

Appendix C: Testing & Control Flow

Black Box Testing

Login Functionality

Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify successful login with valid email and password	Ensure the login functionality works correctly for valid credentials	User has registered for a user account on the website	Email: jwong165@e.ntu.edu.sg Password: SC2006pwd!02	User is able to log in successfully	1. Navigate to the website's login page 2. Enter the email and password 3. Click on the Log In button	User is logged in successfully	Pass	The user's email and password is added to the database successfully
EC2	Verify error message when email is invalid	Ensure the error message is displayed when the email is invalid	User has registered for a user account on the website	Email: jwong165 Password: SC2006pwd!02	Error message "Email has to be valid" is displayed Error message (on the bottom left of the page): "Login Unsuccessful. An error occurred. Please try again."	1. Navigate to the website's login page 2. Enter the invalid email and valid password 3. Click on the Log In button	Under the email section, "Email has to be valid" is displayed in red Error message (on the bottom left of the page): "Login Unsuccessful. An error occurred. Please try again."	Pass	

B1	Verify error message when email is empty	Ensure the error message is displayed when the email field is left empty	User has registered for a user account on the website	Email: (empty) Password: SC2006pwd!02	Error message: "Email is required." is displayed Error message (on the bottom left of the page): "Login Unsuccessful. An error occurred. Please try again."	1. Navigate to the website's login page 2. Leave the email field empty 3. Enter a valid password 4. Click on the Log In button	Under the email section, "Email is required." is displayed in red Error message (on the bottom left of the page): "Login Unsuccessful. An error occurred. Please try again."	Pass	
B2	Verify error message when password is empty	Ensure the error message is displayed when the password field is left empty	User has registered for a user account on the website	Email: jwong165@e.ntu.edu.sg Password: (empty)	Error message: "Password is required." is displayed Error message (on the bottom left of the page): "Login Unsuccessful. An error occurred. Please try again."	1. Navigate to the website's login page 2. Enter a valid email 3. Leave the password field empty 4. Click on the Log In button	Under the password section, "Password is required." is displayed in red Error message (on the bottom left of the page): "Login Unsuccessful. An error occurred. Please try again."	Pass	
B3	Verify error message when password is	Ensure the error message is displayed	User has registered for a user account on the website	Email: jwong165@e.ntu.edu.sg Password:	Error message: "Password is wrong. Please try again." is	1. Navigate to the website's login page	Error message: "Password is wrong. Please try again." is	Pass	

	wrong	when the password field is wrong		SC2006	displayed Error message (on the bottom left of the page): “Login Unsuccessful. An error occurred. Please try again.”	2. Enter a valid email 3. Enter the wrong password 4. Click on the Log In button	displayed Error message (on the bottom left of the page): “Login Unsuccessful. An error occurred. Please try again.”		
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Register Functionality

Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify successful sign up with valid information	Ensure the sign up functionality works correctly for valid inputs	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email: jwong165@e.ntu.edu.sg , OTP: 5233, Password: SC2006pwd!02 Re-Enter Password: SC2006pwd!02	User has signed up successfully for a user account and is logged in into the website	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields 3. Click Next to continue entering the inputs for the required fields (password and re-enter password) 4. Click on the Sign Up button	User has signed up successfully for a user account and is logged in into the website	Pass	
EC2	Verify error message when Password and Re-Enter	Ensure the error message is displayed when the password and	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email: jwong165@e.ntu.edu.sg , OTP: 5233, Password:	Error message: "Password has to match" is displayed Error message	1. Click on the Sign Up button and navigate to the Sign Up page	Error message: "Password has to match" is displayed in red Error message (on	Pass	

	Password do not match	re-enter password fields do not match		SC2006pwd!02 Re-Enter Password: SC2006pw02	(on the bottom left of the page): "Registration Unsuccessful. Something went wrong. Please try again."	2. Enter valid input data for all the required fields 3. Click Next to continue entering the inputs for the required fields (password). However, for the re-enter password field, enter an invalid input 4. Click on the Sign Up button	the bottom left of the page): "Registration Unsuccessful. Something went wrong. Please try again."		
B1	Verify error message when Name is empty	Ensure the error message is displayed when the name field is left empty	User clicks on the sign up button and is on the sign up page	Name: (empty)	Error message: "Name is required" is displayed	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields, except for the name field which is to be left empty	Error message: "Name is required" is displayed in red	Pass	

B2	Verify error message when Email is empty	Ensure the error message is displayed when the email field is left empty	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email:(empty)	Error message: "Email is required" is displayed	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields, except for the email field which is to be left empty	Error message: "Email is required" is displayed in red	Pass	
B3	Verify error message when Email is invalid	Ensure the error message is displayed when the email field contains an invalid email address	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email: jwong165 (invalid email address)	Error message: "Email has to be valid" is displayed	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields, except for the email field which has an invalid email address format	Error message: "Email has to be valid" is displayed in red	Pass	

B4	Verify error message when OTP is empty	Ensure the error message is displayed when the OTP field is left empty	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email: jwong165@e.ntu.edu.sg , OTP: (empty)	Error message: "OTP is required" is displayed	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields, except for the OTP field which is to be left empty	Error message: "OTP is required" is displayed in red	Pass	
B5	Verify error message when password is empty	Ensure the error message is displayed when the password field is left empty	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email: jwong165@e.ntu.edu.sg , OTP: 5233, Password: (empty)	Error message: "Password is required" is displayed Error message (on the bottom left of the page): "Registration Unsuccessful. Something went wrong. Please try again."	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields 3. Click Next and leave the password empty 4. Click on the Sign Up button	Error message: "Password is required" is displayed in red Error message (on the bottom left of the page): "Registration Unsuccessful. Something went wrong. Please try again."	Pass	

B6	Verify error message when password does not meet requirements	Ensure the error message is displayed when the password field does not meet the requirements	User clicks on the sign up button and is on the sign up page	Name: Jeannie, Email: jwong165@e.ntu.edu.sg , OTP: 5233, Password: 12345, Re-Enter Password: 12345	Error message: "Password has to be at least 8 characters long" is displayed Error message (on the bottom left of the page): "Registration Unsuccessful. Something went wrong. Please try again."	1. Click on the Sign Up button and navigate to the Sign Up page 2. Enter valid input data for all the required fields 3. Click Next to continue entering the inputs for the required fields (password and re-enter password) - enter passwords which does not meet requirements 4. Click on the Sign Up button	Error message: "Password has to be at least 8 characters long" is displayed in red Error message (on the bottom left of the page): "Registration Unsuccessful. Something went wrong. Please try again."	Pass	
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Forgot Password Functionality

Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify successful reset password with valid email	Ensure the forgot password functionality works correctly for a valid email address	User has registered for a user account on the website	Email: jwong165@e.ntu.edu.sg (registered email)	User is sent an email with a link to reset password The message : "Password Changed. Don't forget next time!" will be displayed at the bottom left of the page	1. Navigate to the website's login page 2. Click on Forgot Password 3. Enter valid email address registered on the website 4. Click on the Reset Password button	User is sent an email with a link to reset password The message : "Password Changed. Don't forget next time!" will be displayed at the bottom left of the page	Pass	
B1	Verify error message when email field is empty	Ensure the error message is displayed when the email field is left empty	User is on the "Reset your password" page	Email : (empty)	Error message "Email is required." is displayed	1. Navigate to the website's login page 2. Click on Forgot Password 3. Leave the email field empty	Error message "Email is required." is displayed in red	Pass	

B2	Verify error message when email field is invalid	Ensure the error message is displayed when the email field contains an invalid email address	User is on the "Reset your password" page	Email : jwong165 (invalid email)	Error message "Email has to be valid." is displayed	1. Navigate to the website's login page 2. Click on Forgot Password 3. Enter a invalid email address	Error message "Email has to be valid." is displayed in red	Pass	
B3	Verify user is able to login into existing user account with new password	Ensure the forgot password functionality works correctly for a valid email address, the user is able to reset password which matches the requirements and is able to login into the existing user account with a new password	User has registered for a user account on the website	Email: jwong165@e.ntu.edu.sg (registered email) Current Password : SC2006pwd!02 Reset Password: SC200602!	User is able to reset password successfully and login into the existing user account with a new password The message : "Password Changed. Don't forget next time!" will be displayed at the bottom left of the page An alert box stating that "Password changed. You can now sign in with your new password."	1. Navigate to the website's login page 2. Click on Forgot Password 3. Enter a valid email address 4. Click on the Reset Password button 5. Click on the reset password link in the email 6. Type in a new password which matches the requirements (uppercase,	User is able to reset password successfully and login into the existing user account with a new password The message : "Password Changed. Don't forget next time!" will be displayed at the bottom left of the page An alert box stating that "Password changed. You can now sign in with your new password."	Pass	

						<p>lowercase characters, with numbers and symbols which is at least 8 characters long)</p> <p>7. Click on save</p> <p>8. Navigate to the login page</p> <p>9. Enter the existing email address and new password</p> <p>10. Click login</p>			
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View Profile Functionality

Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify that the user is able to access his profile and able to click on the link to authenticate his user account with Strava API	Ensure that the profile page is accessible and the link is working	User is on the profile page	Click on the link 'Authenticate with Strava'	User is able to access the profile page and click on the link which will redirect him to Strava API	1. Select the profile option in the menu 2. Click on the 'Authenticate with Strava' link 3. User will be redirected to the Strava API page	User is able to access the profile page and click on the link which will redirect him to Strava API	Pass	
EC2	Verify that the user is able to connect his user account to Strava API	Ensure that the user account on PeakVisor is able to connect to Strava API	User is on the profile page	1. Click on the link 'Authenticate with Strava' 2. Email: jwong165@e.ntu.edu.sg , Password: SC2006pwd!02 3. Click Log In 4. Click Authorize	The user can click the link to authenticate his account with Strava API, log in using his email address and password, and grant PeakVisor permission to connect to Strava API	1. Select the profile option in the menu 2. Click on the 'Authenticate with Strava' link 3. User will be redirected to the Strava API page 4. Enter the email and password 5. Click Log In	The user can click the link to authenticate his account with Strava API, log in using his email address and password, and grant PeakVisor permission to connect to Strava API	Pass	

						6. Click Authorize when asked to authorize PeakVisor to connect to Strava			
B1	Verify that the user is able to view his previous hiking details	Ensure that the user's previous hiking details and statistics are displayed on the page	User is on the profile page and User account is connected to Strava API	1. Click on the link 'Authenticate with Strava' 2. Click Authorize	User is able to view his previous hiking details and their statistics	1. Select profile option in the menu 2. Click on the 'Authenticate with Strava' link 3. User will be redirected to the Strava API page 4. Click Authorize when asked to authorize PeakVisor to connect to Strava 5. User will be redirected back to the PeakVisor website where he can view his previous hiking details	User is able to view his previous hiking details and their statistics	Pass	

Manage Profile Functionality

Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify successful editing of user account details	Ensure that the user is able to edit his user account details and the updated user account information will be displayed and enabled after the user edits it	User is on the Account Settings page	Name: Jean (edited) Strava: Not Connected, Email: jwong165@e.ntu.edu.sg Change Password: SC2006password!02 (edited)	Updated user account details will be displayed and user can login with updated details A prompt saying "A password reset email has been sent to you. Check your email!" will be displayed in green at the side. An alert box stating that "Password changed. You can now sign in with your new password."	1. Select the settings option in the menu 2. Click on edit under the name field and edit the name 3. Click on save under the name field to save changes 4. Click on the change password button - an email will be sent to the user's inbox 5. Click on the reset password link in the email 6. Type in a new password which matches the requirements (uppercase, lowercase characters, with numbers and symbols which is at	Updated user account details will be displayed and user can login with updated details A prompt saying 'A password reset email has been sent to you Check your email!' will be displayed in green at the side. An alert box stating that "Password changed. You can now sign in with your new password."	Pass	Name and Password for the particular user account will be updated onto the database

						<p>least 8 characters long)</p> <p>7. Click on save</p> <p>8. Navigate to the login page</p> <p>9. Enter the existing email address and new password</p> <p>10. Click login</p>			
EC2	Verify that the user is able to delete his user account	Ensure that the user is able to delete his user account and user account will be removed after 7 days	User is on the Account Settings page	Click on Delete Account	User will be automatically logged out of their user account and it will be removed from the database after 7 days	<p>1. Select the settings option in the menu</p> <p>2. Click on delete account</p>	User will be automatically logged out of their user account and it will be removed from the database after 7 days	Pass	User account will be removed from the database after 7 days
B1	Verify error message when name is empty	Ensure the error message is displayed when the name field is empty	User is on the Account Settings Page	Name: (empty)	Error message "Name is required." is displayed	<p>1. Select the settings option in the menu</p> <p>2. Click on edit under the name field and leave it empty</p> <p>3. Click on save under the name field to save changes</p>	Error message "Name is required." is displayed in red	Pass	

B3	Verify error message when name is invalid	Ensure the error message is displayed when the name field is invalid	User is on the Account Settings Page	Name: 123jean (invalid name)	Error message "Name is invalid." is displayed	1. Select the settings option in the menu 2. Click on edit under the name field and enter an invalid input 3. Click on save under the name field to save changes	Error message "Name is invalid." is displayed in red	Pass	
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View Trails Functionality

Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify that specific information of the trail will be displayed when the user selects it	Ensure that information of the trail selected will be displayed	User is on the Trails Page	Select a specific trail - e.g. 'Macritchie Nature Trail'	General information, address, bearings and rating of the specific trail will be displayed	1. Select Trails at the top of the website 2. Select 'Macritchie Nature Trail'	General information, address, bearings and rating of the specific trail is displayed	Pass	

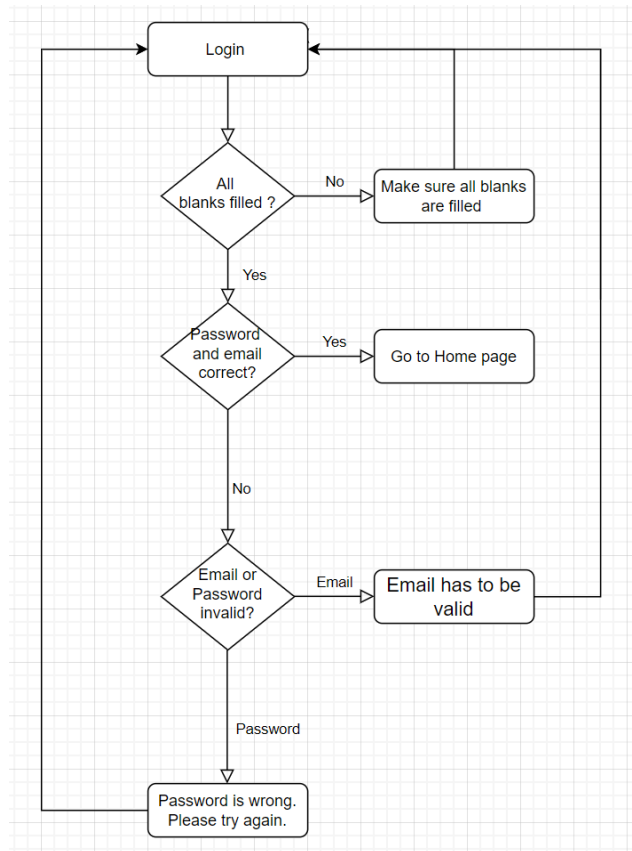
View Events Functionality

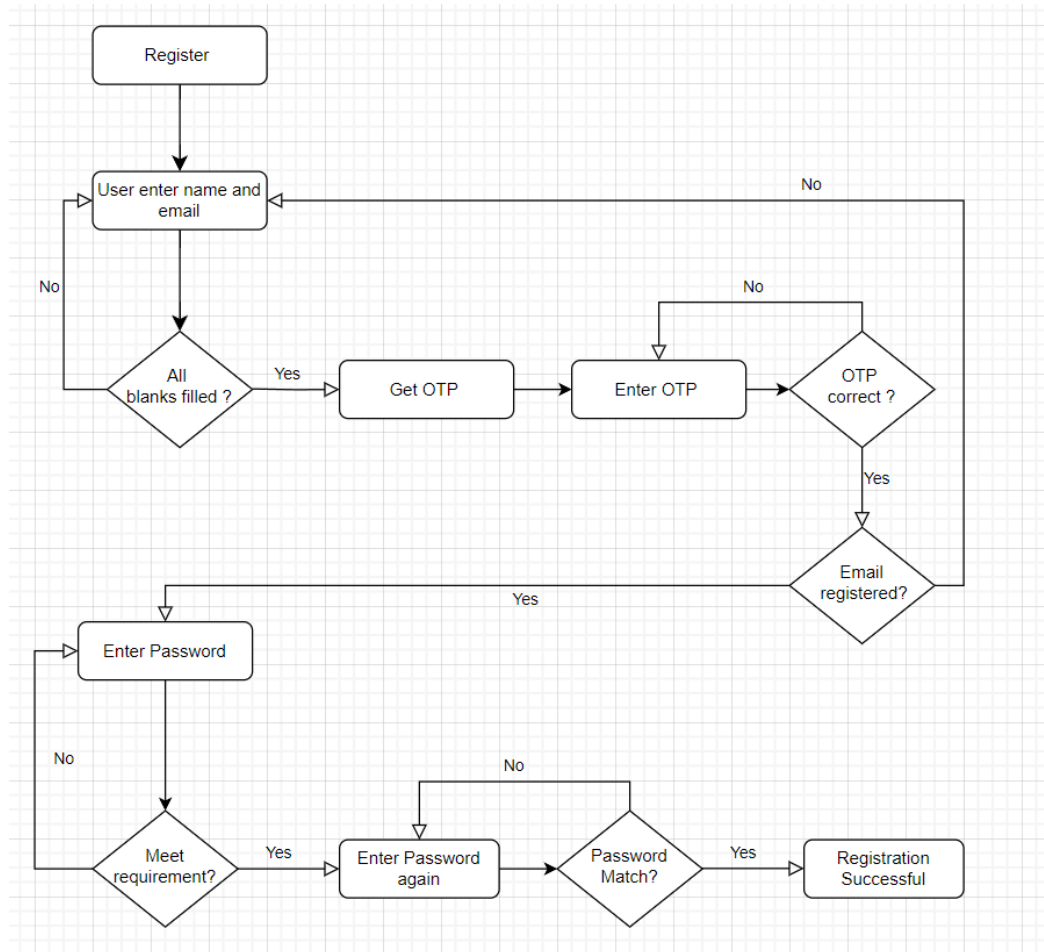
Test Case ID	Test Case Description	Test Objective	Preconditions	Inputs	Expected outcome	Test Steps	Actual outcome	Pass/Fail	Notes
EC1	Verify that specific information of the event will be displayed when the user selects it	Ensure that information of the event will be displayed when it is selected	User is on the Events Page	Select a specific event - e.g. '1D Gunong Arong Hike'	Details of the event (date/time, location, attendees etc;) will be displayed and user can join the event	1. Select Events at the top of the website 2. Select '1D Gunong Arong Hike'	Details of the event (date/time, location, attendees etc;) will be displayed and user can join the event	Pass	

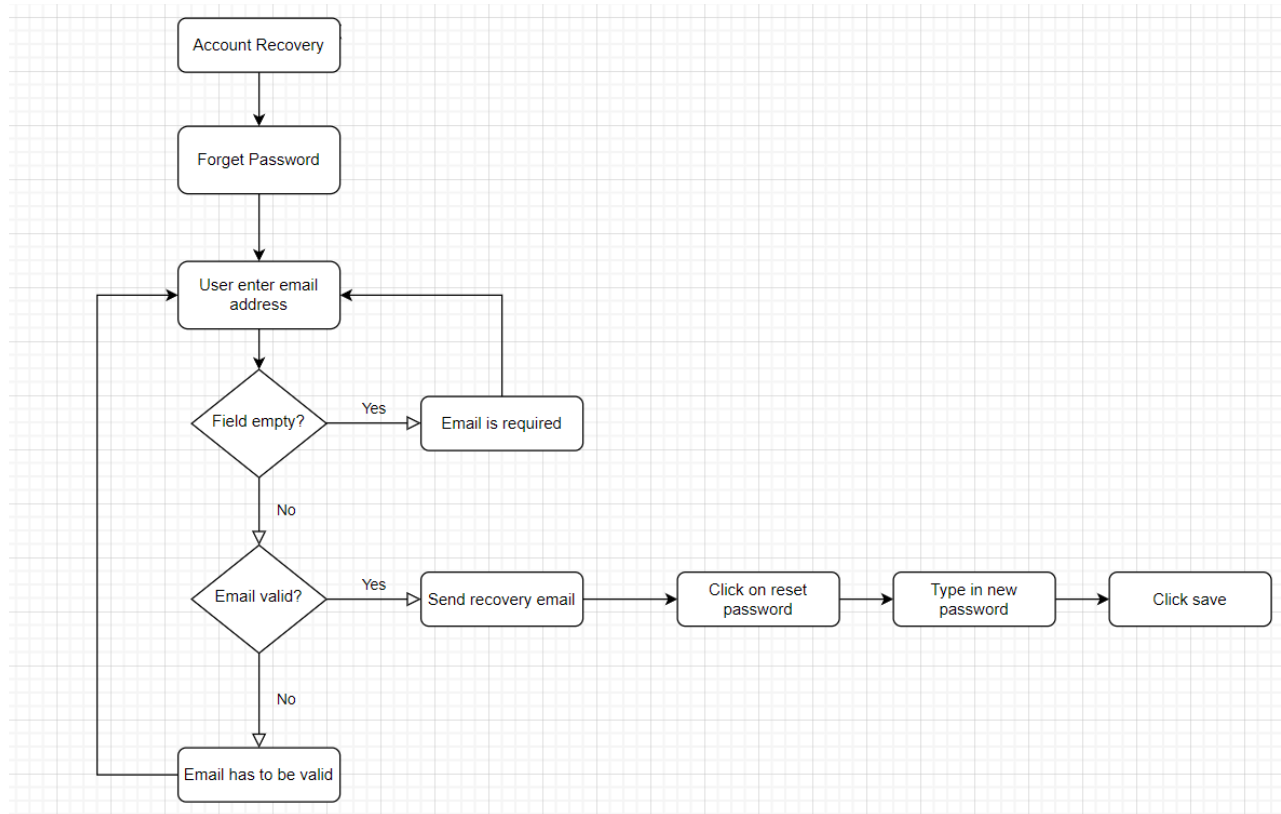
White Box Testing

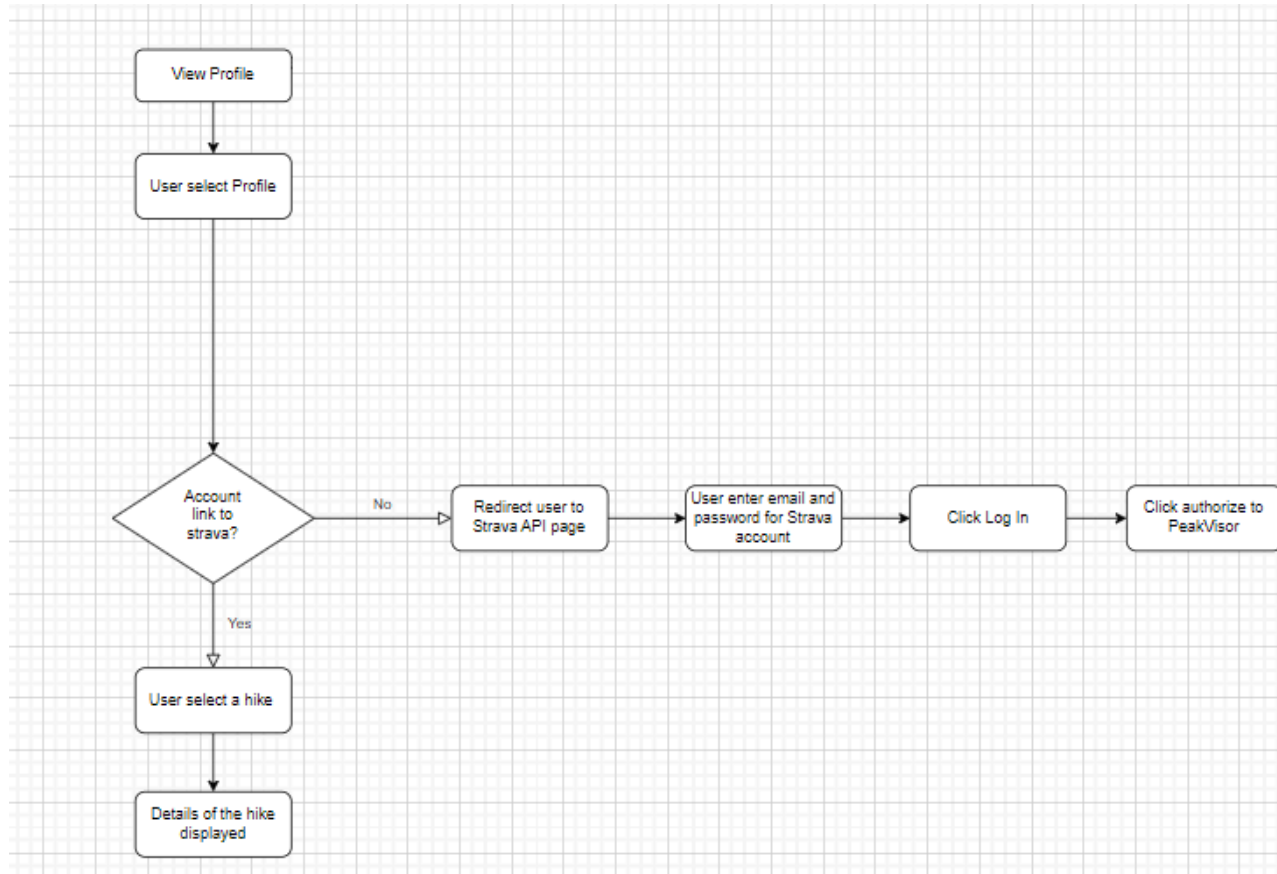
Control Flow Diagrams

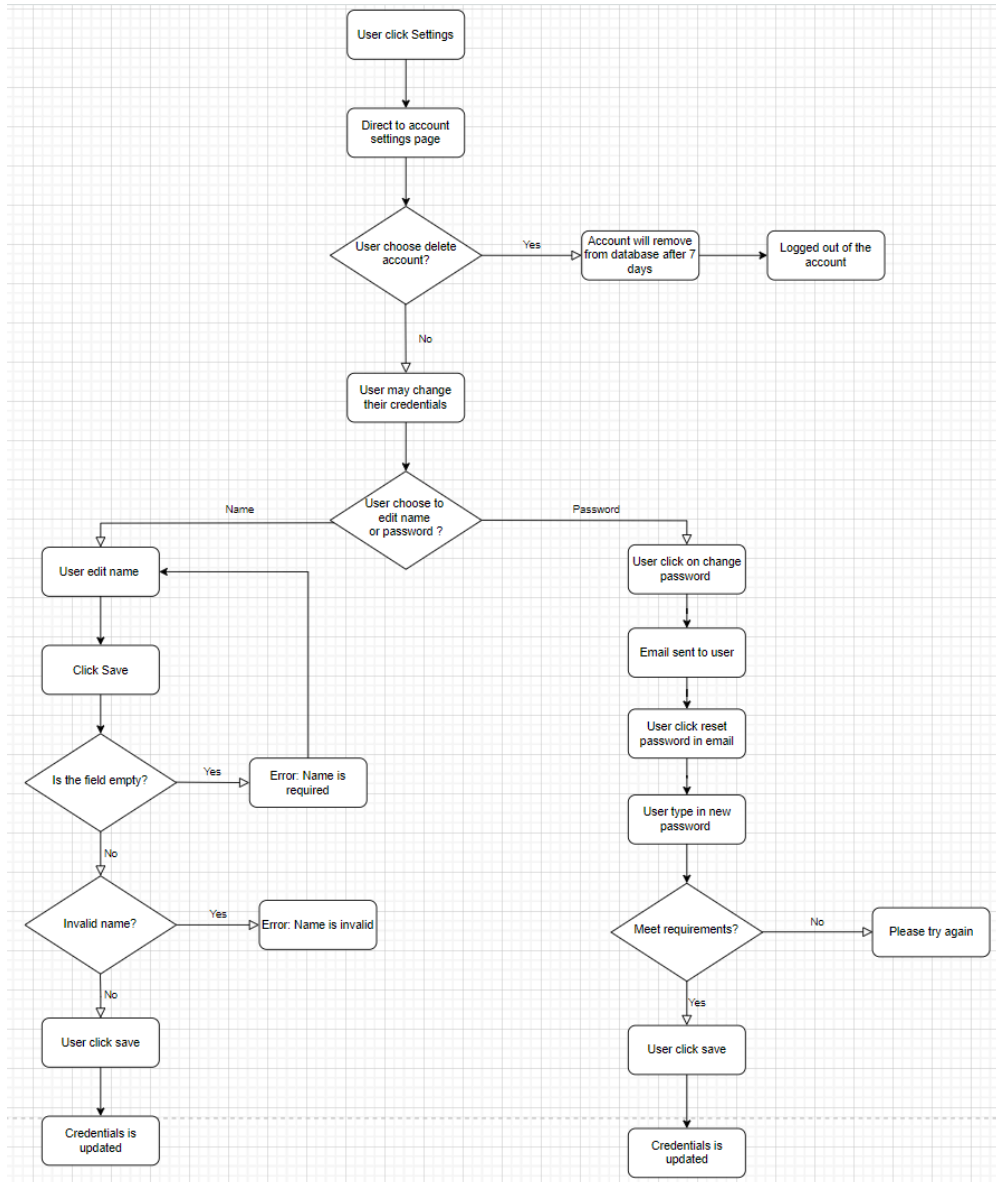
Functionality: Login



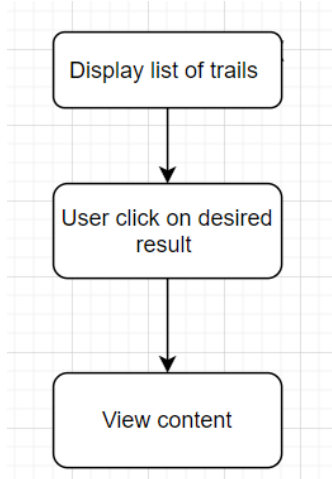
Functionality: Register

Functionality: Forgot Password

Functionality: View Profile

Functionality: Manage Profile

Functionality: Search Trails & View Trails



Functionality: Search Events & View Events

