# CS 255 Model Application Short Paper

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## Process Model Application

A process model for the DriverPass project would map out the key activities and workflows involved in the system. The process starts with students registering on the platform and logging into their accounts. Students create accounts by providing personal details and setting up login credentials. This involves capturing personal information, setting up login credentials, and verifying user details. Once logged in, students would access the practice exams. The process here includes selecting a test, taking the exam, and receiving feedback. The system should handle question delivery, answer recording, and immediate scoring. Students can schedule and manage their on-the-road training sessions. This process involves checking available slots, booking sessions, and receiving notifications. Instructors need to manage training sessions and track student progress. This process includes scheduling sessions, updating training records, and evaluating student performance. Admins will oversee user accounts, system performance, and content management. This involves managing user roles, monitoring system usage, and updating content. By mapping out these processes, stakeholders can see how tasks and information flow through the system, which helps in identifying inefficiencies and areas for improvement. As the system grows in complexity, the process model can become difficult to manage and interpret.

## Object Model Application

How I would apply an object model to a design for the DriverPass scenario is focus on the entities within the system and their relationships. This approach would involve identifying and modeling the different objects that make up the system. Student object represents the users who are preparing for driving tests. Attributes might include student ID, name, contact information, and exam history. Methods could include registering for exams and scheduling training sessions. Instructor object represents the driving instructors who manage training. Attributes might include instructor ID, name, specialization, and availability. Methods could involve managing student progress and scheduling sessions. Admin object handles administrative tasks. Attributes include admin ID, name, and role. While methods might include user management, content updates, and system monitoring. Practice exam object includes details about the exams, such as exam ID, questions, and correct answers. Those methods could include delivering exams to students and scoring responses. Training session object represents the on-the-road training sessions. Attributes might include session ID, date, time, and location. Methods could involve booking and managing sessions. The benefits of object modeling are that it closely mirrors real-world entities and their interactions, making it easier to understand the system from a user's perspective. As well as it supports changes and additions to the system, such as adding new types of users or objects. It can become complex to manage and understand the relationships between numerous objects and may not provide a clear view of the overall workflow and process sequences, which can be crucial for understanding how different parts of the system interact.

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## Process and Object Model Comparison

The advantages of each model for the DriverPass scenario are process modeling that provides a clear picture of how tasks are performed and flows through the system, which is essential for optimizing processes and identifying inefficiencies. It is useful for understanding and improving the sequence of activities within the system. The other is object modeling which offers a detailed representation of system entities and their relationships, it helps in designing and managing the system's components. It also facilitates easier modification and extension of the system by focusing on objects and their interactions. Some disadvantages for process modeling are that it become complex as the number of processes and interactions increases. As well as that it might not fully capture the details of how different entities interact within the system. For object modeling the disadvantages are that it may become complex with numerous objects and their relationships, potentially making the system design difficult to manage. It also does not emphasize the workflow and processes, which can be important for understanding how different functions are executed in sequence. Both process and object modeling have their benefits and can be used together to design the DriverPass system effectively. Process modeling shows how tasks move through the system, while object modeling helps to define and organize the different entities and their interactions. Using both methods will create a system design that ensures smooth operations and clearly defined relationships between different parts of the system.

References

Multiple References. (n.d.). Generating business process models from object behavior ... https://kodu.ut.ee/~dumas/pubs/ootopc.pdf