

CST2310 IS Analysis & Design

Coursework 1 – Portfolio

**Autumn/Winter term
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Student Name: Arusha Ramessur

Student ID Number: M00940320

Lab Tutor: Parvesh Seeburrun

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Use Case Diagram – Fitness Centre Case Study

Use case and class diagram done in group. Team members:

Manasi Chundunsing(M00843706), Joshua Aziken(M00831509), Joshua Els(M00888392)

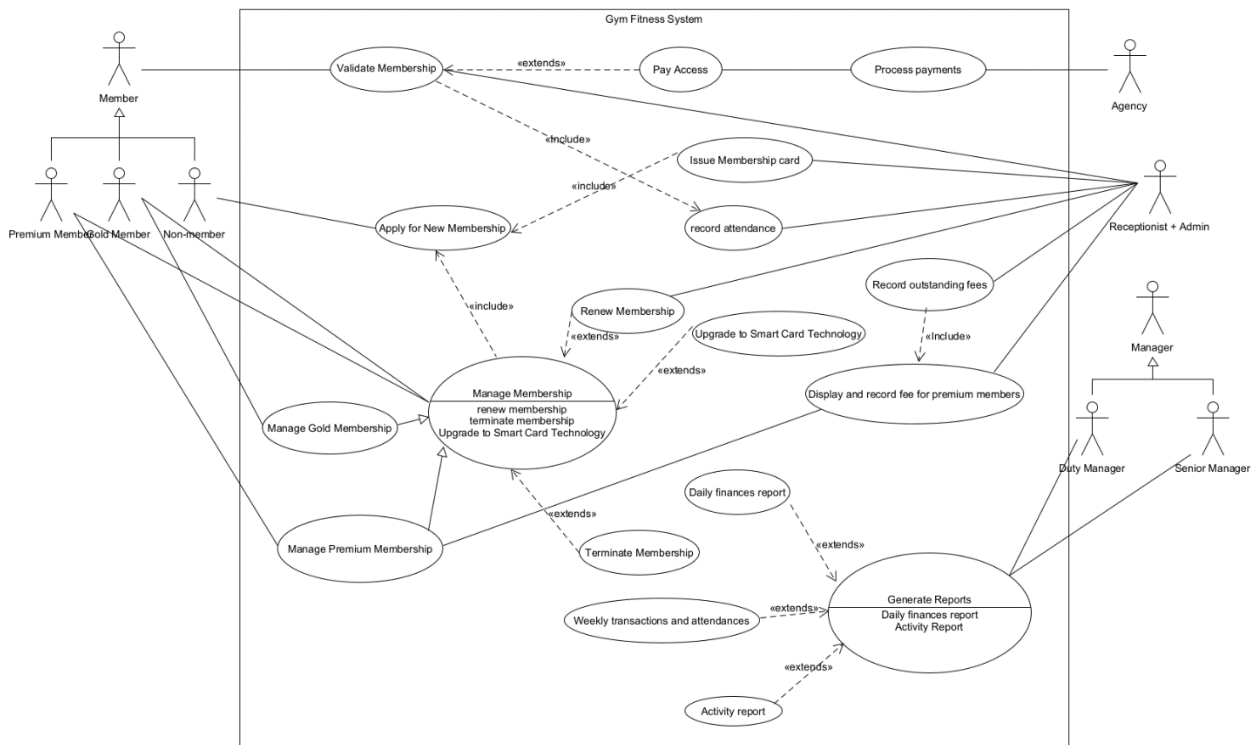


Figure 1 - Use Case Diagram – Fitness Centre Case Study

Class Diagram – Job-Finder Ltd Case Study

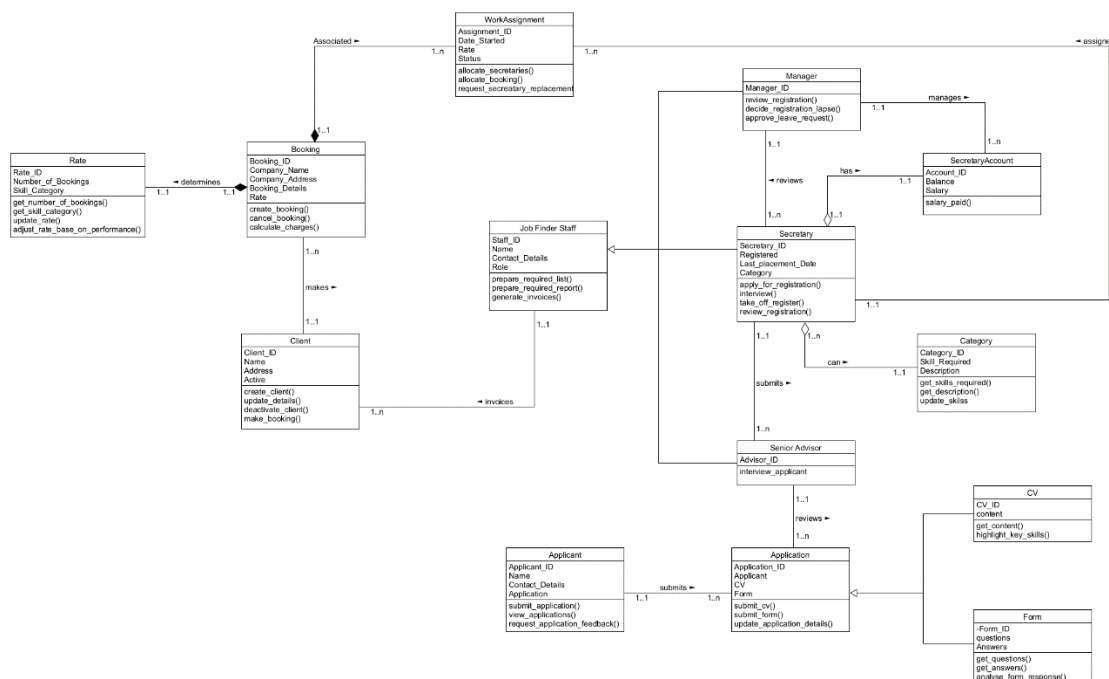


Figure 2 - Class Diagram – Job-Finder Ltd Case Study

Project Management – Gantt Chart (Plan for MDX study)

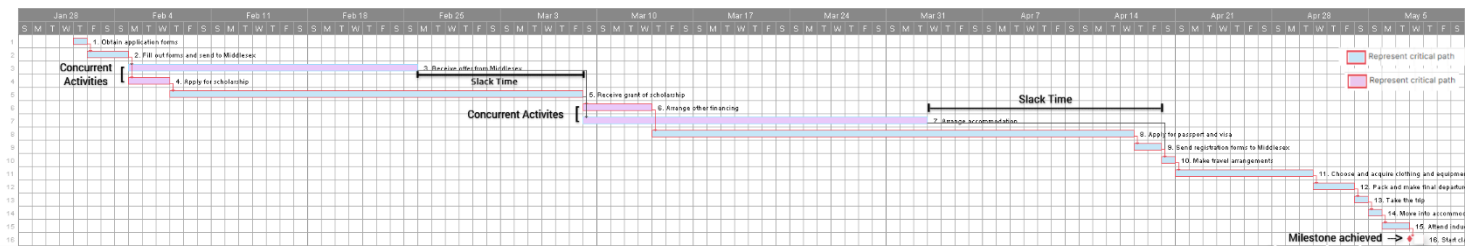


Figure 3 - Project Management – Gantt Chart (Plan for MDX study)

Define slack activity:

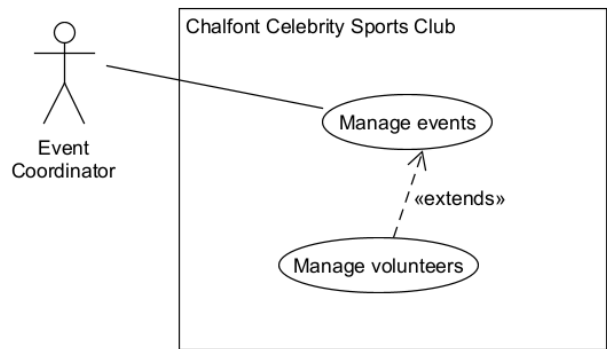
In project management, slack, also known as “float,” is the amount of time that a task can be delayed without impacting subsequent tasks or the project’s overall completion. (Landau, 2020).

Define critical path:

The critical path is defined as the sequence of activities with the longest duration in a project, representing the essential series of interdependent tasks that must be successfully concluded for the entire project to reach completion. (Maylor, 2010).

Activity Diagram – Chalfont Celebrity Sports Club Case Study

Use case being documented for this case study:



Define pins:

Pins notations are used to represent parameters associated with actions. Input pins provide the necessary context and condition for an action to perform its intended operation. Output pins reflects the outcomes or consequences of the action’s execution. (Seidl et al., 2012).

Define swimlanes:

Swimlanes in an activity diagram are visual partitions that help organise and categorise the activities or elements involved in a process or workflow. They are represented as horizontal or vertical bands, and each swimlane typically corresponds to a specific participant, role, department, or system component. (Seidl et al., 2012).

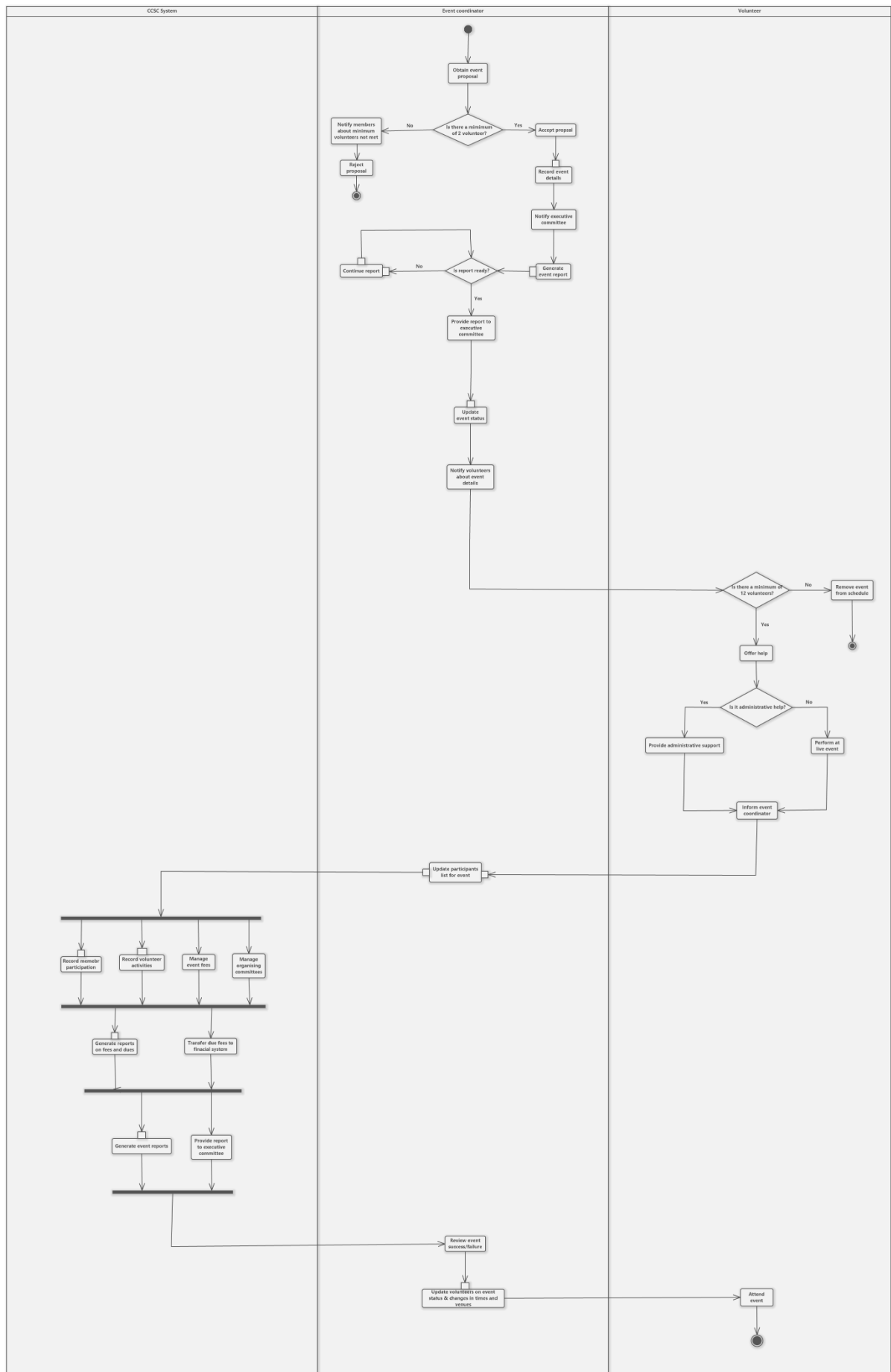
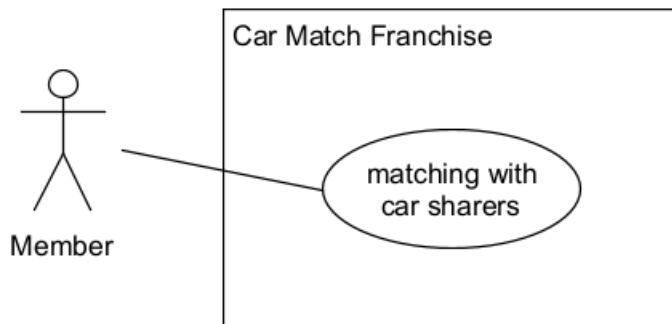


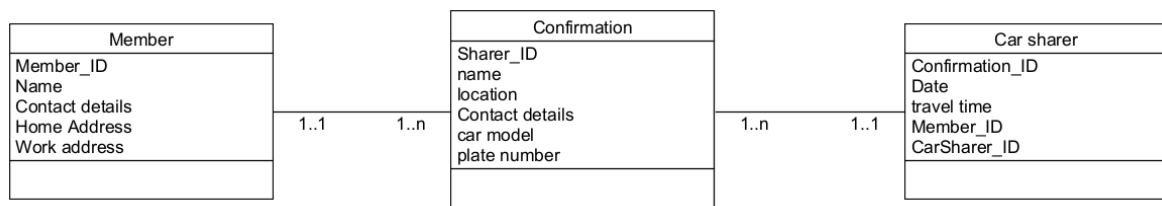
Figure 4 - Activity Diagram – Chalfont Celebrity Sports Club Case Study

Sequence Diagram – Car Match Case Study and Functional Requirements

Use case being documented for this case study:



Class diagram being documented for this case study:



Define Frames:

The following sequence diagram is drawn within a rectangle known as a frame. Frames are used for interaction diagrams to make it clearer how they are combined. (Bennett, Mcrobb and Farmer, 2014).

Combined fragments are also used in sequence diagram to model various control structures explicitly. This includes:

Branches and loops:

- Alt: used for alternative interaction (it is like an if else statement)
- Opt: used for optional interaction
- Loop: used for iterative interaction
- Break: used for exception interaction

Concurrency and order:

- Seq: used for sequential interaction with weak order
- Strict: It is a sequential interaction with strict order
- Par: used for concurrent interaction; meaning events may happens simultaneously
- Critical: used for atomic interaction (prevent interruptions from unexpected events)

Filters and assertions

- Ignore: used for irrelevant interaction parts
- Consider: used for relevant interaction parts
- Assert: used for asserted interaction
- Neg: used for invalid interaction (It plan events that must not occur)

(Seidl et al., 2012)

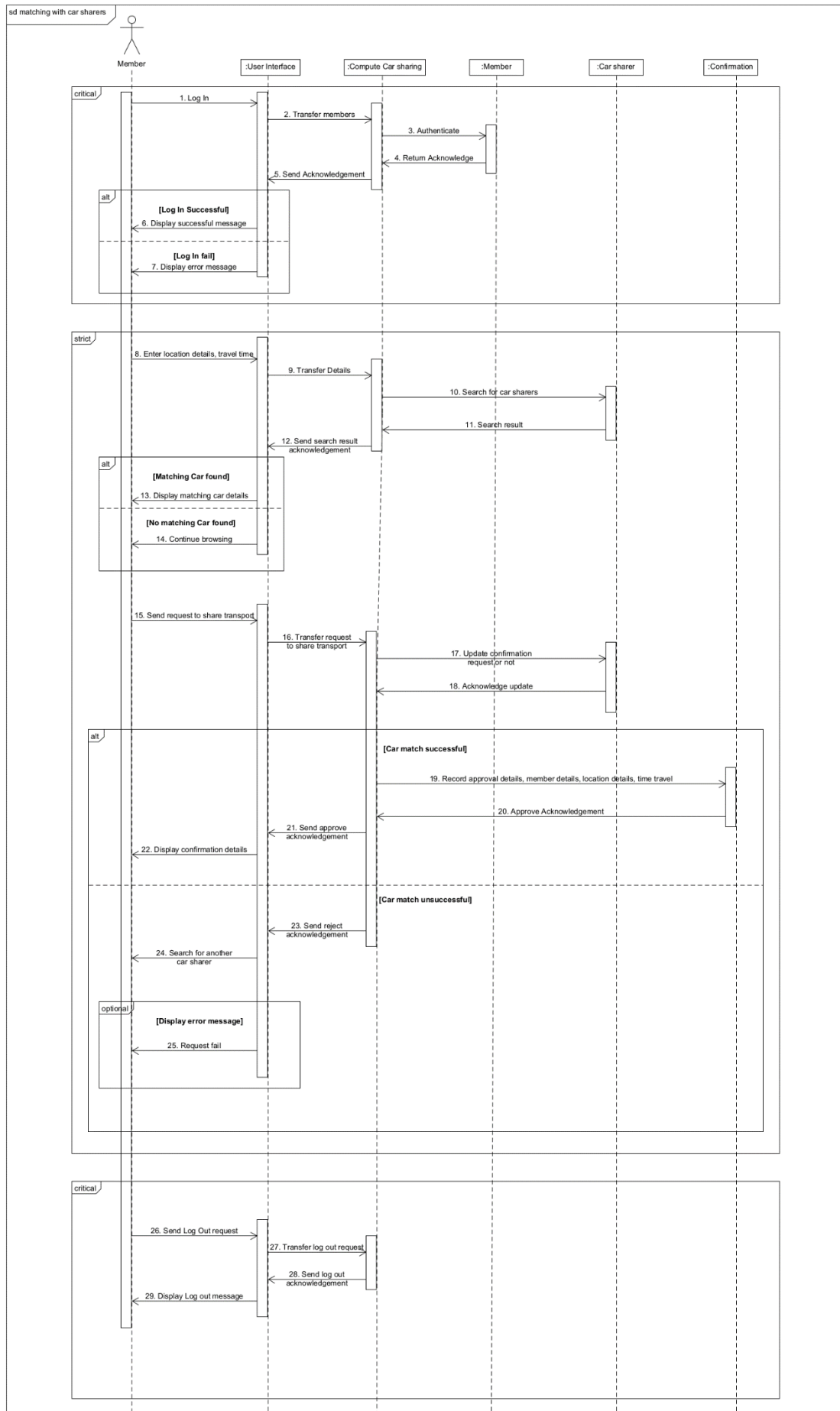


Figure 5 - Sequence Diagram – Car Match Case Study and Functional Requirements

References

Bennett, S., Mcrobb, S. and Farmer, R. (2014). *Object-oriented systems analysis and design: using UML*. Johanneshov: Mtm.

Landau, P. (2020). *A Quick Guide to Float (or Slack) in Project Management*. [online] ProjectManager.com. Available at: <https://www.projectmanager.com/blog/float-in-project-management>.

Maylor, H. (2010). *Project management*. 4th ed. Harlow, England; New York: Pearson Education Limited.

Seidl, M., Scholz, M., Huemer, C., Gerti Kappel and Springerlink (2012). *UML @ Classroom: An Introduction to Object-Oriented Modeling*. Cham: Springer International Publishing.