

Containment Zone Alerting App

Project Done By: Varun Hameer Dutia, VIT University Chennai

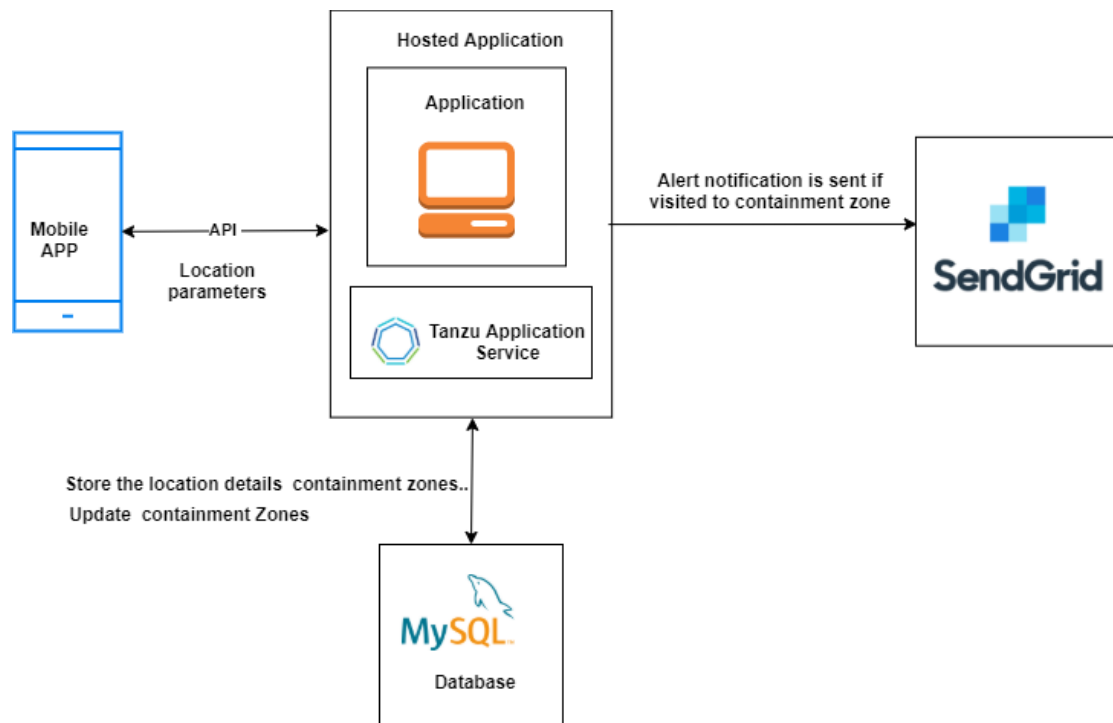
Project Idea:

This application is intended to provide information about containment zones in a particular region by alerting people, through continuous monitoring of an individual's location. Key benefits of the application are monitoring people's activity and alerting them to their safety movements.

Solution Requirement:

The project aims at building an application that provides information about the containment zones of a particular region by continuously monitoring an individual's location. The location of the individual must be stored in the Database. Alerts are sent using the notification service. current location. If the user is visiting the containment zone he will get an alert notification.

Proposed Solution Architecture :



Softwares Used:

- Visual Studio Code
- Android Studio
- Docker
- VMware Tanzu
- Remote MySQL
- SendGrid

Features of the Application

Admin App (portal):

The Admin Web Application has login to app and update the containment zones locations in the portal. Based on the location a Geofence will be created within a 100 meters radius. They should be able to see how many people are visiting that zone.

UserApp (Mobile App):

The app has a user registration and login. After the user logged into the app it will track the user location and update the database with the current location. If the user is visiting the containment zone he will get an alert notification.

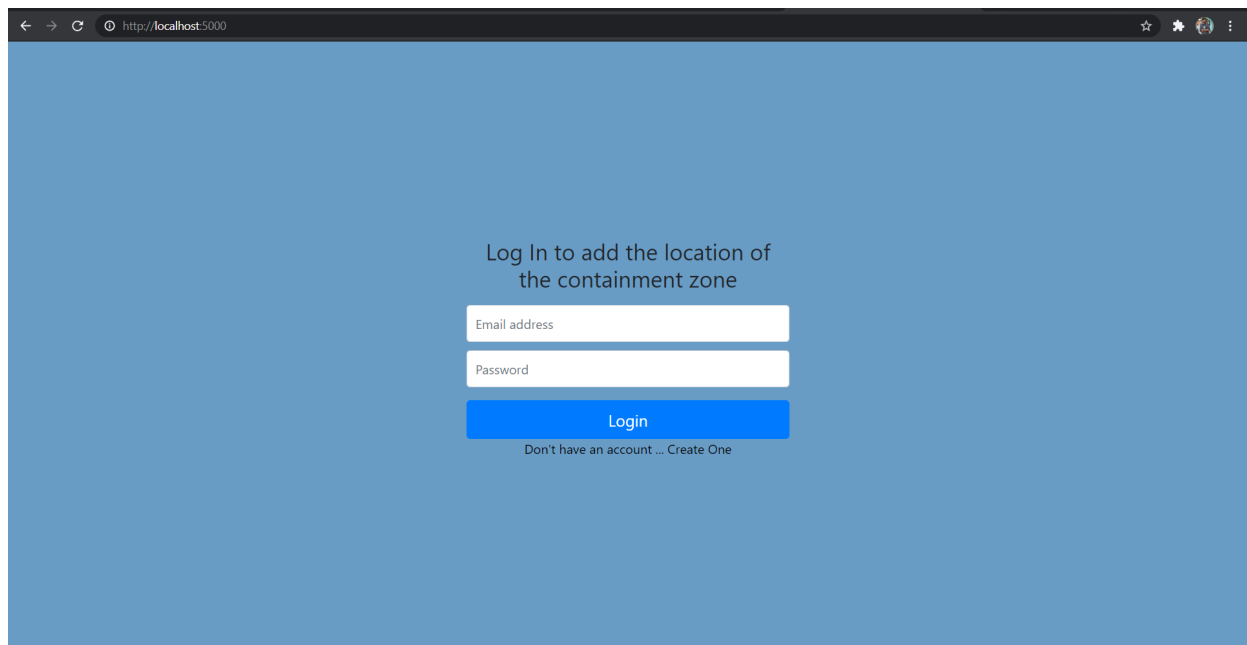
Frameworks Used:

- Python (flask)
- HTML,CSS,Javascript
- Java (Android Control)
- XML (Android UI)
- Volley (API Integration for Android)
- MySQL database

Results:

Admin App:

- Log In Page



Log In to add the location of the containment zone

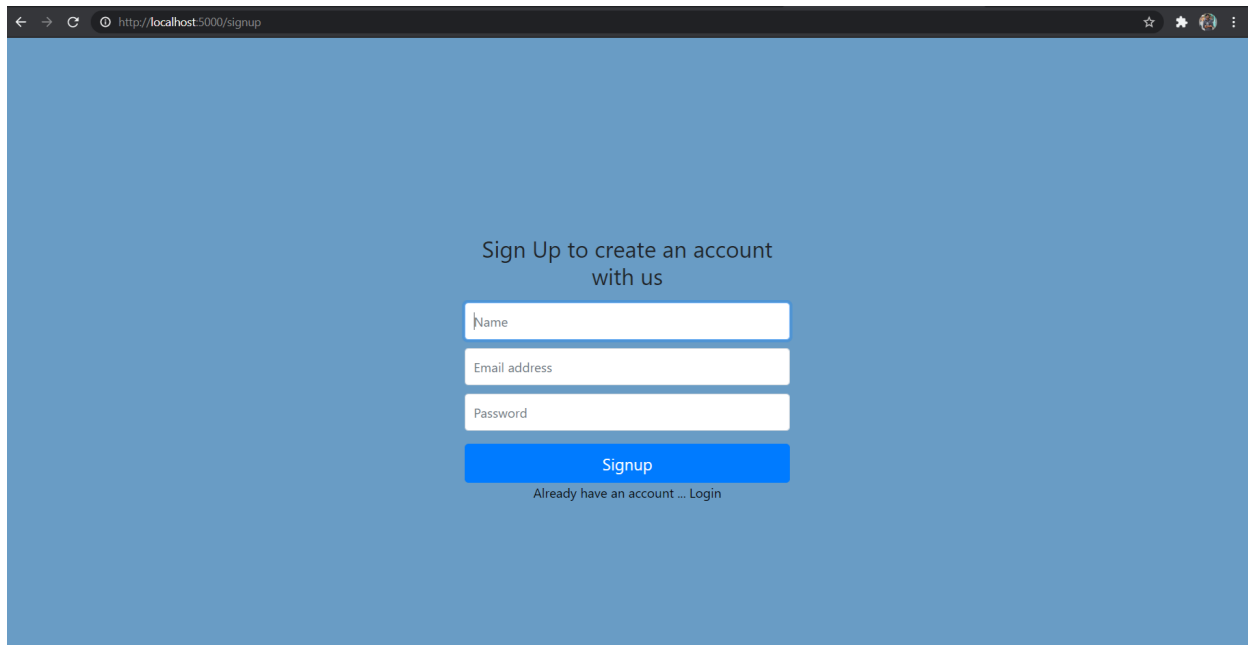
Email address

Password

Login

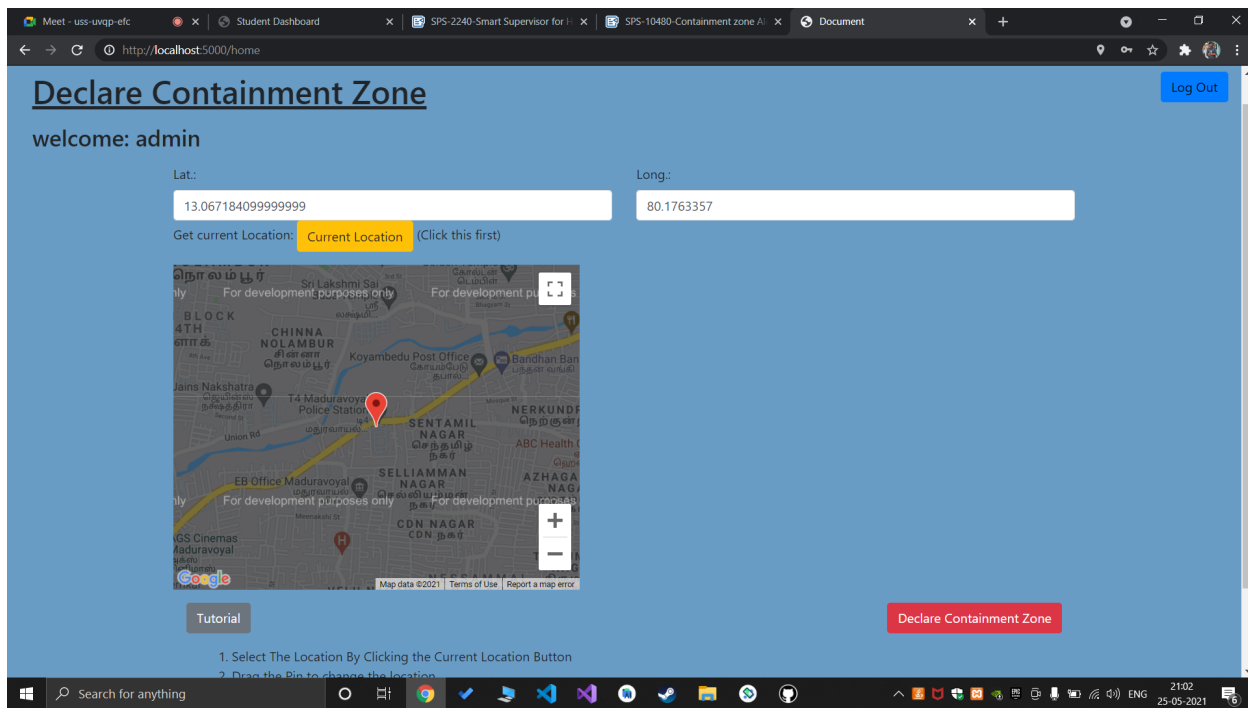
[Don't have an account ... Create One](#)

- Register Page



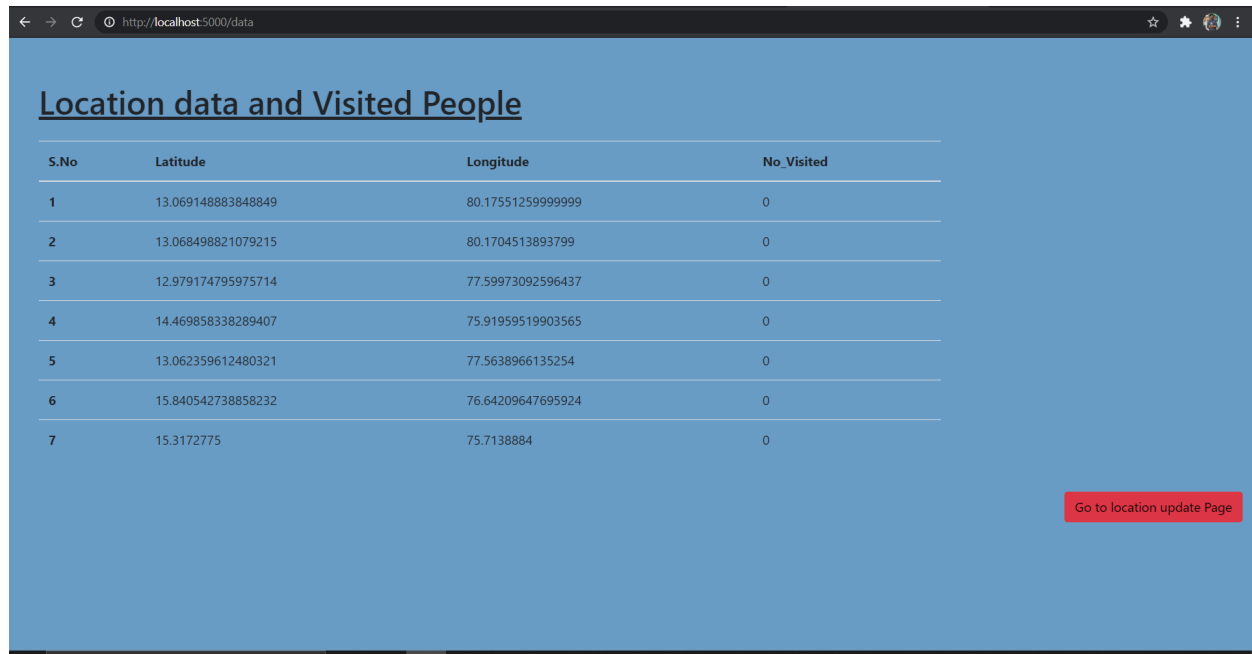
A screenshot of a web browser showing a registration page at <http://localhost:5000/signup>. The page has a solid blue background. In the center, the text "Sign Up to create an account with us" is displayed. Below this text are three white input fields with black borders, labeled "Name", "Email address", and "Password". Underneath these fields is a blue button with the text "Signup" in white. At the bottom, there is a link that says "Already have an account ... Login".

- Home Page



A screenshot of a web browser showing a home page at <http://localhost:5000/home>. The page has a blue header with the title "Declare Containment Zone" and a "Log Out" button. Below the header, it says "welcome: admin". There are two input fields for "Lat:" (containing "13.067184099999999") and "Long:" (containing "80.1763357"). Below these is a "Get current Location:" section with a yellow "Current Location" button and the text "(Click this first)". A map of a city area is shown below the location fields. At the bottom, there is a "Tutorial" button and a red "Declare Containment Zone" button. The Windows taskbar is visible at the bottom of the screen.

- Location Data Page

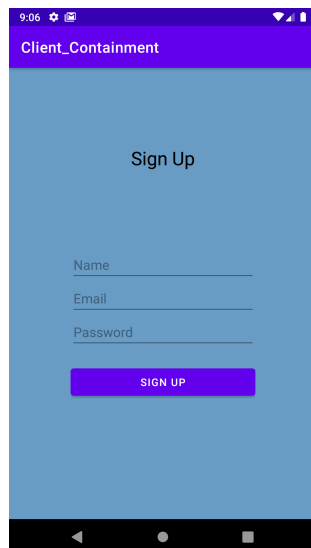


The screenshot shows a web browser window with the address bar displaying 'http://localhost:5000/data'. The page has a blue background and a title 'Location data and Visited People' in bold black text. Below the title is a table with four columns: 'S.No', 'Latitude', 'Longitude', and 'No_Visited'. The table contains seven rows of data. In the bottom right corner, there is a red button with the text 'Go to location update Page'.

S.No	Latitude	Longitude	No_Visited
1	13.069148883848849	80.17551259999999	0
2	13.068498821079215	80.1704513893799	0
3	12.979174795975714	77.59973092596437	0
4	14.469858338289407	75.91959519903565	0
5	13.062359612480321	77.5638966135254	0
6	15.840542738858232	76.64209647695924	0
7	15.3172775	75.7138884	0

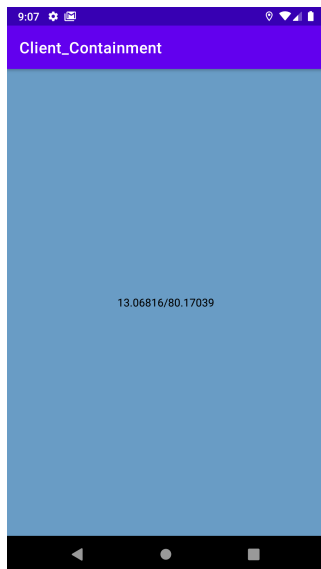
Client Application:

- Register Screen

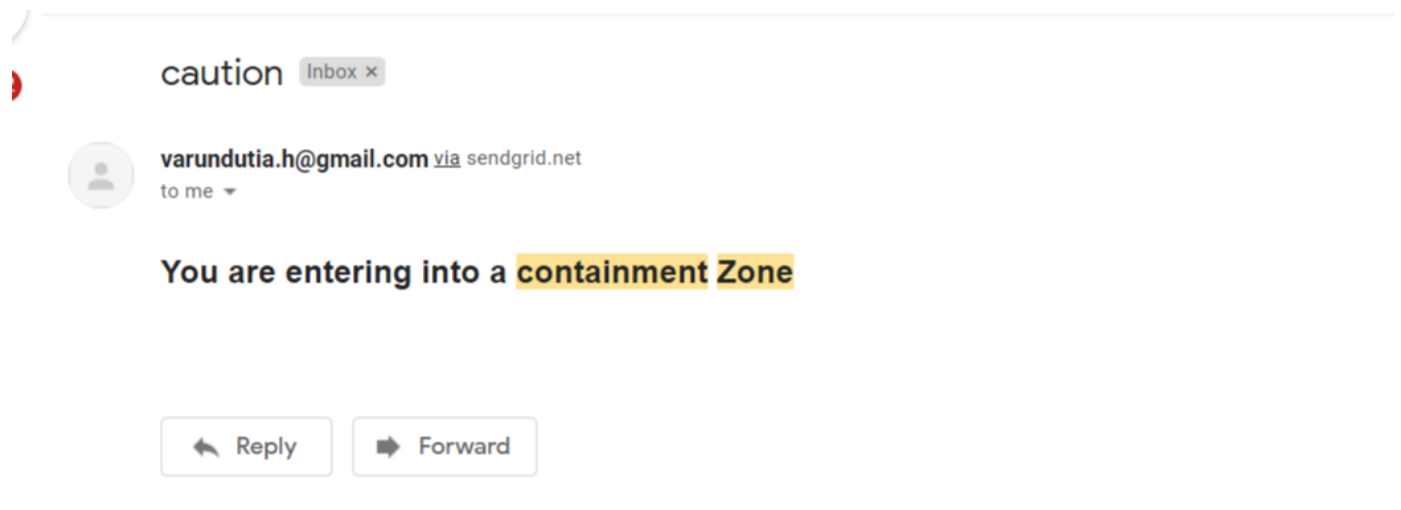


The screenshot shows a mobile application interface for a 'Client_Containment' app. The screen is titled 'Sign Up'. It features three input fields for 'Name', 'Email', and 'Password'. Below these fields is a blue button labeled 'SIGN UP'. The status bar at the top shows the time as 9:06 and various icons.

- Current Location



An Email will be sent to the registered mail id if the location is within 100 meters of the locations present in the admin app.



Data:

Filters									
Containing the word: <input type="text"/>									
Table	Action	Rows	Type	Collation	Size	Overhead			
<input type="checkbox"/> LOCATION	★ Browse Structure Search Insert Empty Drop	7	InnoDB	utf8_unicode_ci	16 KiB	-			
<input type="checkbox"/> USERS	★ Browse Structure Search Insert Empty Drop	14	InnoDB	utf8_unicode_ci	32 KiB	-			
<input type="checkbox"/> USER_LOCATION	★ Browse Structure Search Insert Empty Drop	131	InnoDB	utf8_unicode_ci	16 KiB	-			
3 tables	Sum	152	InnoDB	utf8_unicode_ci	64 KiB	0 B			

Location Table values:

SELECT * FROM `LOCATION`						
<input type="checkbox"/> Show all Number of rows: <input type="text" value="25"/> Filter rows: <input type="text" value="Search this table"/> Sort by key: <input type="text" value="None"/>						
+ Options						
<input type="checkbox"/>	Edit	Copy	Delete	location_id	location_lat	location_long
<input type="checkbox"/>	Edit	Copy	Delete	22	13.069148883848849	80.17551259999999
<input type="checkbox"/>	Edit	Copy	Delete	23	13.068498821079215	80.1704513893799
<input type="checkbox"/>	Edit	Copy	Delete	24	12.979174795975714	77.59973092596437
<input type="checkbox"/>	Edit	Copy	Delete	25	14.469858338289407	75.91959519903565
<input type="checkbox"/>	Edit	Copy	Delete	26	13.062359612480321	77.5638966135254
<input type="checkbox"/>	Edit	Copy	Delete	27	15.840542738858232	76.64209647695924
<input type="checkbox"/>	Edit	Copy	Delete	28	15.3172775	75.7138884
						location_visited
						0
						0
						0
						0
						0
						0

User Table Values:

SELECT * FROM `USERS`

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	user_id	user_name	user_email	user_password	user_type
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	17	varun	varun@1206.com	\$2b\$14\$QPwk3HL7dxM0xiWw3h8E4OND7V0uEWGXSzVZbcwNLHji...	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	18	fdgsdg	sfdg@fdv.com	\$2b\$14\$3nxJW4yBjtarfW.e4dOpeOOWCnQXPg5oEMHJf3bKRu...	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	20	varun	varun@22.com	\$2b\$14\$uP4Dg.CEpeZt0hNk8tMsxOLilwjN0uL2AmPG4xXRe9m...	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	22	varun	dutia28@gmail.com	12345@12	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	28	Sandeep Doodigani	sandeep.doodigani@gmail.com	\$2b\$14\$cMi9wYfmOOx.U5/JMcWvHe9vD7.ykY3EINTKikuzghR...	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	29	vsfd	tgtele@fece.com	\$2b\$14\$jNqci0eIQEhwCP3ba8Vl7uVRkZ1AnSYZV/Iu9AltEm5...	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	30	admin	navyanavya85276@gmail.com	123456	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	33	admin	varundutia@outlook.com	\$2b\$14\$iozImfaDdlo63Z/qyqw5.UosyvUo2XKGkHVKvQ5Gc9...	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	35	varun	varundutia.h@gmail.com	\$2b\$14\$Chd39vcJmFj25NbnorERO2hNd0ggqg.Dq/cVh8WQ5f...	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	37	viju	vijayararamamoorthy@gmail.com	\$2b\$14\$TfcE7nc/UUHwQtmQFeSGY.RmjivzC9Wm/Vkar.ul.8Z...	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	38	keerthi	keerthi@gmail.com	\$2b\$14\$SaoKls7JADhvEVJuwTx7Ps.VQOmYfhf9hg6Ru2uHG587...	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	39	admin	tejaswinim886@gmail	\$2b\$14\$6U9vmgbxLYNw9bzcviwfeQq30VjDiWys1E7AlqC40/...	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	40	navya	navyagadina7@gmail.com	\$2b\$14\$k4Kf2gXRjF1S8Bk8qOzVuHp8lNFq101W22/0cGvHrS...	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	41	slfv	dhhd@ghh.vij	\$2b\$14\$9K3X7Pn2rJOtbVlaraShUO7v7h.W1viflYiibwSUIWc...	1

User Location Values:

Server: localhost » Database: F5shCxBMxe » Table: USER_LOCATION

<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	38.51468	-119.494055	20	Fri May 07 02:03:09 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.3339483	80.1943267	20	Fri May 07 02:10:25 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.3248167	80.231265	20	Fri May 07 02:17:23 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.3191367	80.2786433	20	Fri May 07 02:18:18 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.3191367	80.2786433	20	Fri May 07 02:19:40 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.318635	80.2760683	20	Fri May 07 02:20:05 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.3183017	80.2739233	32	Mon May 10 15:25:43 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.159055	80.12535	32	Mon May 10 15:28:02 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1589431	80.1255213	32	Mon May 10 15:30:52 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1588523	80.1256595	32	Mon May 10 15:30:54 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1587332	80.1258492	32	Mon May 10 15:30:55 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1586849	80.1259272	32	Mon May 10 15:30:56 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1585999	80.126067	32	Mon May 10 15:30:58 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1585418	80.1261675	32	Mon May 10 15:31:00 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1584925	80.1262572	32	Mon May 10 15:31:02 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.1584472	80.1263458	32	Mon May 10 15:31:06 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.15842	80.12641	32	Mon May 10 15:32:01 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.15842	80.12641	32	Mon May 10 15:37:23 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0672717	80.1764617	32	Mon May 10 15:38:26 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0672717	80.1764617	32	Mon May 10 15:38:58 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0633831	80.1755978	32	Mon May 10 15:42:02 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0633833	80.1755983	32	Mon May 10 15:45:58 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0633261	80.1755165	32	Mon May 10 15:46:25 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0632883	80.1754533	32	Mon May 10 15:47:38 GMT+05:30 2021			
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13.0632883	80.1754533	32	Mon May 10 16:08:56 GMT+05:30 2021			

Conclusion:

The Admin App and the Client App were developed and the screenshots of the results have been updated.

References:

SmartBridge Materials

VMware Tanzu