Project plan for Personal Project

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## Introduction

The following project plan is made to regulate the progression of this project.

## Project description

Being a part of a subgroup which enjoys motorcycles, cars and a lot of other mechanical working things; I gathered quite a bit of knowledge over time about this topic. Knowledge that could be very beneficial to people who don’t have this knowledge. Why? To improve the life of their vehicles.

Lots of people would like to drive older vehicles, but are put off by the seemingly very complicated maintenance which needs to be done on them. While in reality, this maintenance is quite simple. Most of the times, this maintenance however has to be done intuitively, since older vehicles often lack fancy gauges and computers.

My project aims to create such a computer, like a plug and play. While measuring certain diagnostics is a priority; so is saving them. The end user should be able to look back onto their data when they arrive home. That means even though no internet connection is present while driving, the data should be kept and uploaded when there is one.

This product would solve neglect in situations where the owners are not properly informed about maintaining their vehicle.

## Project Scope

The project needs to incorporate a few things to make it a success. These are the following points:

* Possibility to measure RPM.

We will emulate this by creating a variable pulse. An extra for this would be the ability to sense an electric pulse through wireless transmitted energy.

* Possibility to measure Oil Temperature

We will emulate this by creating a thermistor, as most vehicle sensor are dependent on this technique.

* Possibility to measure acceleration and speed.

Research is needed to determine how to measure this the absolute best.

* Possibility to store and keep data until a stable data link can be made.

This data link will be of the Wi-Fi kind, since any other datalink would likely require a lengthier and more complicated setup than is necessary. Furthermore, the mobile network is so powerful that in the future; on the go connectivity can be added more easily.

* Possibility to send data to a SQL database

The data gathered should be send to a database, the nature of the data will be simple enough that a SQL database is more than sufficient for storage.

What the project will not include is the following:

* Fitting to a real life vehicle

Please not that the things mentioned above aren’t indefinitely excluded from this project. These points are likely to be implemented in a later stage of this project.

* Producing a circuit which measures RPM

This is a highly complicated circuit which is too specific for this project right now. It has a lot of factors to it which are very electronically challenging, not only getting the parts but also assembling it.

## Project milestones

* Creating project plan
* Determining the hardware used
* Creating software design
* Making each class of the software design
* Set-up the link between software and database
* Testing each class of the software design with virtual values
* Acquiring the hardware
* Testing each class with real values
* Orientation for future implementations

## Project schedule

To plan the project more steadily, the following schedule was made to ensure that the project stays on track. It follows a per-week approach.

Week 1:

Brainstorm idea for project, pinpoint what the project will be about and discuss with teacher.

Week 2:

Based on feedback teacher, continue expanding upon the project idea or change according to feedback.

Week 3:

Extra time

Week 4:

Start on projectplan.

Week 5:

Projectplan finished, start on determining hardware and draw up preliminary software diagram(s).

Week 6:

Develop diagram and hardware structure further

Week 7:

Try to get feedback from teacher on both the diagram and the hardware structure before starting to implement.

Week 8:

Write software classes

Week 9:

Write software classes

Week 10:

Set-Up database link

Week 11:

Test software with virtual values

Week 12:

Depending on possible errors found, either revise software or continue with integrating hardware

Week 13:

Test each class with proprietary hardware

Week 14:

Depending on possible errors found, either review software or continue with future orientation

Week 15:

Finish of the project, write everything up and make sure there is a future orientation which tells the reader what the future plans for this software could be.

Week 16:

Extra time

Week 17:

Extra time

Week 18:

Extra time

## Risks

The risks associated with this project mainly relate to either the project taking too much time to complete or an unspecified reason for absence.

For the first problem, this can be easily solved by asking for help to either a teacher or a classmate.

The second one is not really solvable by nature, that is why I explicitly planned some extra time