MSTART Mobile Developer Hiring Task

# Task

To create an Android project using **Java or Kotlin** programming language.

You can use online resources and request help in completing the task, but you have to demonstrate full understanding of the task and the completed code, also you should be able to describe and modify the code during the Interview.

# Where to Send your Task

Once you complete the task, please email your solution in a **ZIP** file with your **CV** to [hr@mstart.com](mailto:hr@mstart.com) and use the Email Subject Line (**MSTART Mobile Hiring Task Files**) include instruction to be able to run the solution such as the required framework or any special instructions.

# Task Description

**Create an application that will call an online API to convert Gregorian/Hijri date and add events to the database, details of the application:**

**Screen 1:**

* Create a screen where the user enters a Gregorian date with a button that will convert it to the Hijri date format.
* The screen will call an online api (url: <https://aladhan.com/islamic-calendar-api> ) that will return the converted date, which will be shown on the screen.
* User can click on a button that will show a dialog to add an event to that date, this event will be stored in the database.

**Screen 2:**

* Create a screen to show all events stored in the database
* Delete one or more event on the same time
* Edit and save event.

# Database Structure

* **Events Table**

ID, event\_name, event\_description, Gregorian\_date, Hijri\_date, server\_datetime

# Technologies:

* Retrofit
* Sqlite or Room
* Recycle view

# Bonus Technologies:

* Coroutines
* MVVM
* Fragments

# Advanced Task Features (Suggested Ideas – Not Mandatory to Apply)

If you feel the above task is easy and would like to work on a more advance solution;

1. **REGEX Validation (Mid Skill Level):** Use REGEX expressions to validate event data for data requirements and data types including dates
2. **Multi Language (Mid Skill Level):** Add Arabic support with the ability to switch between English and Arabic on the page and must change the page orientation from LTR to RTL.
3. **Unit Testing (Mid-High Skill Level):** Create unit test cases to check that your code functioning as it should, test cases should include at least 6 unit cases: for Adding, Updating and Deleting records, some with successful messages and some with failed messages.
4. **Proper Error Handling (Mid Skill Level):** to catch exceptions and errors and return proper errors and use returned error codes; also, to fully log errors and exception to a file or to the database.
5. **Any Other Additional Ideas**: Any other suggestions or ideas you add will be considered a plus to your work; other ideas such as Ability to Change Page Themes, Use Advanced Grid Controls and Filters, Advanced User Image Controls, etc.

# Task Evaluation Criteria

We will evaluate the submitted solutions as follows:

1. Solution must not have any spelling mistakes (Candidate must spell check all their work)
2. Solution compile and basic function are working (Ability to Add, Update, Delete) (Must be completed to setup an Interview)
3. Solution compile and run without any errors or warning or exceptions (Not Required for interview but will greatly improve candidate chances to be hired)
4. To successfully complete one or more of the suggested ideas. (Not Required for interview but will greatly improve candidate chances to be hired)

**Good Luck!**