

Study of Google Firebase Services - a Smart Road to Backend

Neel N. Patel
B. Tech
Information Technology
BVM Engineering College, V. V. Nagar

Zankhana Shah,
Associate Professor
Information Technology Department
BVM Engineering College, V. V. Nagar

Abstract:- The purpose of this paper is to introduce the Firebase services which is backed by the Google itself. Firebase is a Backend Service provider which provides various services like Authentication, Database, Storage etc. This article will show you how to use firebase services or API for providing backend in the Web Application. This article will show you how to use various service of firebase like Authentication, Database Storage and Hosting provided by firebase using Angular JS.

Keywords:- component; formatting; style; styling.

I. INTRODUCTION

Authentication is the process in which the credentials of the user is validated. If the email and the password of the user is valid and the authentication of the user is valid and is allowed to enter the application. If the credentials are invalid then the authentication fails. Such type of authentication is provided by firebase. Database is collection of well organized data. Database stores the information in some specific way such that it is readable by human. We can create databases in SQ Lite, My SQL, Mongo DB. Firebase Database is a cloud based Data Storage system which stores the data in the cloud which can be shared from any places. The data stored in Firebase Database is accessible from any place irrespective of the Device. Data stored in Firebase Database is in JSON from. JSON is abbreviated as JavaScript Object Notation. It provides API to fetch and store data form cloud using minimal lines of code. Hosting is also one of the main aspects of the Firebase. As we know that a website has to be hosted on some platform. Firebase provides the platform to host website. It uses yourwebsitename.firebaseio.com domain for free. Further, you can link you own domain with your firebase app domain.

II. FEATURES

A. Authentication

Firebase provides authentication features allow to register as well authenticate the user. It also provides facilities like reset email, reset password, email verification etc. It also provides authentication using Facebook, Github, Google, Twitter as well as Phone number.

B. Database

Real time Database is a cloud-based database and does not need SQL-based queries to store and fetch data. Database is highly efficient and fast. It also has capability of storing data when the device is not active on internet. At that time is stores the data in the cache memory of the system.

C. Analytics

Analytics is used to monitor your application in which the firebase services are used as a backend. It provides dashboard in which you can analyze who is active on the application also other analytics.

D. Hosting

Firebase also provide facility to host your website on its platform without any cost but it uses firebaseapp.com as an extension. You can also map your own domain by linking the firebase app domain to your domain.

III. IMPLEMENTATION

A. Adding firebase SDK to your project

To use Firebase services as backend you need to initialize your web application with the firebase SDK. To initialize firebase to your app follow the following steps.

- Go to console.firebase.google.com and click “Add new project”. This will pop up and will ask to add name and the country name.
- This will take you to dashboard of project. Click on “Add firebase to your web app” to initialize the Firebase SDK in your app.
- This will give pop up window having some code snippet in it as following picture. Copy this code snippet and paste it in you web app between the head tags. This completes the firebase initialization in the project. Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar:

B. Authentication

After adding firebase initialization in project we can implement the authentication modules as follows:

- First create an object of the Firebase Auth().

- To register account using in built method. Also firebase. `auth().currentUser` is used retrieve the current user. The method `sendEmailVerification()` is used to send the verification mail to the registered user.
- To implement the sign in module using `signInWithEmailAndPassword()` method using users credentials.
- To reset password using “`sendPasswordResetEmail(username)`” method.

C. Real time Database

Firebase real-time database feature is very easy to use. Once you have added firebase and database dependency to your app, you can add data by following code.

- To add data to the database “`firebase.database().ref().child()`”. Here `child()` automatically adds the unique key Id to the database.
- Here, `firebase.database().ref()` is a reference pointing to the database stored in the cloud. Further the `.child()` method is used to point the child object within the JSON Object as shown in the figure.
- To fetch data from database use “`firebase.database().ref().child()`”

IV. CONCLUSION

Thus here we can conclude that the Firebase is an efficient tool for providing successful backend the system or software. It provides all the features which are required by the developer to implement in the software or a web application.

REFERENCES

- [1] Firebase Official Documentation (<https://firebase.google.com/docs/>)
- [2] Introduction to Firebase (<https://codepen.io/adamaoc/post/introduction-to-firebase>)
- [3] AngularFire (<https://www.firebase.com/docs/web/libraries/angular/api.html>)
- [4] Dzone Article (<https://dzone.com/articles/firebase-real-time-database-using-angularjs>)
- [5] AngularFire bindings for Firebase - Github (<https://github.com/firebase/angularfire>)
- [6] Study of Google Firebase API for Android - IJIRCCE (https://www.ijircce.com/upload/2016/september/133_Study.pdf)
- [7] Firebase Cloud Messaging (android) - IJRSET (https://www.ijrset.com/upload/2017/cotii/3_CS_COTII_2017_Firebase_cloud.pdf)