

## Software Development Capstone Topic Approval Form

The purpose of this document is to help you clearly explain your capstone topic, project scope, and timeline. Identify each of these areas so that you will have a complete and realistic overview of your project. Your course instructor cannot sign off on your project topic without this information.

*Note: You must fill out and submit this form. Space beneath each number will expand as needed.*

*Any cost associated with developing the application will be the responsibility of the student.*

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### INFORM MENTOR:

Potential use of human subjects: (Y/N) **No, human subjects will not be used**

Potential use of proprietary company information: (Y/N) **No, proprietary use of company information will not be used.**

### ANALYSIS:

1. Project topic AND description:

**This will be an Android application that allows company personnel to enter fuel purchase and mileage information on their cell phones when they add fuel to their company vehicles. Oil changes may also be recorded.**

2. Project purpose/goals:

**An electrical contracting company maintains a fleet of vehicles required to provide parts and service to their customers. The owner of the company understands that maintaining his vehicles with regular oil changes and scheduled maintenance decreases the frequency of having to replace each vehicle. His past experience has shown that keeping his vehicles in good condition extends their useful life and is much less expensive than replacing them more often. To keep records of each vehicles' maintenance history, the company has purchased a custom program to record detailed information about each vehicle. This includes information on the manufacturer's recommended services, when and if these services have been performed, when oil changes are due, if/when the oil changes have been completed (based on oil changes being required every 3000 miles), as well as a complete history of fuel used in each vehicle. Much of this information is determined from the information collected from the drivers when they submit paperwork every time they fill a vehicle with fuel. This information includes the date/time of the purchase, the odometer reading at the time of the fillup, the cost of the fuel, and the amount of fuel purchased. They are also required to submit receipts for each oil change and the odometer reading when it was completed. All of this information is currently entered by office personnel when the drivers submit the paperwork. Unfortunately, and too often, the paperwork is lost or not submitted, leaving gaps in the data. There have also been occasions when the information was entered for the incorrect vehicle, causing data corruption.**

**To alleviate some of these issues, and because the company provides each employee with a smart phone, the company has decided to procure an application to be installed on each of their drivers' phones. This will allow the driver to enter all required information at the time of the purchase (or service) where it can be entered into the company's database directly over the phone's data connection, or stored on the phone where it can be transferred to the database when the phone connects to the company's LAN when the employee is at the company office or warehouse. (The employee normally visits the office or warehouse every working day to replenish stock in their vehicle or to get new assignments)**

The company's current (in house) program checks this data when entered, and issues a notice to the driver assigned to the vehicle when service or an oil change is due.

#### DESIGN and DEVELOPMENT:

1. Application Type (select one):
  - Mobile (indicate Apple or Android)
    - **This will be an Android application supporting API 26, Android 8.0 (Oreo) or newer**
  - Web
  - Stand-Alone
2. Programming/development language(s) that you will use: **This application will be developed in Android Studio using Java, XML, and SQLite.**
3. Operating System(s)/Platform(s) that you will use: **MS Windows 10 Educational Edition**
4. Database Management System you will use: **SQLite and MySQL**
5. Estimated number of hours for:
  - i. Planning and Design: **60**
  - ii. Development: **100**
  - iii. Documentation: **40**
  - iv. Total: **200**
6. Projected completion date: **03/01/2021 – 04/05/2021**

#### IMPLEMENTATION and EVALUATION:

1. Describe how you will approach the execution of your project:
  - a. Initiate
    - i. Identify and Validate Project
    - ii. Create Project Charter
    - iii. Obtain Charter Sign-off
  - b. Plan
    - i. Scope Definition
      1. Create Scope Statement
      2. Create Work Breakdown Structure (WBS Dictionary)
      3. Define Change Request Process
      4. Verify Deliverables
    - ii. Create Project Schedule
    - iii. Define Communications Plan
    - iv. Define Quality Standards and Processes
    - v. Determine Software Development Methodology
  - c. Execute
    - i. Design, Code, and Document
    - ii. Test, Test, Test
    - iii. Repeat 'til Complete
  - d. Monitor/Control
    - i. Ensure All Quality Standards Are Met

- ii. Regularly Communicate With Customer
  - iii. Track and Complete Change Requests
- e. Close
  - i. Obtain Customer Acceptance and Sign-Off
  - ii. Transfer Applicataion to Customer
  - iii. Close Out Project

☒ This project does not involve human subject research and is exempt from WGU IRB review.

**STUDENT SIGNATURE**

Leonard C L

**By signing and submitting this form, you acknowledge** any cost associated with development and execution of the application will be the responsibility of the student.

**COURSE INSTRUCTOR'S NAME:**

Joe Baumhart

**COURSE INSTRUCTOR APPROVAL DATE:** January 20, 2021

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