# Large System Design

Carspot for SE 3A04, Tutorial 2

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# List of Tables

# 1 Introduction

This section should provide an brief overview of the entire document.

## 1.1 Purpose

a) Delineate the purpose of the document

b) Specify the intended audience for the document

## 1.2 System Description

a) Give a brief description of the system. This could be a paragraph or two to give some context to this document.

## 1.3 Overview

a) Describe what the rest of the document contains

b) Explain how the document is organised

# 2 Use Case Diagram

This section should provide a use case diagram for your application.

a) Each use case appearing in the diagram should be accompanied by a text description.

# 3 Analysis Class Diagram

This section should provide an analysis class diagram for your application.

# 4 Architectural Design

This section should provide an overview of the overall architectural design of your application. You overall architecture should show the division of the system into subsystems with high cohesion and low coupling.

## 4.1 System Architecture

a) Identify and explain the overall architecture of your system

b) Be sure to clearly state the name of the architecture

c) Provide the reasoning and justification of the choice

d) Provide a structural architecture diagram showing the relationship among the subsystems (if appropriate)

### 4.2 Subsystems

a) Provide a brief description of each subsystem. Be sure to document its purpose and relationship to other subsystems.

## 5 Class Responsibility Collaboration (CRC) Cards

| **Class Name:** CarDB | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Contain a listing of all car models and their attributes | - |
| Allow insertion and deletion of entries | - |
| Allow editing of entries | - |
| Provide information to CarSearchController | CarSearchController |

| **Class Name:** FeedbackStorage | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Contain a list of all feedback forms completed by users with anonymity, stored in a file | - |
| Receive feedback from feedback form for storage | FeedbackForm |

| **Class Name:** FeedbackForm | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Allow user to enter feedback about the application | - |

| **Class Name:** CarSearchController | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Contains algorithm to identify a car given some attributes | - |
| Extract information from the SearchForm and compile it into a search query | SearchForm |
| Send result of search to SearchResult for display and verification | SearchResult |
| Query car database and experts as part of search algorithm to identify the car | CarDB, Expert |
| Control experts to be used in identification based on attributes given | ExpertPicker |

| **Class Name:** SearchResult | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Receive search result and send it to the forum to be displayed | Forum,CarSearchController |
| Once a car identification is confirmed, result sent to search history | SearchHistory |
| Send result for verification before sending to search history | ResultVerifier |

| **Class Name:** ExpertPicker | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Control which experts will be used to identify the car based on attributes that are inputted | Expert |
| Set experts to "passive" or "active" for identification process | Expert |

| **Class Name:** HelpPage | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Provide information about the application, and how to use it | - |

| **Class Name:** Forum | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Central hub of application to allow navigation to various pages | SearchForm, SearchHistory, HelpPage, FeedbackForm |
| Display result of car identification | SearchResult |

| **Class Name:** SearchForm | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Allow user to input characteristics of the car they want to identify | - |
| Send inputted attributes to car identification algorithm | CarSearchController |

| **Class Name:** SearchHistory | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Store previous five confirmed identification results | - |
| When a new result enters the history, pushes out fifth most recent confirmed identification | - |

| **Class Name:** DealershipLocator | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Interface with Google Maps API to locate dealerships that sell a specific car from the search history | SearchHistory |

| **Class Name:** SecurityController | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Contains encryption and decryption mechanisms for transmitted messages | - |
| Decrypt search result once it arrives at the forum | Forum |
| Encrypt the search result before sending it to the forum | SearchResult |

| **Class Name:** ResultVerifier | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Provide the user with the ability to confirm or deny the identified car result | - |
| Restart car identification if identified car is incorrect | CarSearchController |
| Restart search form if the identified car is incorrect three times | CarSearchController, SearchForm |

| **Class Name:** Expert | |
|---|---|
| **Responsibility:** | **Collaborators:** |
| Know potential car identifications given certain attribute combinations in respective domain of expertise | - |
| Provide expertise to identify a car given some attributes of its domain | CarSearchController |
| Provide functionality to be set as "active" or "passive" when trying to identify a car | ExpertPicker |

# A Division of Labour

| **Team Member:** | **Sections Completed:** |
|---|---|
| Abhijit | Section 1, 4 |
| Cole | Section 3, 4, Reviewed and Reworked Business Events |
| David | Section 3, 5, Reviewed and Reworked Business Events |
| Sharon | Section 2, 3, Reviewed and Reworked Business Events |
| Yash | Section 3, 5, Reviewed and Reworked Business Events |
| Yuchen | Section - |

# IMPORTANT NOTES

- Please document any non-standard notations that you may have used
  - *Rule of Thumb*: if you feel there is any doubt surrounding the meaning of your notations, document them
- Some diagrams may be difficult to fit into one page
  - It is OK if the text is small but please ensure that it is readable when printed
  - If you need to break a diagram onto multiple pages, please adopt a system of doing so and thoroughly explain how it can be reconnected from one page to the next; if you are unsure about this, please ask about it
- Please submit the latest version of Deliverable 1 with Deliverable 2
  - It does not have to be a freshly printed version; the latest marked version is OK
- If you do NOT have a Division of Labour sheet, your deliverable will NOT be marked