

MINGGU 11

Firestore - Firestore & Storage

DESKRIPSI TEMA

- Menyimpan data di Firestore
- Melakukan upload file ke Firebase Storage
- Melakukan Authentikasi User dengan Firebase

CAPAIAN PEMBELAJARAN MINGGUAN (SUB-CAPAIAN PEMBELAJARAN)

Mahasiswa mampu **menghubungkan** aplikasi Ionic dengan basis data online yang diakses melalui API web service

Mahasiswa mampu **menghubungkan** aplikasi Ionic dengan Firebase

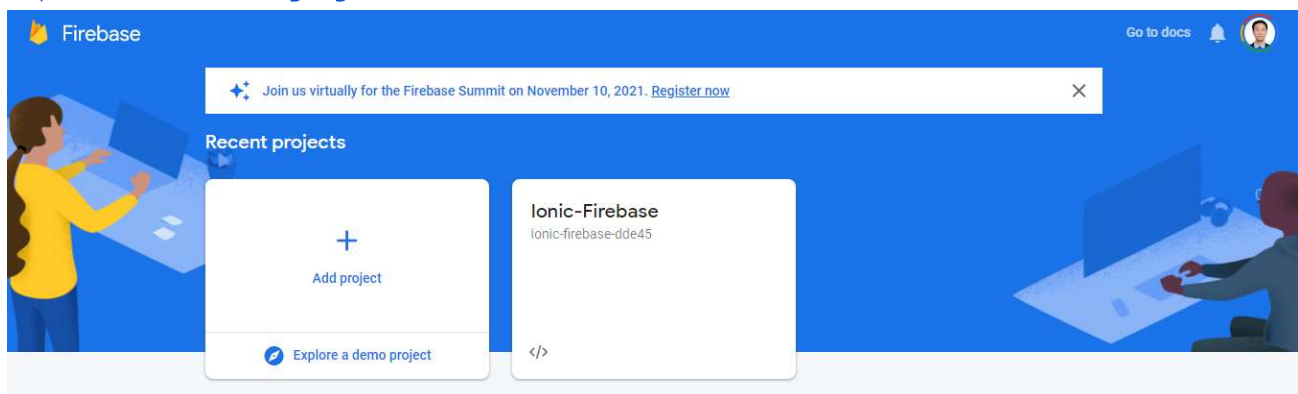
PERALATAN YANG DIGUNAKAN

Web Storm atau VS Code

LANGKAH-LANGKAH PRAKTIKUM

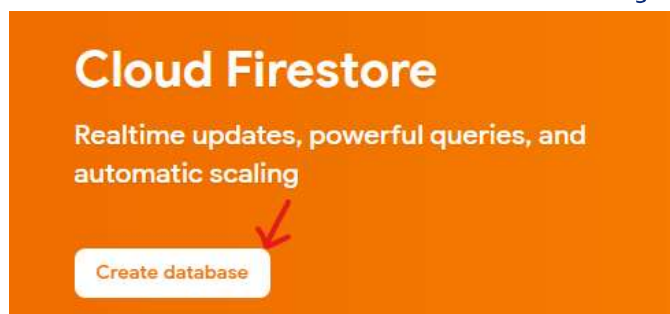
Buat project baru atau gunakan project yang sudah ada sebelumnya melalui Console Firebase

<https://console.firebase.google.com/>



Add data to Firestore

1. Pilih menu Firestore Database dan buat database dengan meng-klik tombol "Create database"

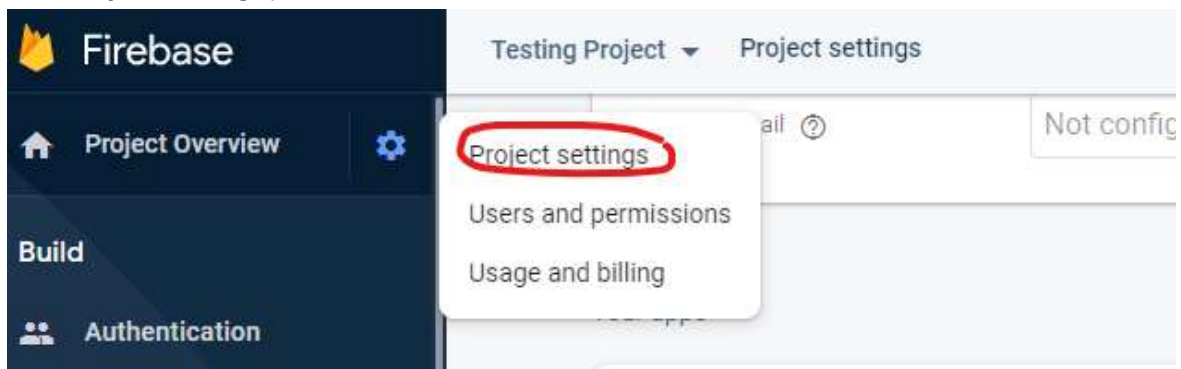


- Pilih "Test Mode" sebagai security rules untuk keperluan praktikum. Anda dapat mempelajari bagaimana melakukan setup security rules melalui dokumentasi Firebase:
<https://firebase.google.com/docs/firestore/security/get-started?authuser=0>

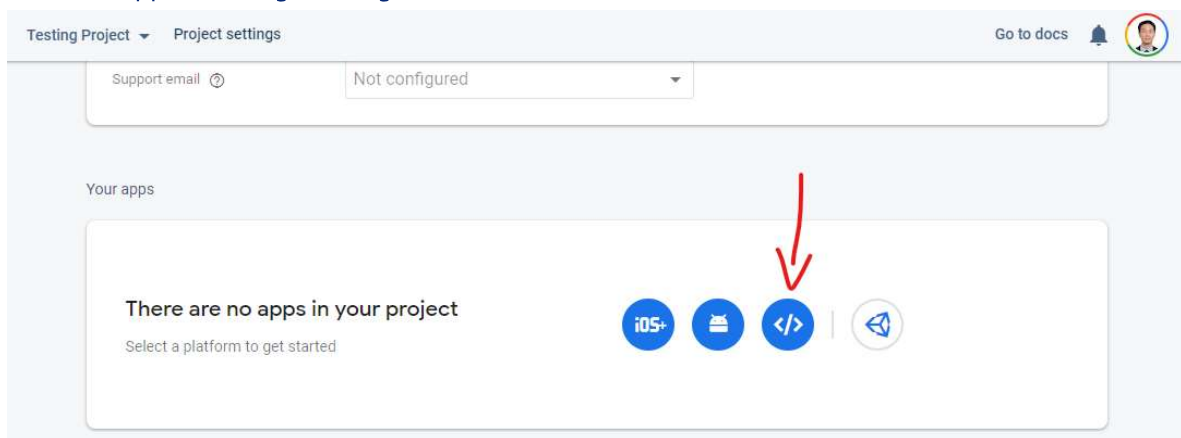
- ☐ Start in **production mode**
 Your data is private by default. Client read/write access will only be granted as specified by your security rules.
- ☒ Start in **test mode**
 Your data is open by default to enable quick setup. However, you must update your security rules within 30 days to enable long-term client read/write access.

```
rules_version = '2';
service cloud.firestore {
  match /databases/{database}/documents {
    match /{document=**} {
      allow read, write: if
        request.time < timestamp.date(2021, 12, 5);
    }
  }
}
```

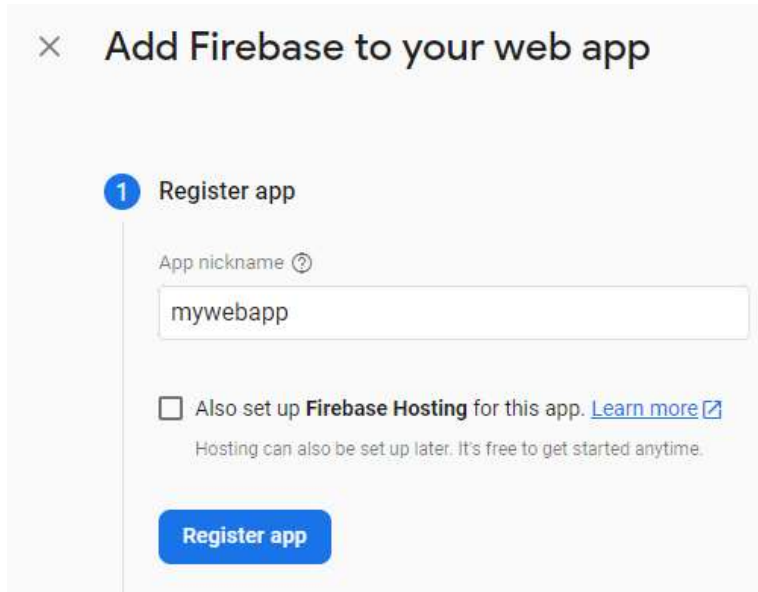
- Pilih Lokasi Cloud Firestore dan klik tombol "Enable"
- Buat sebuah project Ionic-React baru, kemudian buat file /src/firebaseConfig.ts
- Buka Project Settings pada Firebase Console



- Buat web app baru dengan mengklik tombol "</>"



7. Tuliskan app nickname dan klik Register app



8. Jalankan command npm install firebase pada project Ionic, kemudian salin kode firebaseConfig pada file firebaseConfig.ts yang sebelumnya telah dibuat.

```
$ npm install firebase
```

Then, initialize Firebase and begin using the SDKs for the products you'd like to use.

```
// Import the functions you need from the SDKs you need
import { initializeApp } from "firebase/app";
// TODO: Add SDKs for Firebase products that you want to use
// https://firebase.google.com/docs/web/setup#available-libraries

// Your web app's Firebase configuration
const firebaseConfig = {
  apiKey: "AIzaSyDl4visq_5GE6e4xzIY-PoRUajWHDTK0J0",
  authDomain: "testing-project-524f9.firebaseio.com",
  projectId: "testing-project-524f9",
  storageBucket: "testing-project-524f9.appspot.com",
  messagingSenderId: "1087354460436",
  appId: "1:1087354460436:web:8c48e0a9c2c5b07a18ca01"
};

// Initialize Firebase
const app = initializeApp(firebaseConfig);
```

9. Tambahkan code berikut pada Home.tsx

```
import { collection, addDoc } from "firebase/firestore";
import { getFirestore } from "firebase/firestore";

const db = getFirestore();
useEffect(effect: () => {
  const addData = async() => {
    try {
      const docRef = await addDoc(collection(db, "users"), {
        first: "Ada",
        last: "Lovelace",
        born: 1815
      });
      console.log("Document written with ID: ", docRef.id);
    } catch (e) {
      console.error("Error adding document: ", e);
    }
  }

  addData();
})
```

10. Coba jalankan di browser, lihat jendela console dan perika apakah data berhasil masuk ke Firestore?

Document written with ID: Nf05My7sc0qTrRLMr873

ionic-firebase-dde45	users	Nf05My7sc0qTrRLMr873
+ Start collection students users >	+ Add document Nf05My7sc0qTrRLMr873 > QT18WhcHbWXhm7GvxbNw fMN7qu5HKwoQ4Y53QRdW qVKJdDXro6GoMxDh9Amp	+ Start collection + Add field born: 1815 first: "Ada" last: "Lovelace"

Upload File to Firebase Storage

1. Tambahkan code berikut pada Home.tsx

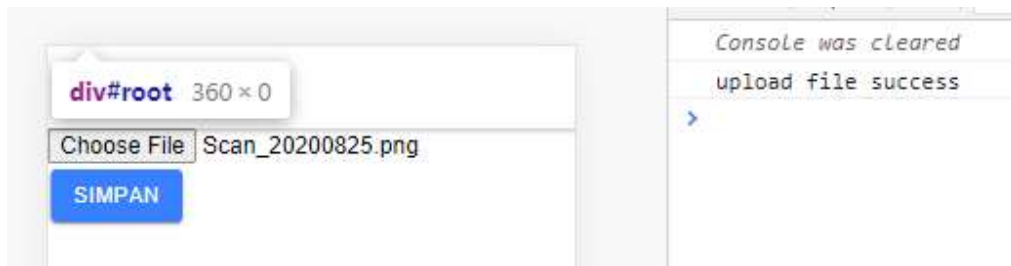
```
<input type="file" onChange={fileChangeHandler} />
<IonButton onClick={insertHandler}>Simpan</IonButton>
```

```
const [selectedFile, setSelectedFile] = useState<File>();
const [fileName, setFileName] = useState( initialState: '' );
const storage = getStorage();

const fileChangeHandler = (event: React.ChangeEvent<HTMLInputElement>) => {
  setSelectedFile(event.target!.files![0]);
  setFileName(event.target!.files![0].name);
};

const insertHandler = async() => {
  const storageRef = ref(storage, fileName);
  uploadBytes(storageRef, selectedFile as Blob).then((snapshot : UploadResult ) => {
    console.log('upload file success');
  })
};
```

2. Coba lakukan upload file



3. Lihat melalui Firebase console, apakah file berhasil di upload

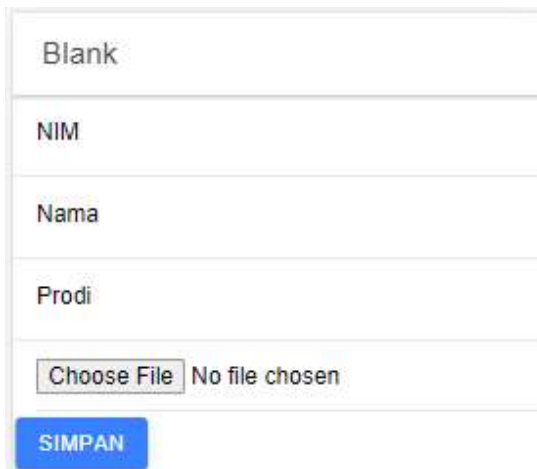
gs://ionic-firebase-dde45.appspot.com					Upload file		
<input type="checkbox"/>	Name	Size	Type	Last modified			
<input type="checkbox"/>	Logo UMN.png	99.84 KB	image/png	Nov 4, 2021			
<input type="checkbox"/>	Scan_20200825.png	2.4 MB	image/png	Nov 5, 2021			
<input type="checkbox"/>	johnwick.jpg	195.95 KB	image/jpeg	Nov 4, 2021			
<input type="checkbox"/>	man.jpg	54.89 KB	image/jpeg	Nov 4, 2021			
<input type="checkbox"/>	materai.jpg	76.72 KB	image/jpeg	Nov 4, 2021			
<input type="checkbox"/>	oke.jpg	25.81 KB	image/jpeg	Nov 4, 2021			
<input type="checkbox"/>	thor.jpg	1.78 MB	image/jpeg	Nov 4, 2021			

Fom Tambah Data Mahasiswa

1. Tambahkan code berikut pada Home.tsx

```
<IonItem>
  <IonLabel position="floating">NIM</IonLabel>
  <IonInput ref={nim}></IonInput>
</IonItem>
<IonItem>
  <IonLabel position="floating">Nama</IonLabel>
  <IonInput ref={nama}></IonInput>
</IonItem>
<IonItem>
  <IonLabel position="floating">Prodi</IonLabel>
  <IonInput ref={prodi}></IonInput>
</IonItem>
<IonItem>
  <input type="file" onChange={fileChangeHandler} />
</IonItem>
<IonButton onClick={insertHandler}>Simpan</IonButton>
```

2. Berikut adalah tampilan halaman Home



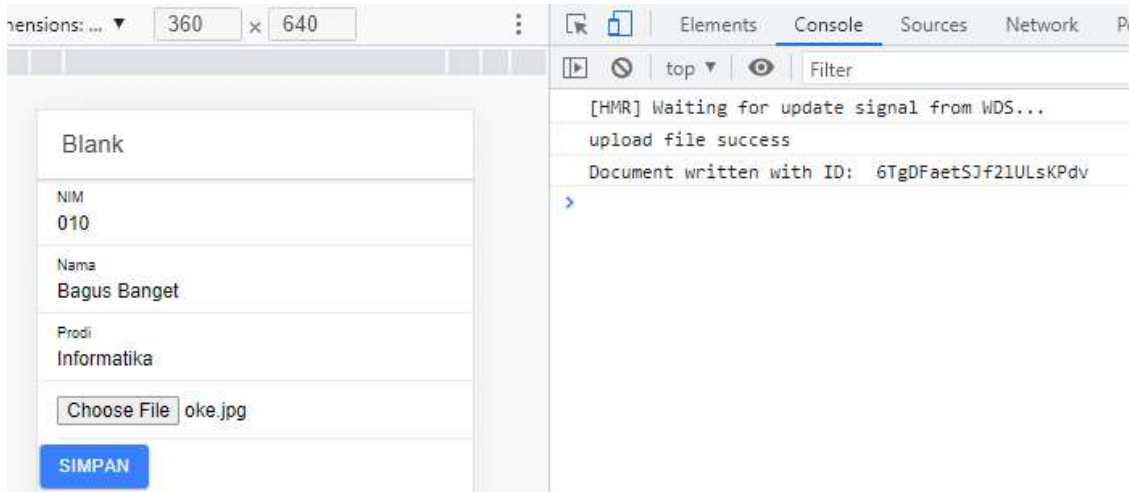
3. Tambahkan code berikut pada Home.tsx

```
const nim = useRef<HTMLIonInputElement>( initialValue: null);
const nama = useRef<HTMLIonInputElement>( initialValue: null);
const prodi = useRef<HTMLIonInputElement>( initialValue: null);
const [selectedFile, setSelectedFile] = useState<File>();
const [fileName, setFileName] = useState( initialState: '' );
const storage = getStorage();
const db = getFirestore();
```

```
const addData = async(url: string) => {
  try {
    const docRef = await addDoc(collection(db, path: "students"), data: {
      nim: nim.current?.value,
      nama: nama.current?.value,
      prodi: prodi.current?.value,
      foto: fileName,
      fotoUrl: url
    });
    console.log("Document written with ID: ", docRef.id);
  } catch (e) {
    console.error("Error adding document: ", e);
  }
}
```

```
const insertHandler = async() => {
  const storageRef = ref(storage, fileName);
  uploadBytes(storageRef, selectedFile as Blob).then((snapshot : UploadResult) => {
    console.log('upload file success');
    getDownloadURL(ref(storage, fileName)).then((url : string) => {
      addData(url);
    })
  })
}
```

4. Coba tambahkan data student, lengkap dengan foto yang harus diupload.



The screenshot shows a web application interface on the left and a browser's developer console on the right. The form has fields for NIM (010), Nama (Bagus Banget), Prodi (Informatika), and a file upload section with a 'Choose File' button and the filename 'oke.jpg'. A blue 'SIMPAN' button is at the bottom. The console on the right shows three log messages: '[HMR] Waiting for update signal from WDS...', 'upload file success', and 'Document written with ID: 6TgDFaetSJf21ULsKPdv'.

5. Cek console Firebase, apakah data berhasil ditambahkan?

+ Add document	+ Start collection
6TgDFaetSJf21ULsKPdv >	+ Add field
Irq0FmT38JUt144qCTfB	foto: "oke.jpg"
JgIwcjleoFLUWxVzDZg6	fotoUrl: "https://firebasestorage.googleapis.com/v0/b/ionic-firebase-dde45.appspot.com/o/oke.jpg?alt=media&token=1dcc60ee-488c-453c-bdaa-26a0a66d03cd"
NvrIZysT0vCfRiQKYBre	nama: "Bagus Banget"
XJKUfklbrT8PYALd4qUR	nim: "010"
	prodi: "Informatika"

Menampilkan Data Mahasiswa

1. Ubah code pada Home.tsx menjadi seperti berikut

```
const db = getFirestore();
const [students, setStudents] = useState<Array<any>> ( initialState: [] );
```






```
useEffect( effect: ()=>{
  async function getData() {
    const querySnapshot = await getDocs(collection(db, path: "students"));
    console.log('querySnapshot:', querySnapshot);
    setStudents(querySnapshot.docs.map((doc : QueryDocumentSnapshot<DocumentData> ) => ({...doc.data(), id:doc.id})));

    querySnapshot.forEach( callback: (doc : QueryDocumentSnapshot<DocumentData> ) => {
      console.log(' ${doc.id} => ${doc.data()} ');
      console.log('doc:', doc);
    });
  }

  getData();
}, deps: []);
```

```
<IonList>
  {students.map(student => (
    <IonItem key={student.id}>
      <IonAvatar slot="start">
        <img src={student.fotoUrl} />
      </IonAvatar>
      <IonLabel>
        {student.nim}<br />
        {student.nama}<br />
        {student.prodi}
      </IonLabel>
    </IonItem>
  ) )}
</IonList>
```


2. Lihat hasilnya di browser, apakah berhasil menampilkan data students?

Blank	
	010 Bagus Banget Informatika
	001 John Thor IF
	002 John Wick IF
	003 Alex Wawo IF
	004 Simple Man IF

TUGAS

Modifikasi project Memories dari pertemuan sebelumnya sehingga dapat menyimpan memory menggunakan Firebase (Firestore dan Storage). Atau, Anda juga bisa mengganti Firestore menjadi Realtime database.