# CS 255 Model Application Short Paper

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## Process Model Application

A process model is a framework that defines a set of activities and their sequence to be followed in the development of a system. In the case of DriverPass, we can use the Agile development process model, which involves breaking the development process into smaller iterations or sprints to achieve faster and continuous delivery of a working system. Here is how the Agile process model can be applied to DriverPass:

1. Planning: In this phase, the project requirements are defined, and the development team outlines a plan for achieving the objectives. The team defines the project scope, identifies the stakeholders, and creates a prioritized backlog of tasks.
2. Sprint 1: In this phase, the team works on the top priority tasks from the backlog to develop a working prototype of the system. The team focuses on delivering a specific feature or function of the system within a short time frame of typically two weeks.
3. Sprint 2: In this phase, the team works on the next set of priority tasks from the backlog to improve the system and fix any issues identified during the previous sprint. The team should deliver a working feature or function that is tested and ready to be deployed at the end of the sprint.
4. Sprint 3: In this phase, the team continues to work on the remaining tasks in the backlog and improves the system further. The team should ensure that all the features and functions of the system are fully functional and have been tested thoroughly.
5. Testing and Quality Assurance: In this phase, the team tests the system for quality and performance issues, and ensures that it meets the project requirements. Any bugs or errors found during testing are fixed by the development team.
6. Deployment: In this phase, the system is deployed to the live environment, and the users are provided access to the system. The team ensures that the system is stable and functional after deployment.
7. Maintenance and Support: In this phase, the team provides ongoing maintenance and support for the system to ensure that it remains stable and functional. Any bugs or errors reported by the users are fixed promptly by the development team.

By using the Agile process model, the development team can work in shorter iterations and deliver a working system faster. This approach allows for flexibility and continuous improvement of the system, based on the feedback received from the stakeholders and users.

## Object Model Application

To apply an object model to a design for DriverPass, we need to identify the different objects and their relationships. Here are some examples of objects that could be used:

* User: This object represents a user of the system, such as a student or an administrator. It would contain attributes such as name, email address, and password, as well as methods for logging in and out.
* Exam: This object represents an exam that a student can take. It would contain attributes such as the date and time of the exam, the score received, and the questions that were asked.
* Question: This object represents a single question that can appear on an exam. It would contain attributes such as the text of the question, the correct answer, and the possible answers that were given.
* Exam Simulator: This object represents the software that is used to simulate the real driving exam. It would contain methods for generating questions, simulating the exam experience, and grading the exam.
* Administrator: This object represents an administrator of the system, who has special privileges such as the ability to add or remove users or exams. It would contain methods for managing users and exams.

These objects would have relationships between them, such as a user taking an exam or an administrator creating a new exam. By creating an object model, we can better understand the different components of the system and how they interact with each other.

## Process and Object Model Comparison

The process model and the object model are two different approaches to system design, and each has its advantages and disadvantages for DriverPass.

Advantages of the process model:

* Focuses on the flow of activities and tasks in the system, making it easier to identify and optimize the system's performance.
* Helps to break down complex tasks into smaller, more manageable sub-tasks.
* Provides a clear understanding of the sequence of tasks, inputs, and outputs required to achieve a particular goal or objective.
* Allows for continuous improvement and refinement of the system over time.

Disadvantages of the process model:

* Can be overly focused on the technical aspects of the system, which can sometimes overlook the needs and goals of the users.
* Can be rigid and inflexible in the face of changing user needs or system requirements.
* May not provide a comprehensive view of the system as a whole.

Advantages of the object model:

* Focuses on the data and objects that make up the system, which can provide a more intuitive and user-friendly interface.
* Allows for greater flexibility and adaptability to changing user needs and system requirements.
* Provides a clear separation of concerns between different parts of the system, making it easier to maintain and update over time.
* Allows for the reuse of existing code and components.

Disadvantages of the object model:

* Can be more complex and difficult to understand than a process model, particularly for non-technical stakeholders.
* May require more up-front design and planning to ensure that the objects and data structures are well-defined and organized.
* May be less efficient than a process model for certain types of tasks or activities.