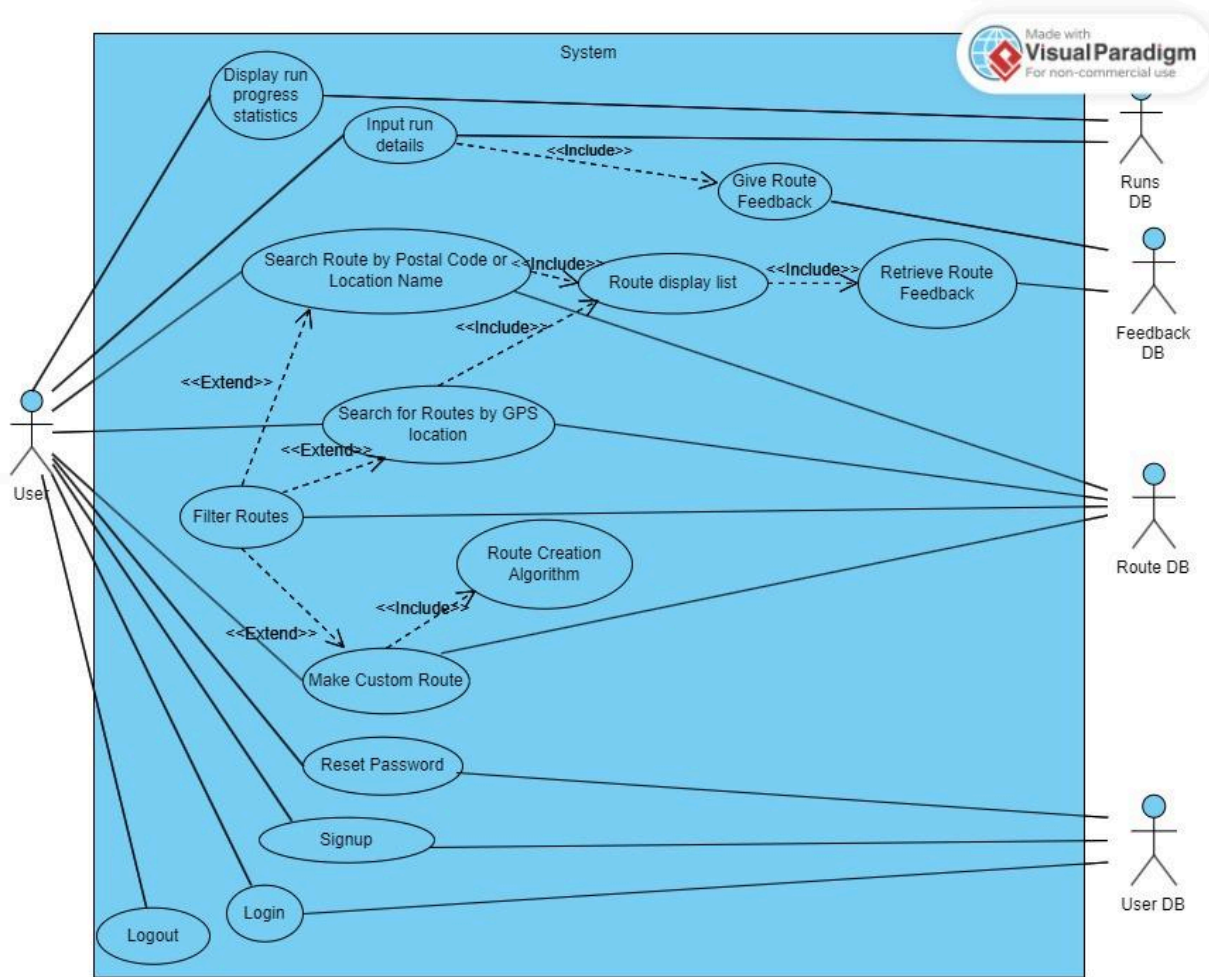


## Use Case Diagram



## Use Case Description

Use Case ID:	1.1		
Use Case Name:	Register		
Created By:	Wong Zi Lun	Last Updated By:	Wong Zi Lun
Date Created:	07/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor), User DB
Description:	Allows users to create an account
Preconditions:	The User does not already have an Account with User DB
Postconditions:	The User creates an Account  or  The User receives an explanation from the System why an Account could not be created
Priority:	High
Frequency of Use:	Frequent
Flow of Events:	<ol style="list-style-type: none"><li>1. The User selects the option "Create Account"</li><li>2. The System opens a Registration Form</li><li>3. The System requests the input of the User's particulars – Username, Name, Password, Email and Date of birth</li><li>4. The User enters their particulars into all mandatory text fields – Username, Name, Password and Email</li><li>5. The User submits the Registration Form</li><li>6. The System verifies that all mandatory text fields are filled</li><li>7. The System verifies that all text fields are filled with valid data</li><li>8. The System verifies that the User does not already have an account in User DB</li><li>9. The System creates an Account with the corresponding particulars for the User</li></ol>
Alternative Flows:	<p>AF-S6: If a mandatory text field is empty</p> <ol style="list-style-type: none"><li>1. The System displays the message "Please fill in all mandatory fields!" for 2 seconds</li><li>2. The System highlights the mandatory text fields that are empty</li><li>3. The System returns to step 3</li></ol> <p>AF-S7: If the text fields contain invalid data</p>

	<ol style="list-style-type: none"> <li>1. The System displays the message “Invalid data. Please re-enter your particulars” for 2 seconds</li> <li>2. The System highlights the text fields with invalid data</li> <li>3. The System returns to step 3</li> </ol> <p>AF-S8: If the User already has an Account in User DB</p> <ol style="list-style-type: none"> <li>1. The System displays the message “An account with this username already exists! Please try again!” for 2 seconds</li> <li>2. The System returns to step 3</li> </ol>
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	1.2		
Use Case Name:	Login		
Created By:	Wong Zi Lun	Last Updated By:	Wong Zi Lun
Date Created:	07/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor), User DB
Description:	Allows the User to login to their Account
Preconditions:	The User has created an Account before
Postconditions:	The User is logged into their Account
Priority:	High
Frequency of Use:	Frequent
Flow of Events:	<ol style="list-style-type: none"> <li>1. The User visits the Login Page</li> <li>2. The System opens a Login Form</li> <li>3. The System requests the input of the User’s username and password</li> <li>4. The User enters the username and password of their Account</li> <li>5. The User selects Login</li> <li>6. The System verifies that the username and password is valid</li> </ol>

	7. The System logs the User into their Account
Alternative Flows:	AF-S6: The username or password the User entered is invalid 1. The System displays the message “Invalid username or password! Please try again!” for 2 seconds 2. The System returns to the step 3
Exceptions:	EX1: If the User enters an invalid username or password for 5 times 1. The System displays the message “Your account has been temporarily frozen due to multiple unsuccessful login attempts. Please try again in 3 minutes.” for 2 seconds 2. The System returns to the login page
Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	1.3		
Use Case Name:	Logout		
Created By:	Wong Zi Lun	Last Updated By:	Wong Zi Lun
Date Created:	07/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor)
Description:	Allows the User to logout of their Account
Preconditions:	The User is logged into their Account
Postconditions:	The User is logged out of their Account
Priority:	High
Frequency of Use:	Frequently
Flow of Events:	1. The User selects the option “Logout” 2. The System prompts the user for logout confirmation 3. The User selects the confirmation that they want to logout 4. The System logs the User out of their Account

Alternative Flows:	
Exceptions:	EX3: The User confirms that they do not want to logout 1. The System returns the User to the Home Page
Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	1.4		
Use Case Name:	Forget Password		
Created By:	Wong Zi Lun	Last Updated By:	Wong Zi Lun
Date Created:	07/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor), UserDB
Description:	Allows the User to reset the password of their Account
Preconditions:	The User has created an Account before
Postconditions:	The User's Account password is changed
Priority:	High
Frequency of Use:	Occasionally
Flow of Events:	<ol style="list-style-type: none"> <li>1. The User selects the option "Forget password"</li> <li>2. The System creates a Form.</li> <li>3. The System requests the input of the User's Account's email address</li> <li>4. The User inputs their Account's email address</li> <li>5. The User selects "Submit"</li> <li>6. The System verifies that the email address is valid</li> <li>7. The System sends a link to the User's email address to reset their password</li> <li>8. The User selects the link in the email</li> <li>9. The System requests the input of the User's Account's new password and confirmation of their new password</li> <li>10. The User inputs their new password, and re-enters their new</li> </ol>

	password for confirmation 11. The System verifies the input of the User's new password matches their confirmation 12. The System changes the password of the User's Account to the new password
Alternative Flows:	AF-S6: The email address is invalid 1. The System displays the message "Invalid email address! Please try again!" for 2 seconds 2. The System returns to the step 3  AF-S11: The new password and the confirmation do not match 1. The System displays the message "Password does not match! Please try again!" for 2 seconds 2. The System returns to the step 9
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	2.1		
Use Case Name:	Search route by postal code or location name		
Created By:	Javen Ong Jing Hian	Last Updated By:	Wong Zi Lun
Date Created:	08/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor), Route Database
Description:	Gives list of routes based on postal code or location name User inputted
Preconditions:	User is logged into their account
Postconditions:	User gets a list of routes according to search
Priority:	High
Frequency of Use:	Frequent

Flow of Events:	<ol style="list-style-type: none"> <li>1. The User selects the option “Browse” in the Home Page</li> <li>2. The System displays the option to search by GPS or location name and postal code</li> <li>3. The User selects the option to search by location name and postal code</li> <li>4. The System creates a Search Form</li> <li>5. The System requests the input of the desired starting location, ending location, and required distance</li> <li>6. The User enters the start location, end location and desired distance</li> <li>7. The User selects “Search”</li> <li>8. The System verifies that at least one of the text fields are filled up</li> <li>9. The System retrieves a list of routes that matches the user’s requirements and their ratings, reviews, distance, route terrain and estimated route completion time from Route Database</li> <li>10. The System displays the list of routes and their respective details</li> </ol>		
Alternative Flows:	AF-S8: None of the text fields are filled in <ol style="list-style-type: none"> <li>1. The System displays the message “Please fill in at least 1 of the text fields!” for 2 seconds</li> <li>2. The System returns to the step 5</li> </ol>		
Exceptions:			
Includes:			
Special Requirements:			
Assumptions:			
Notes and Issues:			

Use Case ID:	2.2		
Use Case Name:	Search for routes by GPS location services		
Created By:	Javen Ong Jing Hian	Last Updated By:	Wong Zi Lun
Date Created:	08/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor), Route Database
Description:	Gives list of routes based on User's GPS location
Preconditions:	User is logged into their account
Postconditions:	User gets a list of routes nearest to his current GPS location
Priority:	High
Frequency of Use:	Frequent
Flow of Events:	<ol style="list-style-type: none"> <li>1. The User selects the option "Browse" in the Home Page</li> <li>2. The System displays the option to search by GPS or location name and postal code</li> <li>3. The User selects the option to search by GPS</li> <li>4. The System requests the User to turn on location service</li> <li>5. The User turns on location service</li> <li>6. The System retrieves a list of routes with starting point within 1km of user's GPS location and their ratings, reviews, distance, route terrain and estimated route completion time from Route Database</li> <li>7. The System displays the list of routes and their respective details</li> </ol>
Alternative Flows:	<p>AF-S5: Location services are not available</p> <ol style="list-style-type: none"> <li>1. The System displays the message "Location services are currently not available! Please try again!" for 2 seconds</li> <li>2. The System returns to the step 4</li> </ol>
Exceptions:	<p>EX5: The User does not turn on location service</p> <ol style="list-style-type: none"> <li>1. The System displays the message "Unable to access location services!" for 2 seconds</li> <li>2. The System returns the User to the Home Page</li> </ol>
Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	



Use Case ID:	3.1		
Use Case Name:	Make custom route		
Created By:	Javen Ong Jing Hian	Last Updated By:	Wong Zi Lun
Date Created:	08/02/2024	Date Last Updated:	25/02/2024

Actor:	User (Initiating Actor), RouteDB, Route Creation Algorithm
Description:	User creates own custom route
Preconditions:	User is logged into their account
Postconditions:	User's created route is stored in route database
Priority:	High
Frequency of Use:	Frequent
Flow of Events:	<ol style="list-style-type: none"> <li>1. The User selects the option "Custom" in the Home Page</li> <li>2. The System creates a Search Form</li> <li>3. The System requests the input of a start point and end point, a particular segment(s) to include in their route or both</li> <li>4. The User enters the start point and end point, a particular segment(s) to include in their route or both</li> <li>5. The User selects "Submit"</li> <li>6. The System verifies that either a start point and end point, a particular segment(s) to include in their route or both has been entered</li> <li>7. The System generates at least 1 running route based on the User's inputs using the route creation algorithm</li> <li>8. The System displays the route(s) generated</li> <li>9. The User selects a route from the route(s) displayed to view</li> <li>10. The System will give the option to store or share the route</li> <li>11. The User selects the option to store or share the route</li> <li>12. The System stores the route to RouteDB</li> </ol>
Alternative Flows:	<p>AF-S6: The User did not input a particular segment(s) to include in their route and a start point or end point</p> <ol style="list-style-type: none"> <li>1. The System displays the message "Invalid input! Please try again!" for 2 seconds</li> <li>2. The System returns to the step 3</li> </ol> <p>AF-S7: The System is unable to generate a running route</p> <ol style="list-style-type: none"> <li>1. The System displays the message "Unable to generate</li> </ol>

	route! Please try different requirements!" for 2 seconds 2. The System returns to the step 3
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	4.1		
Use Case Name:	Input Run Details		
Created By:	Javen Ong Jing Hian	Last Updated By:	Javen Ong Jing Hian
Date Created:	21/02/2024	Date Last Updated:	25/02/2024

Actor:	User, Runs DB
Description:	Manually enter run details after a run for progress tracking
Preconditions:	User is logged into their account
Postconditions:	User's run details is stored in Runs DB
Priority:	High
Frequency of Use:	Frequent
Flow of Events:	<ol style="list-style-type: none"> <li>1. User clicks on "My Runs" page</li> <li>2. User clicks on "Input Run"</li> <li>3. System displays the input run form</li> <li>4. User keys in distance, duration and route taken on the form</li> <li>5. User clicks "Submit" for the system to record the run details</li> <li>6. System stores run details in Runs DB</li> <li>7. User is then taken to Use Case 4.2 to give feedback for the run</li> </ol>
Alternative Flows:	AF-1: User doesn't key all required fields of distance, duration and route taken <ol style="list-style-type: none"> <li>1. System asks user to enter in the required fields by</li> </ol>

	highlighting the fields that are not filled
Exceptions:	
Includes:	Use Case 4.2 - Give route feedback
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	4.2		
Use Case Name:	Give route feedback		
Created By:	Javen Ong Jing Hian	Last Updated By:	Javen Ong Jing Hian
Date Created:	08/02/2024	Date Last Updated:	25/02/2024

Actor:	User(Initiating Actor), Route Review Database
Description:	User gives review on a route that they have input for their run
Preconditions:	User has input a run into "My Runs"
Postconditions:	User's review is stored in the route review database
Priority:	Medium
Frequency of Use:	Occasionally
Flow of Events:	<ol style="list-style-type: none"> <li>1. System displays feedback form for user to input</li> <li>2. User rates the route on a scale from 1 to 5</li> <li>3. User inputs up to 1000 characters on the comment for the route</li> <li>4. User submits the review by clicking "Submit"</li> <li>5. Review is created for the particular route and stored in the route review database</li> </ol>
Alternative Flows:	AF-1: No star rating is given <ol style="list-style-type: none"> <li>1. System shows error message: "Star rating must be given"</li> <li>2. System returns to the feedback form</li> </ol>
Exceptions:	

Includes:	
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	4.3		
Use Case Name:	Display run progress statistics		
Created By:	Javen Ong Jing Hian	Last Updated By:	Javen Ong Jing Hian
Date Created:	21/02/2024	Date Last Updated:	25/02/2024

Actor:	User(Initiating Actor), Runs DB
Description:	Manually enter run details after a run for progress tracking
Preconditions:	User is logged into their account
Postconditions:	System displays total distance ran, total duration ran in 1 week, 1 month, 6 months, 1 year. System also displays average speed improvement in the past 6 months and a graph showing the trend of average speed
Priority:	Medium
Frequency of Use:	Occasionally
Flow of Events:	<ol style="list-style-type: none"> <li>1. User clicks on "My Runs" page</li> <li>2. User clicks on "View Run History"</li> <li>3. System takes User's records from Runs DB</li> <li>4. System displays the relevant run statistics that are calculated from all the run details in database</li> </ol>
Alternative Flows:	
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	

Notes and Issues:	
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