

Software Engineer Expertise Test: Services

Mobile game “Fun7” includes many different features e.g. multiplayer, in-app purchases, cross promotion, ads or internal surveys. However not all of the features are available to all users all the time. For simplicity purposes you can assume that “Fun7” supports only 3 features: **multiplayer**, **customer-support** and **ads**.

In order for “Fun7” to know if it should enable or disable a particular feature, it will contact backend servers via a REST endpoint.

Check services API

1. It should expose endpoint that will return the status of the three services.
2. It should accept three query parameters:
 - a. **timezone**: timezone of the user
 - b. **userId**: string id of the user
 - c. **cc**: country code of the user
3. Response should contain information about enabled services in json format.
Sample json: `{"multiplayer": "enabled", "user-support": "disabled", "ads": "enabled"}`,

Each service should be enabled based on the following checks:

Multiplayer

Multiplayer is a feature that is available only for more skilled players so it should be enabled if user has used “Fun7” game more than 5 times (based on the number of API calls). Also our multiplayer server infrastructure is located in the US so it should be enabled only if the user comes from the US.

Customer Support

Customer support should be enabled only on work days between 9:00 - 15:00 Ljubljana time, because only then support personnel is available.

Ads

Ads in the game are served by the external partner so this service should be enabled only if our external partner supports user device. And to know it, we must call partner’s public API which is already provided and is secured by [basic access authentication](#) (via HTTP header).

The (external) API specs:

HTTP Method: *GET*

URL : <https://us-central1-o7tools.cloudfunctions.net/fun7-ad-partner>

Query params expected:

countryCode: The country code of the user

User name (for basic auth): fun7user

Password (for basic auth): fun7pass

HTTP Response body:

- *200 OK*
 - If ads are **enabled**:
Response body: `{"ads": "sure, why not!"}`
 - If ads are **disabled**:
Response body: `{"ads": "you shall not pass!"}`
- *400 BAD REQUEST - missing mandatory parameters*
- *401 UNAUTHORIZED - invalid credentials*
- *500 SERVER ERROR - server is temporarily not available*

Your assignment is to **design** and **implement** a backend application for “Fun7” mobile game and prepare **unit** and **integration tests** that will validate your solution.

Technical requirements:

1. Your solution should run on Java 11 and store data in a persistent storage of your choice (for bonus points it could also run on [Google App Engine](#) java environment and use [DataStore](#). You can also use other components available there (e.g. [Memcache](#) etc)).
2. Feel free to use any external libraries of your choice (e.g. REST framework or persistence library).
3. Please send us either a zip archive or a link to project on the github/bitbucket (preferred).
4. Make sure that your solution is production ready so apply all the techniques that you would normally do when writing code in a real life situation.
5. Please provide a README.md file with the description on how to build your application and how to run it.
6. If something is not clear feel free to make some assumptions. In that case make sure to put it in *README.md*. It should contain all the assumptions you made and all the extra information or explanations that you think might be useful for anybody reading your solution.