# Multi-Lingual Task Manager

Track and plan in real time your daily schedules with multi-language task tracker

## Team

* What are the names of the team members?

[Idara Ekong](http://github.com/idaraekong)

* What role will each person play in completing the project?

Since I am the sole contributor to this project, I will be working on it alone handling both the front-end and the back-end

## Technologies

* Languages: JavaScript, TypeScript
* Frameworks: Firebase, React
* Libraries: jest-dom, react-firebase-hooks, react-dom, web-vitals
* Platforms: Node.js, AWS/Digital Ocean or Any other server provider
* Resources: Online tutorials, documentation, open-source libraries

I chose two of these technologies over their alternatives because of the following:

### Framework: React

React is JavaScript framework that is a declarative, flexible, and open-source library for building user interfaces based on UI components. It's typically used to develop web applications that require constant data changes on their UIs. A typical approach would require us to reload the entire website when we click on any component, but React avoids reprocessing every line of code using components. I chose React because of its flexibility features aligned well with our project requirements and would improve the user experience.

### Real-time database: Firebase Firestore

Firestore is a fully managed, scalable, and serverless document database. It effortlessly scales to meet any demand, with no maintenance while accelerating development of mobile, web, and IoT apps with direct connectivity to the database. It has a built-in live synchronization and offline mode that makes it easy to develop real-time applications. It has a customizable security and data validation rules that ensures the data is always protected. It has a seamless integration with Firebase and Google Cloud services like Cloud Functions and BigQuery or Google Authentication which is a security requirement for our project.

## Challenge

The task manager app is intended to solve the problem of managing the status of planned activities on daily, weekly or monthly routine. Many people struggle with remembering what they had planned to do on daily basis, especially when trying to manage their time efficiently while also trying to balance mental and physical wellbeing. This app aims to provide a real-time solution by keeping track and ensuring all planned activities are easily accessible to the user when there is urgent need to confirm what to do at any time of the day by the user..

The task manager app will not solve the problem of suggesting activities for the users as they are supposed to make manual entries by themselves. Additionally, the app will not be able to provide reminders in this current version as at when each activity is due, as it will only display details earlier entered by the user about each tasks on the list for certain period. However, reminders will be added on future upgrades.

The task manager app will help individuals who are not native or fluent English language speaker to translate task details to other global languages that they prefer. The users of the app will be people with busy lifestyles, families looking to juggle between office and home activities.

This project is not dependent on a specific locale, as it can be used by individuals and families around the world. However, the chosen language of preference is dependent on individual country of origin and language of fluency.

## Risks

### Technical Risks

The language translating library may not support all global languages, leading to difficult for users with unavailable preferred language. This could negatively impact the user experience and deter some users from using the app.

Safeguard: We will conduct extensive testing and validation of the algorithms to ensure their accuracy and efficiency. We will also implement performance optimization techniques such as caching and parallel processing to improve app performance.

The integration of various technologies such as React, and Firestore could lead to compatibility issues and developmental delays. This could result in the project falling behind schedule and exceeding the budget.

Safeguard: We will conduct thorough research and planning before implementing each technology to ensure compatibility and identify potential issues. We will also allocate sufficient resources for troubleshooting and debugging to minimize developmental delays.

### Non-technical Risks

User data privacy and security could be compromised, leading to legal and ethical issues. This could result in a loss of user trust and negative publicity.

Strategy: We will implement robust security measures such as data encryption, access control, and regular security audits. We will also adhere to relevant data protection laws and regulations, and provide transparent information to users about our data handling practices.

Competition from existing task management apps and platforms could lead to a limited user base and low adoption rates.

Strategy: We will conduct market research and analysis to identify gaps and opportunities in the existing market. We will also differentiate our app by offering global language translation features. We will also implement a marketing strategy to increase app visibility and attract users.

## Infrastructure

### Process for Branching and Merging:

We will be using the GitHub flow for branching and merging in our team's repository. The process involves creating a new branch for each feature or bug fix, committing changes to the branch, and then opening a pull request for review and merging. This ensures that changes are thoroughly reviewed and tested before being merged into the main branch.

### Strategy for Deployment:

We will be using a cloud-based platform such as AWS or Heroku for deployment. We will automate the deployment process using a Continuous Deployment (CD) tool such as CircleCI or Jenkins. The CD tool will be set up to automatically build and deploy the app when changes are pushed to the main branch.

### Populating the App with Data:

The users will make manual entries through the react API at their own will. The entries made will be automatically saved to the firestore database and then retrieved to be displayed on user’s secured dashboard after successful login.

### Testing Tools and Automation:

We will be using a combination of unit testing, integration testing, and end-to-end testing to ensure the quality of our app. For unit testing, we will be using Jest, a popular testing framework for JavaScript. For integration testing, we will be using Cypress, which allows us to simulate user interactions with the app. For end-to-end testing, we will be using tools such as Selenium or Puppeteer to automate browser testing. We will also be using tools such as ESLint and Prettier to ensure code consistency and quality. Finally, we will implement Continuous Integration (CI) using a tool such as CircleCI or TravisCI to automatically run our tests whenever changes are pushed to the repository.

## Existing Solutions

In the case of the proposed task manager app, here are some existing solutions:

Microsoft Sticky Note - With Sticky Notes, you can create notes, type, ink or add a picture, add text formatting, stick them to the desktop, move them around there freely, close them to the Notes list, and sync them across devices and apps like OneNote Mobile, Microsoft Launcher for Android, and Outlook for Windows.

Google Keep - Google Keep allows users to make different kinds of notes, including: texts, lists, images and audio. Users can set reminders, which are integrated with Google Now, with options for time or location. Text from images can be extracted using optical character recognition technology. Voice recordings created through Keep are automatically transcribed. Keep can convert text notes into checklists. Users can choose between a single-column view and a multi-column view. Notes can be color-coded, with options for: white, red, orange, yellow, green, teal, blue or gray. Users can press a "Copy to Google Doc" button that automatically copies all text into a new Google Docs document. Users can create notes and lists by voice. Notes can be categorized using labels, with a list of labels in the app's navigation bar.

Samsung Notes - Samsung Notes can create and edit documents on mobile, tablet, or PC and collaborate with others. User can add annotations to the PDF using S Pen and create documents with images or voices. It can also be used by connecting documents with various apps such as PDF, Microsoft Word, Microsoft PowerPoint, etc.

Our proposed task manager app is unique in that it will have the capability of translating user’s viewed contents into other preferred global languages. This functionality sets it apart from existing solutions like Sticky note, Google Keep, and Samsung note, which do not currently provide this level of personalization capabilities.