

# OPSC Planning and Design



## TABLE OF CONTENTS

Introduction .....	3
Breif overview .....	4
Detailed Llst of Requirements .....	5
UI Mock-Up.....	7
Data.....	17
Project PLan.....	18
Conclusion .....	20
Group Information .....	21



# NESTQUEST

## INTRODUCTION

Welcome to NestQuest, where your avian adventure takes flight! Embark on a unique journey to connect with nature, experience the vibrant world of birds, and become a part of an active and supportive birding community. With NestQuest, every chirp, every flutter, and every sighting becomes a story waiting to be shared.

## BREIF OVERVIEW

NestQuest is a specialized Android app catering to bird enthusiasts, designed to facilitate seamless avian observation experiences. Users can register and log in, customize settings like measurement units and travel distance, and utilize a map component with nearby birding hotspots fetched via the eBird API 2.0. The app visualizes hotspots based on user preferences and tracks the user's position. It calculates optimal routes to selected hotspots, displaying them on the map. Bird observations can be recorded at the user's current location and displayed on the map, while all data including registration info, settings, and observations are securely stored in online hosted services. NestQuest design ensures a seamless integration of technology and birding interests, enhancing exploration and observation for enthusiasts. NestQuest goes beyond basic functionality by offering a range of enhancements. Some innovative features will be showcased in the app such as: Push notifications keep users engaged and informed about new sightings, updates, and community interactions, driving consistent app usage. Integration of weather forecasts empowers users to plan birdwatching effectively, considering both species behavior and environmental conditions. Offline access ensures usability in areas with poor connectivity, providing essential content like field guides even without an internet connection. Moreover, NestQuest enriches users' understanding with educational resources such as bird calls and conservation information, fostering a deeper connection and appreciation for the avian world.


## DETAILED LIST OF REQUIREMENTS

Requirement	Description
The user must be able to log in to the app using a username and password	This means that we have to create a login and sign-in page for the user to be able to meet this requirement as well as store the user data.
The user must be able to change their settings.	This means that the app needs to be able to stored the settings of the user and associate it with their account and load those settings when the app is opened or run
The user must be able to view nearby birding hotspots on a map	This means that the app should be able to get the location of the device and use it to find nearby hotspots
The app must display hotspots filtered according to the preferred maximum distance chosen by the user.	This means that the app must filter the list of nearby hotspots with the user's settings
The user must be able to select a hotspot on the map to get directions to the hotspot	This means the user should be able to select a hotspot and the app should compare the user's current location and the location of the hotspot and then using the 'map' find a route and provide it to the user
The app must allow the user to save a bird observation at their currently location.	This means the user should be able to create a new sighting record and upload that to a database and have it linked to their account so that they have access to it
The app must allow the user to view all their bird observations.	This means the app should be able to retrieve all sighting records made by the user and display it in the app
The app must display bird observations on the map.	This means that the app must use the location field of the user's sights and use that field to place the bird sighting on the map view respectively



<b>The user data but be stored on an online, hosted database</b>	This means that the database is to be hosted online to allow for the app to be used publicly
<b>The app should be able to inform the user of current weather conditions.</b>	This means the app should use the device's current location and use that to get the weather conditions in the user's area
<b>The app should be able to provide additional information about birds.</b>	This means the app should be able to find more information about the bird the user has recorded in their sighting and provide it to the user.
<b>The app should make use of push notifications.</b>	This means that the app should be able to notify the user if they are near a hotspot, provided the appropriate permissions are granted

## UI MOCK-UP

Screen	Description
<b>Splash Screen</b> 	This is the first screen the user will see and from here they will be taken to the authentications screen that will have a tab for the choose action. This screen showcases the app logo and name.

## Register

Register

Login

### Let's get started!

Login to access your bookmarks  
and personal preferences.



☐ Keep me logged in

REGISTER

This is the Register tab of the authentication screen. It is here that the user will be able to register with the app by providing a username and a password which will be used to create an account for the user in the apps database.



## Login

Register

Login

Using hello@ui-kit.co to sign up.

Name

Joe Jiff

Password

\*\*\*\*\*

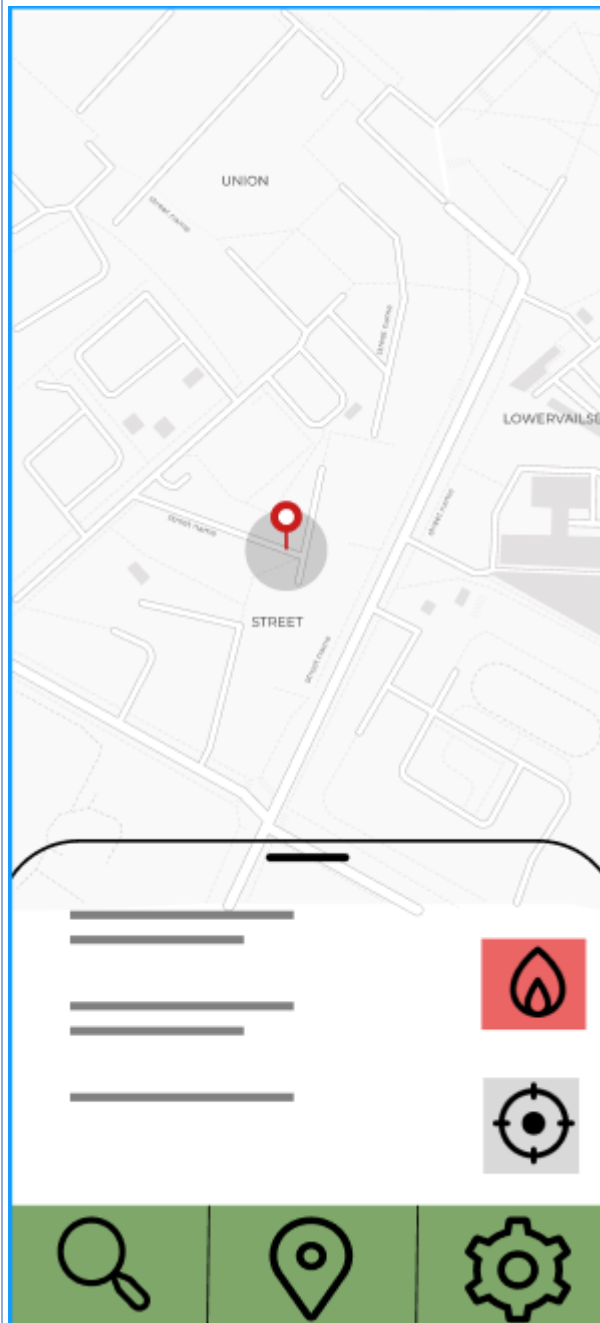


Login

No account yet? [Register here.](#)

This is the tab in which the user will be able to login by providing their credentials which will be checked with the database and if successful they will be authenticated into the database.

## Main Screen



This is the main screen the user will see when they are logged into the app. The screen shows their current location on map view. This app will be using a bottom navigation bar to navigation to other screens(fragments). The gear will navigate to the settings screen, the location icon will navigate to this screen, the search icon will navigate to the bird sighting screen ( see navigation diagram for more context) This fire icon will bring up a modal of hotspots ad the crosshair icon will reset the map view to the users current location.

## Settings

### User Options

Max distance

Measurement System

Radio option here...



Input option here


Save





This is the settings screen in which the user will be able to enter and save their preferences (options subject to change)


## Bird Sightings

# Bird Sightings

- **Bird**  
Information

distance
- 
- **Bird**  
information

distance
- 
- **Bird**  
information

distance
- 
- **Bird**  
Information

8m ago
- 



This is the bird sightings screen where the user will be able to see all the sightings they have record for themselves and of they press on the '+' button they will be taken to the new sighting screen

## New Sighting

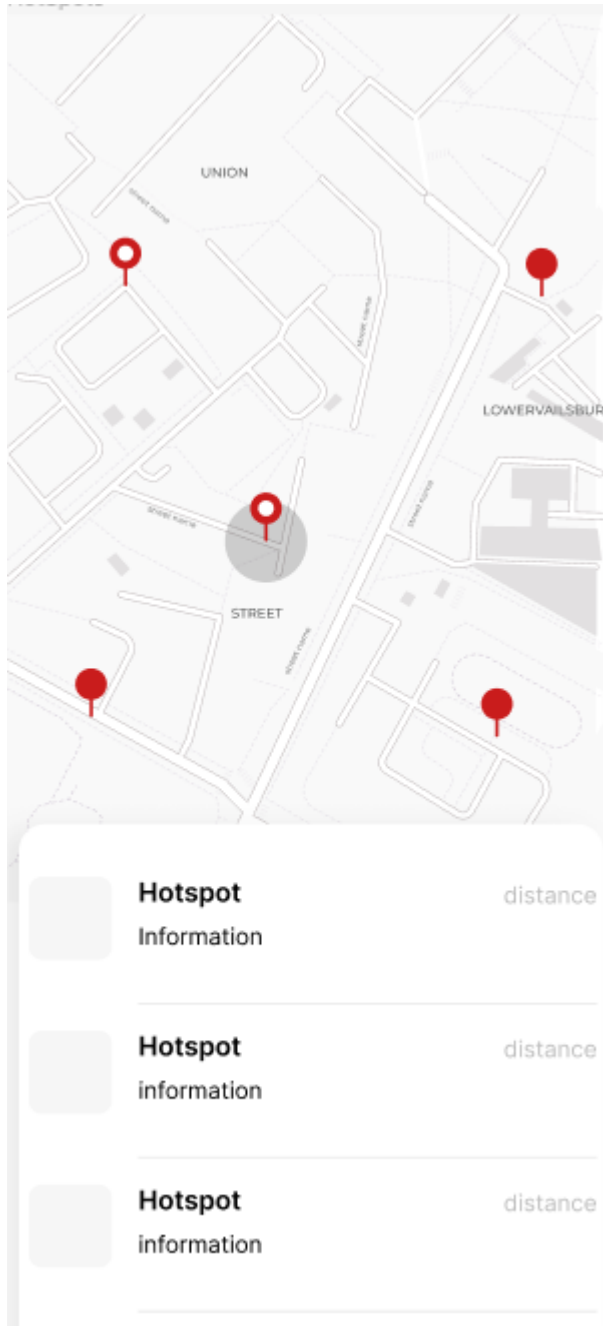
### New Sighting



Save

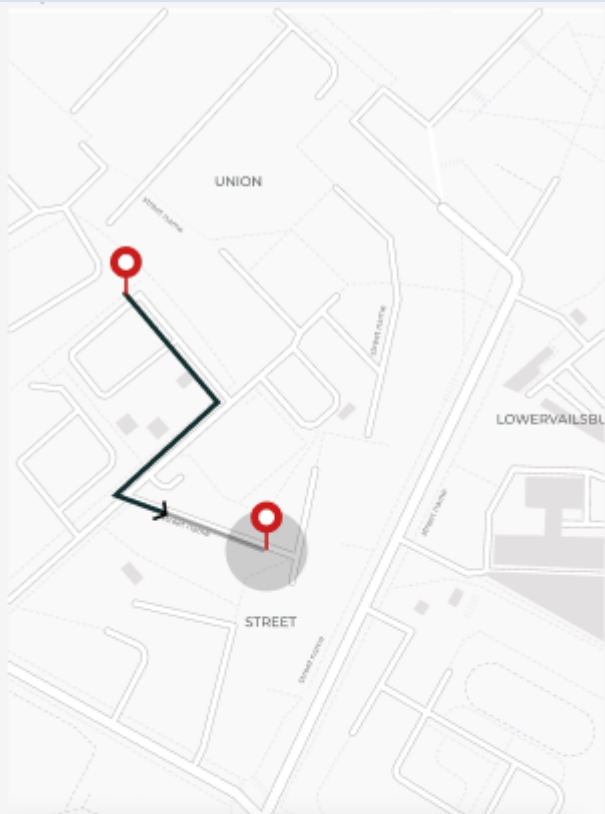
This is the screen in which the user will be able to log a new sighting for their account. Some base information that they will be able to add is: Name, Location, Optional Picture, Description(subject to change). Then they can click on the save button to save their sighting to their account and thereby in the database


## Hotspots




This is the screen in which the user will be able to see a modal list of hotspots around their current location. From here they will be able to

This is the screen the user will see that will show the route to the hotspot they have selected .



 Directions

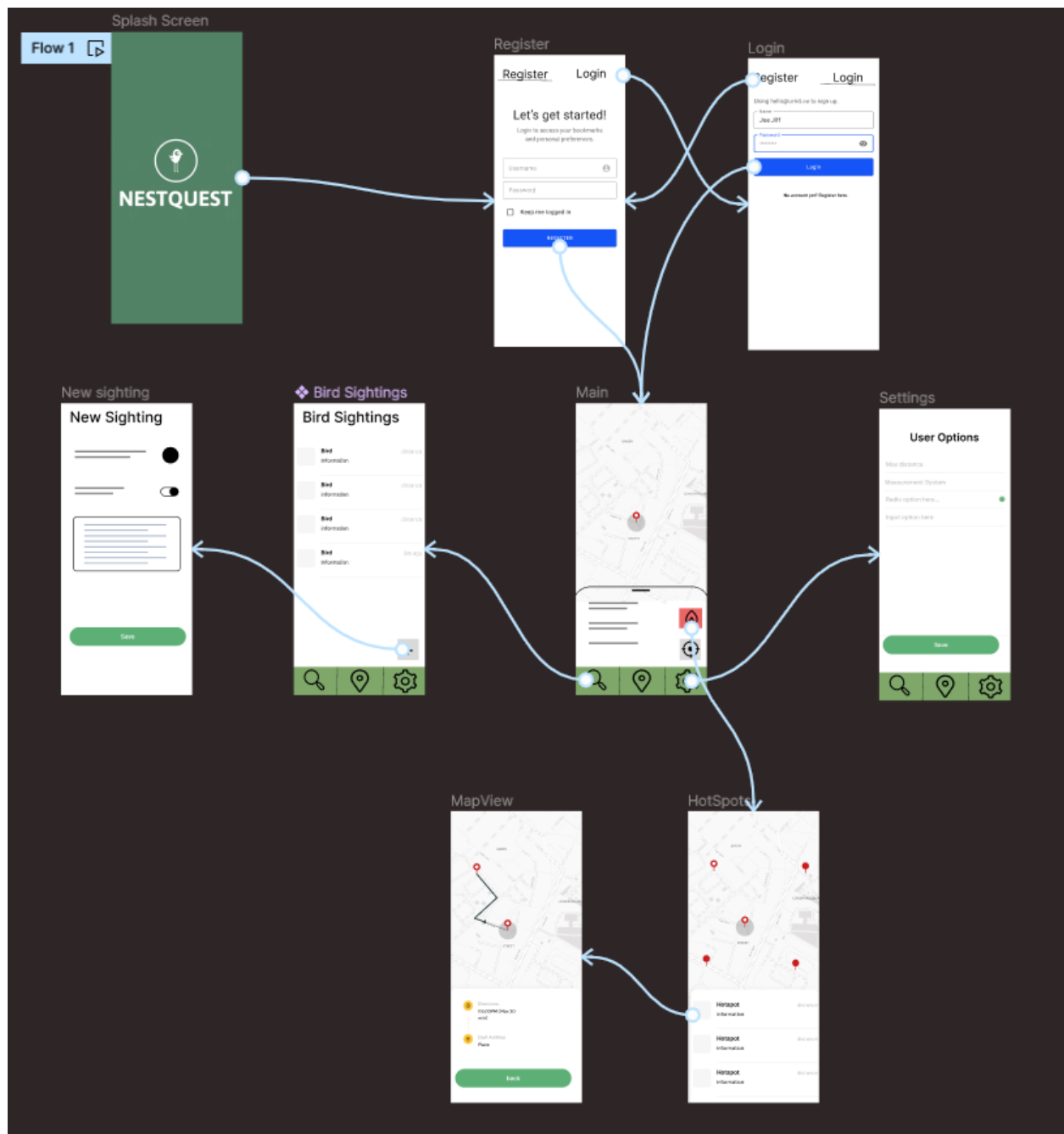
03:00PM (Max 20 min)

 Start Address

Place

back

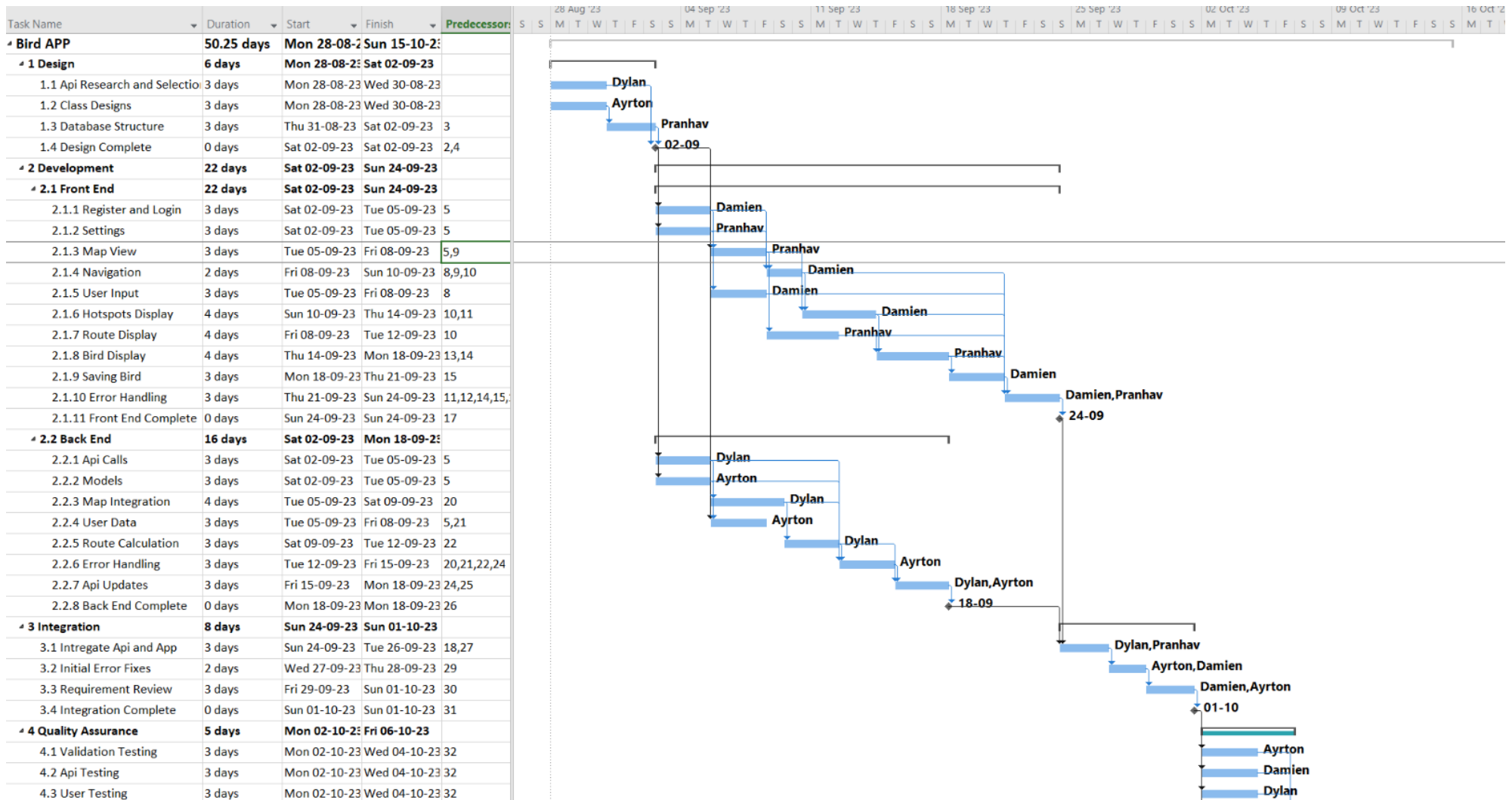




## DATA

Data	Description
User	UserId:String Username:String Email:String Password:String Name:String MeasurementSystem:String MaximumDistance:Double Darkmode:Boolean UserID:String Location:String Array
Bird	BirdID:String BirdName:String
Bird Sighting	SightingID:String BirdID:String Location:String Array UserID:String

# PROJECT PLAN







## CONCLUSION

In conclusion, NestQuest will be a major project that will span over 55 days in its entirety. However, it is this planning that is exhibited in the document which will expedite the project as the user requirements, user interface and project plan have already been completed thereby decreasing the time needed for planning and allowing the team to start immediately by following the task list and Gantt chart.

## GROUP INFORMATION

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