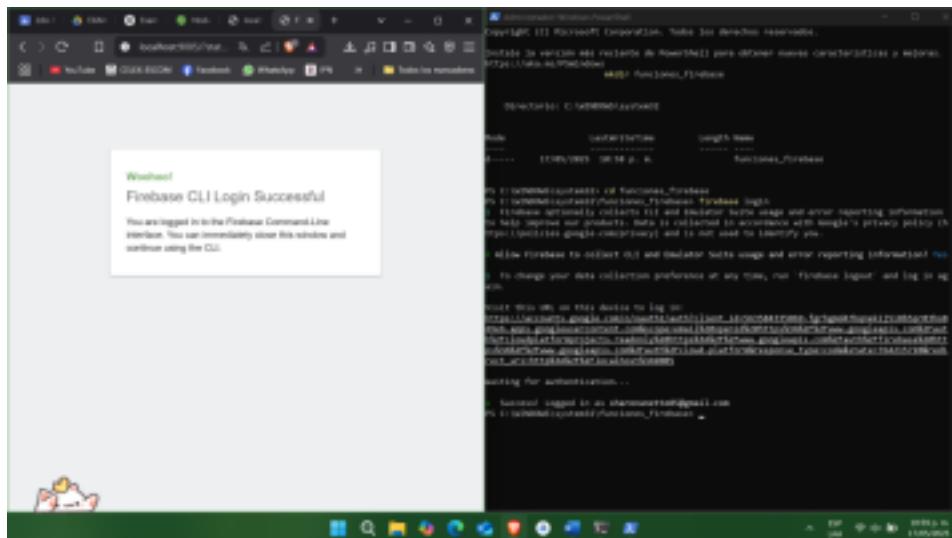


INSTITUTO POLITÉCNICO NACIONAL
ESCUELA SUPERIOR DE CÓMPUTO
NAVARRETE BECERRIL SHARON ANETTE
7CV3
EXAMEN 2
“AUTENTICACIÓN MEDIANTE FIREBASE Y ENVÍO DE NOTIFICACIONES PUSH”

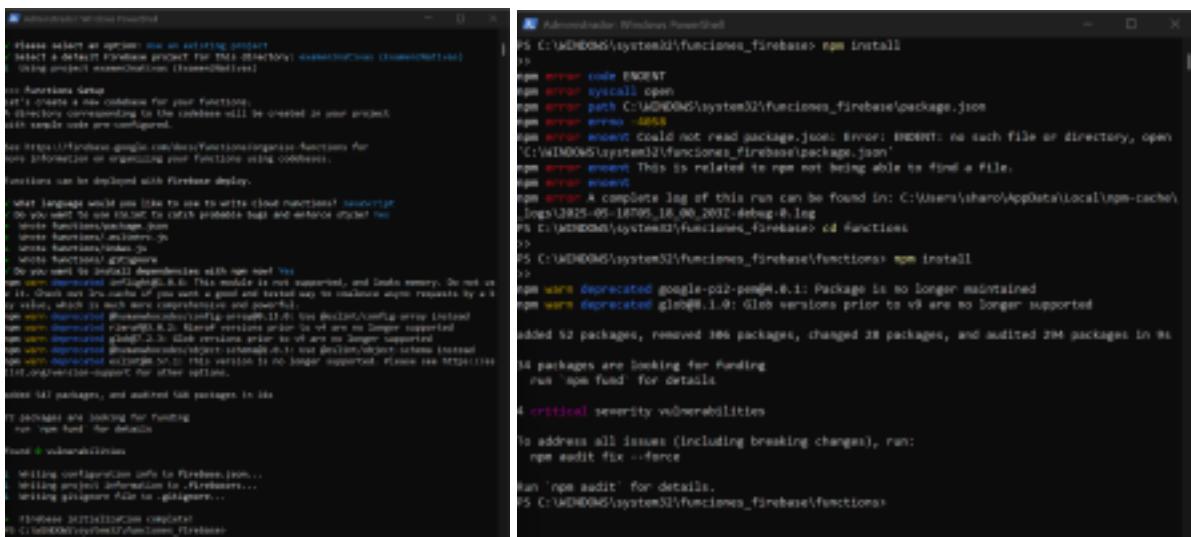
Link del repositorio en GitHub: <https://github.com/SharonAnette/Examen2Nativas>

Desarrollo

Inicio de sesión en Firebase CLI: Captura del inicio de sesión exitoso en Firebase CLI desde la terminal, confirmando la autenticación del usuario con Firebase.



Inicialización del proyecto con Firebase: Capturas de pantalla donde se muestra la inicialización del proyecto "examen2nativas" con Firebase Functions, en lenguaje JavaScript.



Estructura generada por Firebase Functions: Capturas de la vista de los archivos creados automáticamente al ejecutar firebase init functions, incluyendo index.js, package.json y carpetas asociadas.

```

Administrator: ~\Desktop\Proyectos\Examen
christian: university vulnerabilities

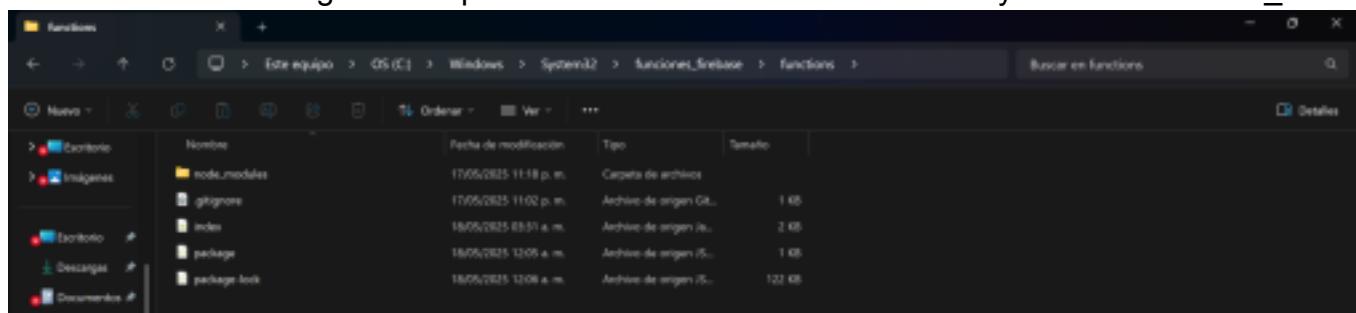
No address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
C:\Windows\system32\funciones_firebase\functions> npx firebase deploy --only functions:sendNotification
-- Deploying to 'examenNotificaciones'...

Deploying functions...
functions: preparing codebase default for deployment
functions: ensuring required API cloudfunctions.googleapis.com is enabled...
functions: ensuring required API cloudbuild.googleapis.com is enabled...
artifactregistry: ensuring required resource API artifactregistry.googleapis.com is enabled...
functions: ensuring required API cloudfunctions.googleapis.com is enabled...
artifactregistry: required API artifactregistry.googleapis.com is enabled
functions: required API cloudbuild.googleapis.com is enabled
functions: required API artifactregistry.googleapis.com is enabled
functions: package.json indicates an outdated version of Firebase Functions. Please upgrade using npm install --save firebase-functions@latest in your Functions directory.
functions: Please note that there will be breaking changes when you upgrade.
functions: loading and analyzing source code for codebase default to determine what to deploy
functions: You are using a version of firebase-functions 50K (4.9.0) that does not have support for the newest Firebase Extensions features. Please update firebase-functions 50K to 11.0.0 to use them correctly
functions: preparing functions directory for uploading...
functions: packaged C:\Windows\system32\funciones_firebase\functions (16.61 KB) for upload
functions: Function folder uploaded successfully
functions: creating build 18 (last 1m) function sendNotification(us-central1)...
functions: function sendNotification(us-central1) successful create operation.
functions: This function will be automatically updated if you make changes to it. This may result in small temporary file size fluctuations over time.
How many days do you want to keep container images before they're deleted? (1)

```

Ruta de la estructura generada por Firebase Functions C:\Windows\System32\funciones_firebase



Archivo index.js de funciones en Firebase: Código de la función `sendNotification` implementada en `functions/index.js`, que envía una notificación y guarda el mensaje en Firestore.

```

index.js
const functions = require('firebase-functions');
const admin = require('firebase-admin');
admin.initializeApp();

exports.sendNotification = functions.https.onCall((data, context) => {
  const token = data.token;
  const title = data.title;
  const body = data.body;
  const topic = data.topic;

  if (!token || !title || !body) {
    throw new functions.https.HttpsError('invalid-argument', 'Todos los datos en la solicitud son obligatorios');
  }

  const message = {
    notification: {
      title,
      body,
      iosNotification: {
        badge: 1
      }
    },
    token
  };

  try {
    // Crear notificación
    const messageRef = admin.messaging().send(message);

    // Guardar en Firestore
    admin.firestore().collection('notificaciones').add({
      title,
      body,
      token,
      timestamp: admin.firestore.FieldValue.serverTimestamp()
    });
  } catch (error) {
    return { error: error.message };
  }
});

package.json
{
  "name": "functions",
  "version": "1.0.0",
  "private": true,
  "scripts": {
    "lint": "eslint .",
    "start": "node .",
    "deploy": "firebase deploy"
  },
  "dependencies": {
    "firebase-admin": "^11.0.0",
    "firebase-functions": "4.9.0"
  },
  "devDependencies": {
    "eslint": "7.31.0"
  }
}

```

Base de datos Firestore: colección users: Visualización de la colección `users` en Firestore, donde se almacenan los datos de los usuarios autenticados, incluyendo su rol y token FCM.

The screenshot displays two windows from the Google Cloud Platform (GCP) interface. The top window is titled 'Authentication' and shows a list of users under the 'Users' section. One user, 'user1@example.com', is selected, revealing detailed information: 'Email': 'user1@example.com', 'Provider ID': 'password', 'Status': 'Enabled', 'Last sign-in': '18 may 2023', and 'ID token': '3e9f088f...'. The bottom window is also titled 'Authentication' and shows a list of notifications under the 'Notifications' section. One notification, with the key '513d6-NCv8juNQ00000', is selected, displaying its details: 'Body': 'Prueba!', 'Timestamp': '18 de mayo de 2023, 12:24:02 p.m. UTC', and 'Label': 'Test'. Both windows include a sidebar with navigation links like 'Dashboard', 'Cloud Functions', 'Cloud Storage', 'Cloud Pub/Sub', 'Cloud Run', 'Cloud Build', 'Cloud Dataflow', 'Cloud ML Engine', and 'Cloud Deployment Manager'.

Base de datos Firestore: colección notifications: Visualización de la colección notifications en Firestore, donde se registran las notificaciones enviadas a los usuarios con detalles como título, mensaje y destinatario.

This screenshot shows the Google Cloud Platform (GCP) interface for Firestore. It focuses on the 'notifications' collection, which contains several documents. One document, with the key '513d6-NCv8juNQ00000', is expanded to show its data: 'body' (value 'Prueba!'), 'label' (value 'Test'), and 'timestamp' (value '18 de mayo de 2023, 12:24:02 p.m. UTC'). The left sidebar lists other collections such as 'users' and 'notificaciones'. The top navigation bar includes links for 'Dashboard', 'Cloud Functions', 'Cloud Storage', 'Cloud Pub/Sub', 'Cloud Run', 'Cloud Build', 'Cloud Dataflow', 'Cloud ML Engine', and 'Cloud Deployment Manager'.

Finalmente, la explicación de la implementación de autenticación y la del sistema de notificaciones se encuentra detallada en el README.md ubicado en el repositorio en github.