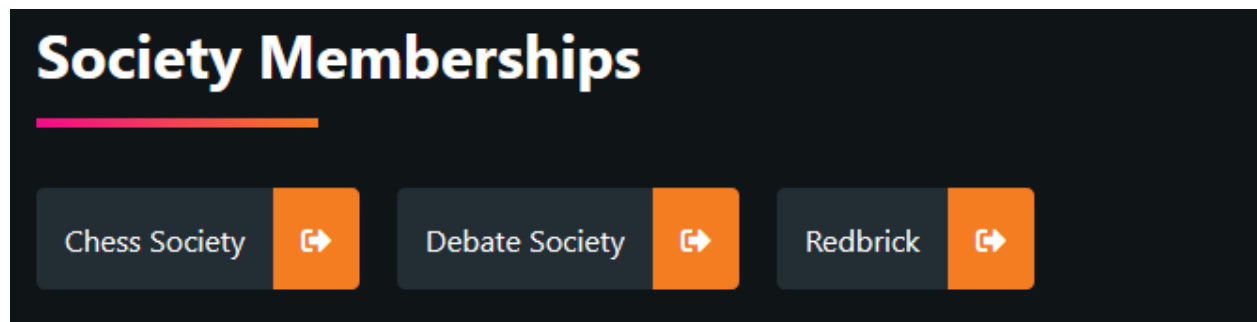
You can navigate to the societies page by clicking the multi user icon in the far right of the navigation bar. This page has **four** main components.

- Society Memberships
- Societies you Manage
- Society Creation Form
- Society Invite Link Generation Form

### 5.1 Society Memberships

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You can view all the societies you are a member of under the **Society Memberships** component. The orange exit button will leave the societies group and you will have to be invited back to rejoin.



### 5.2 Societies you Manage

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You can view the societies that you have created under the **Societies you Manage** component. The orange link button copies a link to your clipboard. If users enter the link into their search bar, they will automatically join the society. The orange cross button will delete the society.

## Societies You Manage

Chess Society



Debate Society



Redbrick



### 5.3 Society Invite Link Generation

If you want the invite link to expire, you can set the expire time for any society you own in the **Society Invite Link Generation** component. Clicking create will automatically copy the link to your clipboard.

In order to prevent invite codes from being used by unwanted members, you may set a max-use amount between 1 and 20. After the invite code has been used this number of times it will no longer function.

## Create an Invite Link

You can quickly copy a one-use invite by clicking on the chain icon for your society above.

Society

Test



Number of uses

1

+ CREATE

## 5.4 Society Creation Form

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New societies can be created on the accounts page using the **Society Creation Form** component. You can set the name of the society and an email to link the society to the owner. Only the person that created the society will have control over its features. Adding an email is optional.



The screenshot shows a dark-themed user interface for creating a new society. At the top, the heading "Add a new Society" is displayed in a large, bold, white font, with a horizontal orange line underneath. Below the heading is a form with two input fields. The first field is labeled "Name" and contains the placeholder text "Society name". The second field is labeled "Email" and contains the placeholder text "Society contact email". At the bottom left of the form, there is a button with a white checkmark icon and the text "SUBMIT" in white capital letters. The button has a thin orange border.

**Add a new Society**

Name Society name

Email Society contact email

☒ SUBMIT



## 6. Testing

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### 6.1 Running contract tests

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To run unit tests on the Solidity contract, first make sure you are in the `code` directory. Then execute the following command:

```
truffle test
```

This executes the unit tests located in the `test` directory. Truffle uses the Mocha testing framework and Chai for assertions on the Solidity smart contract. The tests will run and check that essential system functionality is operational, for example creating elections, adding candidates and voting.