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## **Project Overview**

This computer-based training curriculum is designed for adults who wish to keep the basic performance of their car's engine, but do not have any professional knowledge or skills about car maintenance. Learners may get basic information about how to keep their cars' engines run well. Learners may learn basic knowledge and skills in this curriculum in their own pace, and simply print out any module or section they need in standard letter size paper without any change of page/printer setting.

Most automobile or machine maintenance curriculums are presented by paper-based format, and explain through terminologies. That makes most non-professional users can not really understand easily; in addition, most users do not feel comfortable to search the specific issue in a thick manual.

Thus, this curriculum is based on the website format that offers learners a user-friendly interface and easy-of-understanding explaining. Users may find out the topic they need and reach through link quickly. And learners may follow the step-by-step instruction to finish any maintenance easily; they may also print out any of all modules or sections as a job aid without any additional change of page setting.

In addition, there is a "Quiz" section following by the main content of each category. Learners may try to answer those questions for impressing purpose.

## **Problem Statement**

Automobile is an important part of American's life. Most adults in the United States need to drive for their daily activities that make "keep the car healthy" to be a very important issue to all of us.

Basically, the only parts of a car that non-professional people can take care of are engine, tire/brake and interior. People can clean up car interior, but it helps car's performance less; about tires and brakes, the only things they can do are keeping the tires clean (or polish them with specific oil) and replace the tire or brake pads before worn out. But people may do lots of things to keep their engines well, and drive safely if they have basic knowledge about engine maintenance. Since the United States is a big country and the labor charge of factories are so expensive, it is better for car owners to maintain, at least check their car engines by themselves instead of asking professional person before or after the engine crashed.

## Target Analysis

### 1. General Characteristics:

- Age: Adults (18 years or older that may own and drive a car legally)
- Gender: Male and female
- Education: Does not matter, but it is better for learning if the learner has basic concept of vehicle (around middle school level)
- Skilled specifics: Do not have professional skills about car repair.

### 2. Personal Characteristics:

- People who like to do handcrafts, or repair things by themselves
- Wish to save money
- Wish to drive carefully and to avoid any possibly car crash.

## **Project Outline**

### Module 1 Lubrication

Section 1: About lubrication

Section 2: Oil check

Section 3: Oil selection

Section 4: Oil change

Section 5: Engine flush

Section 6: Quiz

### Module 2 Overheat prevention

Section 1: About overheat

Section 2: Check coolant

Section 3: Check radiator

Section 4: Water tank

Section 5: Quiz

### Module 3 Tune up

Section 1: About tune up

Section 2: Carburetor

Section 3: Throttle body

Section 4: Timing belt

Section 5: Spark plug

Section 6: Quiz

## Task Analysis

There are three part of the engine maintenance: lubrication, overheat prevention and tune up. There will have subtitles in each part.

### Module 1 Lubrication

- About lubrication: tell learners the importance of lubrication.
- Oil check: Using step-by-step instructions and related photos/graphics to teach learner how to check quantity and quality of engine oil correctly.
- Oil selection: Explain the meaning of the engine oil number and introduce the basic classifications of the engine oil. Learners may learn how to read the label of engine oil and choose the right oil for their beloved cars.
- Oil change: Tell learners how often should the engine oil be changed, and what tools and materials do they need to prepare. There are step-by-step procedures; safety tips and waste recycle information in this section.
- Engine flush: A brief description about what is the engine flush work for and how to use the engine to maintain the engine.
- Quiz: Using simply questions to impress learners the points of this section.

### Module 2 Overheat Prevention

- About overheat: The symptoms and the results of engine overheat.
- Check coolant: How to check the coolant level and how to add coolant in right way.
- Check radiator: Teach learners that how does the radiator work, and the procedure of radiator checking.
- Water tank: How to check, maintain and fix the water tank.
- Quiz: Using simply questions to impress learners the points of this section.

**Module 3     Tune Up**

- About tune up: Tell learners the meaning of tune up and the items of tune up work.
- Carburetor: Teach learners the functions of the carburetor, how maintain and check the carburetor.
- Throttle body: The importance of throttle body maintenance—what will happen if the throttle body dirty; how to check and maintain it.
- Timing belt: Basic concept about timing belt; what will happen if the timing belt is broken (that's why some cars use timing chain); how to check it and how often should it be replaced.
- Spark plug: How to check the spark plug, how often should it be replaced; how to choose spark plugs.
- Quiz: Using simply questions to impress learners the points of this section.

# Task analysis

