# CS 255 Model Application Short Paper

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## Process Model Application

[How would you apply a process model to a design for the DriverPass scenario? Remember, you do **not** need to create diagrams for this paper.]

To begin to apply a process model to a design for the DriverPass scenario, I first would need to ensure that the requirements-gathering process has been completed so that I have all the information I need to begin evaluating what the processes for the system should be. I would need to have a firm understanding that processes in a process model are specific sets of events that happen within a working system. The processes that I would likely include in a process model for the DriverPass scenario would be the following: (I want to note that these processes likely should be broken down further, however for the purpose of this short paper, I identified the major processes that the system has)

* 1.0 – Validate user credentials
* 2.0 – Tracking and Notifications
* 3.0 – Administrative - Create/Modify/Remove User Accounts, office appointments, reports, etc.
* 4.0 – Customer Information
* 5.0 – Accessing Learning Resources
* 6.0 – DMV Updates
* 7.0 – Scheduling Driving
* 8.0 – Taking Practice Tests
* 9.0 – Update System – Optimize system (All components including security)

Once I have identified all the processes within the system, I want to identify any source/sinks that the system depends on for the processes to be able to work together. I believe the source/sinks are the customers, the employees that access the system, and the DMV.

Lastly, I would identify and label the data flows, remembering that it is not describing the specifics of the interactions between processes and source/sinks but rather identifies that there is data flowing from one process to another or a data source/sink. For example, I would label a data flow from the Administrative Process to the data source/sink DMV and call it regulatory updates.

## Object Model Application

Similarly to the process models, I would need to ensure that requirements gathering has been completed so that I can identify all the processes that occur within the system. Once I have identified the processes, I can begin looking at the objects within those processes and their relationship with each other. Once I have identified the objects, I am able to determine their inheritance and how the objects should or should not interact with each other, and what types of relationships the objects should have.

## Process and Object Model Comparison

The advantage of having process models when designing a system is that process models help to show the flow of information in the system. It helps to describe the structure of the system, what information it uses, and how it is handled. It helps to have a better understanding of not the information itself but what types of information each of the processes will handle. The disadvantage of a process model is that it does not show all of the interactions that are happening within the system, what pieces of information are being hidden, and how it relates to other aspects/objects of the system.

The advantage of utilizing object models when describing a system’s design is that you can see what is happening inside of the projects by all the objects that each of the processes is comprised of and how those objects interact with each other. We see more in-depth the types of relations, such as whether or not they are accessible by other objects, how they inherit from other objects, if they do at all, as well as the functionality that each of the objects provides. A disadvantage of object models is that they do not capture the entire flow of data. It’s hard to see when or at what point of a process each of the objects will be used or how they will be used. They simply show that there is a need for the object and how it relates to other objects within the system, if at all. Object models do a great job of showing how the various parts of a system can or cannot access each other. One other benefit of object modeling is that we have a better understanding of how the various objects within the system can be protected/accessed. I would say that what a process model does not do to describe a system design, an object model helps to clarify and vice versa. Both models, when used together, work well to describe a system as a whole; each provides its unique methods for describing the system.