# CS 255 Model Application Short Paper

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## Process Model Application

The development of a process model for the DriverPass application, requires a well-structured design to ensure a successful implementation. Two primary modeling approaches that can be employed to design the system are the process model and the object model. While each model has its advantages and disadvantages, careful consideration of its specific uses and limitations is necessary to determine the most appropriate blend for the project. In this short paper, I will examine the concepts of unified modeling and explore the possible advantages and disadvantages of each modeling approach for the DriverPass scenario.

The process model is a flow-oriented modeling approach that focuses on the sequence of activities and events in a system. It is a practical modeling approach for designing complex systems that involve multiple stages and decision points. One of the significant advantages of the process model is that it provides a clear understanding of the system's workflow and enables the identification of inefficiencies or bottlenecks in the process. It also facilitates the identification of opportunities for optimization and process improvement.

For example, in the DriverPass scenario, the process model can be applied to map out the sequence of activities that take place during the registration process, including identity verification, driving history checks, and payment processing. By modeling the process, the system designers can identify the areas that require improvement and streamline the process to enhance efficiency. This can lead to cost and time savings and can add to the overall improvement in the quality of program efficiency.

However, one of the primary disadvantages of the process model is that it is not well-suited for complex systems that involve multiple entities or interactions. It may be challenging to capture all the operations and dependencies in the system accurately. Additionally, the process model may not provide a comprehensive understanding of the system's behavior, as it focuses primarily on the workflow.

## Object Model Application

The object model is an entity-oriented modeling approach that represents the system as a collection of objects or entities and their attributes and relationships. It is well-suited for modeling complex systems that involve multiple entities and interactions. One of the significant advantages of the object model is that it provides a detailed understanding of the system's structure and behavior, which can aid in the development of more efficient and effective software.

For example, in the DriverPass scenario, the object model can be applied to represent the various entities involved in the system, such as the user, the registration process, the payment gateway, and the database. By creating a detailed object model, developers can ensure that all aspects of the system are accounted for and that each component is designed and implemented consistently. This can improve software quality, reduce development time, and increase maintainability.

However, one of the primary disadvantages as stated by the authors of the publication “Fundamentals of Business Process Management.” that the object model can be challenging to create since the accurate model is extremely complex that fully represents the system's architecture. (Dumas, et.al. 2018) Additionally, it can be time-consuming to develop and maintain, especially as the system evolves and changes over time. Furthermore, the object model may not fully consider the external factors that can impact the system's performance.

## Process and Object Model Comparison

The process and object models have advantages and disadvantages when applied to the DriverPass scenario. While the process model is suitable for identifying inefficiencies in the workflow, it may not provide a comprehensive understanding of the system's behavior. (Ambler, 2002). The object model, on the other hand, is suitable for representing the system's structure and behavior, but it can be challenging to create an accurate model that fully represents the system's operation. Ultimately, the most appropriate modeling approach for the DriverPass project will depend on the specific goals and requirements of the project, as well as the expertise and resources available to the development team.

## References

Dumas, M., La Rosa, M., Mendling, J., & Reijers, H. (2018). Fundamentals of Business Process Management. Springer International Publishing.

Ambler, S. W. (2002). Agile modeling: effective practices for eXtreme programming and the Unified Process. John Wiley & Sons.