SIT305 4.0 HD Task Proposal

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Proposal for M-Tech: AI Custom Car Tuner

**Introduction**

M-Tech is an AI-powered mobile application designed to support both car enthusiasts and performance tuning novices in optimising vehicle performance. By integrating Llama 2, M-Tech provides personalised tuning recommendations, performance simulations, and step-by-step modification guides tailored to each user's vehicle. Whether users want to increase horsepower, improve fuel efficiency, or enhance torque, M-Tech delivers a data-driven and interactive solution for optimising vehicle performance.

This app is being developed as part of my business, which specialises in building high-performance cars for customers. Many clients reach out asking how to make their cars faster, what modifications to install, and what results to expect. M-Tech will streamline this process by offering accurate, AI-generated performance recommendations, helping customers make informed decisions while seamlessly integrating with my business services.

**Objective**

M-Tech’s goal is to assist users in optimising their car’s performance by offering AI-driven upgrade recommendations based on car specifications and driver preferences. Users can also simulate modifications to see their impact on horsepower, acceleration, and fuel economy before making actual changes. This app will be a key asset for my business, allowing customers to explore tuning options, get expert recommendations, and even book services directly through the platform.

**Proposed Solution**

M-Tech offers a **data-driven tuning assistant** that helps users improve their car’s performance with AI-generated insights. The core features include:

* ***Analyse Car Specs:*** Users enter their **make, model, engine type, and goals** (e.g. more horsepower, better fuel efficiency).
* ***AI-Generated Tuning Recommendations:*** Llama 2 suggests customised modifications, such as turbo upgrades, ECU tuning, or suspension improvements.
* ***Performance Simulations:*** Users can see the projected impact of modifications on horsepower, torque, and acceleration.
* ***Step-by-Step Guides:*** Detailed installation and explanations help users apply and understand modifications properly.
* ***Track Performance:*** Users log changes and track performance improvements before and after modifications.
* ***Business Integration:*** Customers can book tuning services, request custom quotes, and get AI-driven or expert consultation.

**User Interaction Flow**

1. ***Enter Car Details*** – Users input vehicle specs and select performance goals.
2. ***AI Analysis*** – Llama 2 processes data and suggests tuning upgrades.
3. ***Performance Simulations***– Users visualise the before-and-after effects of modifications.
4. ***Step-by-Step Guide***– Users receive installation instructions and tuning insights.
5. ***Track & Compare*** – Users monitor performance before and after modifications.
6. ***Book Tuning Services*** – Customers schedule workshop visits or consultations directly through the app.

**System Architecture:**

A diagram of a system

AI-generated content may be incorrect.

**Technology Stack**

* Development Platform: Android Studio
* Programming Languages: Java
* AI Model: Llama2
* Database: Firebase

**Development Methodology**

I will use the **Agile methodology**, ensuring:

* Rapid Prototyping with user feedback to refine app features.
* Iterative Testing to ensure AI-generated tuning is accurate and useful.
* User-Centric Updates based on real customer needs and feedback.

**Basic Wireframe**

A screenshot of a phone

AI-generated content may be incorrect.A screenshot of a phone

AI-generated content may be incorrect.A screenshot of a car service

AI-generated content may be incorrect.

**Conclusion**

M-Tech aims to be the go-to app for car enthusiasts looking to optimise their vehicles performance. By leveraging the power of Llama2, the app will deliver customised tuning suggestions, engine performance simulations, and step by step guides, all tailored to the user’s car, needs and driving style. This app will also streamline consultations, provide information and allow for further bookings for my business.