CHAPTER 1

INTRODUCTION

1.1 PROJECT BACKGROUND

Type of transmission becomes one of the main aspects chosen by the buyer in buying a car other than the size of car, type of engine, and also the manufacturer of car. Nowadays, there are about three popular most popular types of transmission being used in the whole world wide. Those transmissions are manual transmission, automatic transmission, and also continuously variable transmission (CVT). But automatic transmission and CVT provides better handling compared to manual transmission where the driver don’t need to shift the clutch manually using a gear knob. Therefore, a lot of buyer nowadays chose a car with automatic transmission and CVT compared to the car with manual transmission. Both conventional automatic and CVT has their own advantages and disadvantages. One of the advantages of CVT is that it can work to keep engine at optimum power range and simply raises and lowers the engine speed as needed. There are rumors saying that CVT provide better performance than conventional automatic transmission. Therefore, an experiment will be conducted to compare both transmissions from their performance, fuel economy and also the possibility of using continuously variable transmission for a car under 1 liter engine. The car selected for conducting the experiment is Viva Elite 1000cc. For the continuously variable transmission, Honda Insight 2005 will be selected as a reference. This is because of Perodua Viva Elite only comes with conventional automatic transmission. After the experiment is finished, the collected data will be presented in the graph and the performance between the transmissions will be compared.
1.2 PROBLEM STATEMENTS

The world has advanced once more in automotive field in using Automatic transmission and also CVT transmission for a car. These two great achievements have been used widely in cars. Nowadays, there are many car manufacturers has use these two kinds of transmission such as Audi, Nissan, Mercedes Benz, and many other bigger manufactures of car. A research will be developed to find which one has better performance for the car under 1 liter engine, Viva Elite 1000cc. To understand the performance of these two transmissions, a calculation will be needed to estimate which one have a better performance. The best method to compare the performance is by developing a graph of gear ratios by certain velocity of both transmissions.

1.3 PROJECT OBJECTIVES

i. To analyze the performance of the Automatic Transmission and the CVT for a car under 1 liter engine.
ii. To compare the Automatic Transmission and CVT Transmission.
iii. To study the possibility using CVT for a car under 1 liter engine.

1.4 PROJECT SCOPES

i. Study of the Automatic Transmission mechanism.
ii. Study of the CVT Transmission mechanism.
iii. Analyze the project by plotting the graph.
iv. Based on Viva Elite 1000cc.
Figure 1.1: Flow chart of the overall methodology.