School Activity Management App

In the educational domain, an application is designed to facilitate the management of school activities. The app allows school organizers to record and manage details of various activities, enabling students, teachers, and parents to access and interact with relevant information.

On the server side, at least the following details are maintained:

- Id: Integer value greater than zero.
- Name: A string representing the name of the school activity.
- Date: A string representing the date of the activity in the "yyyy-mm-dd" format.
- Details: A string containing information about the activity.
- Status: A string representing the activity status (e.g., "upcoming," "completed," "pending").
- Participants: An integer value representing the number of participants involved in the activity.
- Type: A string representing the activity type (e.g., "sports," "academic," "cultural").

The application should provide the following features (available without restarting the app):

● Activity Organizer Section (Separate Activity/Screen):

A. (1p) Add New Activity: Using the **POST /activity** endpoint, the organizer can add a new school activity, both online and offline.

B. (2p) View All Activities: Using **GET /activities** call, organizers can retrieve and display a list of all school activities. The list should include id, name, date, and type. In offline mode, an offline message and retry option should be provided. The data should persist on the device after retrieval, regardless of online, offline, or restart conditions. Upon successful retrieval, since the data is now available on the device, additional server calls are unnecessary.

C. (1p) View Activity Details: By selecting an activity from the list, the organizer can view all details. Using **GET /activity** call with the activity id, the data should be retrieved from the server each time and made available on the device.

● Student Section (Separate Activity/Screen) - Available Online Only:

A. (1p) View Activity Types: Using **GET /types** call, students can retrieve a list of activity types. The server will return all the types in the system.

B. (1p) Register for Activities: Students can register for a specific activity type by selecting a type from the list above and using **PUT /register** with the activity type.

● Teacher Section (Separate Activity/Screen) - Available Online Only:

(1p) View Activity Participation by Date: Using **GET /participation** call, teachers can retrieve a list of activities. The application should group the retrieved entries by month and display the sum of participants per month in a list, in descending order.

● (1p) On the server side, once a new activity is added to the system, the server will send, using a WebSocket channel, a message to all the connected clients/applications with the new object. Each application that is connected will display the received object fields, in a human form (not JSON text or toString) using an in-app "notification" (e.g., using a snack bar, toast, or an on-screen dialog).

(0.5p) During all server or database operations, a progress indicator will be displayed.

(0.5p) On all server or DB interactions, if an error message is received, the app should display the error message using a toast or snackbar. A log message should be recorded for all interactions (server or DB calls).