Experiment 1: Cloud-based Attendance Management System (Easy Version)

AIM: To design a cloud-based attendance management system using GCP Firebase and Firestore.

Description: This experiment demonstrates a simple attendance management system where users can mark attendance through a web form. The attendance data is stored in Firestore, and the application is hosted using Firebase Hosting.

Prerequisites:

• Google Cloud Platform account
• Firebase project linked to GCP
• Enabled Firebase Hosting and Firestore Database
• Basic knowledge of HTML, JavaScript
• Installed Firebase CLI

Procedure:

• Create a new GCP project named 'attendance-demo'.
• Enable Firebase Hosting and Firestore Database for the project.
• Initialize Firebase in your local machine using Firebase CLI.
• Create an index.html file with the following code.
• Create a script.js file with Firestore integration.
• Deploy the app using Firebase Hosting.
• Test the system by submitting names and viewing them in Firestore.

index.html Code:

```html
<!DOCTYPE html>
<html>
<head>
  <title>Attendance System</title>
  <script src="https://www.gstatic.com/firebasejs/9.6.1/firebase-app.js"></script>
  <script src="https://www.gstatic.com/firebasejs/9.6.1/firebase-firestore.js"></script>
  <script src="script.js"></script>
</head>
<body>
  <h2>Attendance System</h2>
  <input type="text" id="name" placeholder="Enter your name">
  <button onclick="markAttendance()">Submit</button>
  <div id="status"></div>
</body>
</html>
```

script.js Code:

```javascript
const firebaseConfig = {
  apiKey: "YOUR_API_KEY",
  authDomain: "YOUR_PROJECT_ID.firebaseapp.com",
  projectId: "YOUR_PROJECT_ID",
  storageBucket: "YOUR_PROJECT_ID.appspot.com",
  messagingSenderId: "YOUR_SENDER_ID",
  appId: "YOUR_APP_ID"
};

const app = firebase.initializeApp(firebaseConfig);
const db = firebase.firestore();
function markAttendance() {
```

```
        const name = document.getElementById('name').value;
        db.collection("attendance").add({
          studentName: name,
          timestamp: new Date()
        }).then(() => {
          document.getElementById('status').innerText = "Attendance marked!";
        });
      }
```

Result: The attendance system successfully stores user entries in Firestore, providing a simple cloud-based attendance management solution.