# CS 255 Model Application Short Paper

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## Process Model Application

## A process model depicts the sequence of the system's operations. This model will illustrate all the tasks that must be done. This will also display each task's input and output. Each action must also provide pre- and post-conditions. For the process model, we will also need the order and flow of each task. Process models encompass a wide range of concepts, including Waterfall and Agile. Activity diagrams and case diagrams are other types of process models.

We might create a case diagram for the DriverPass software, illustrating the system's numerous applications. Students must be able to select from several driver courses with different features, among other requirements for the DriverPass system. The following is how such a method would look. A student must be able to log in using their unique ID, proceed to the course selection screen, select a course to add to their cart, and then pay for it using both their ID and financial information.

If the student selects a more premium tier set of classes, we may conclude from this approach that they must be able to access the class materials and check their course information. A use case diagram or process flow for this procedure should look like the following. After completing the prerequisite of purchasing the course, access to the course object with the materials must be allowed. The course object would then open, and the user would need to go the LMS website to get the content. The course contents would be housed in an HTML link connecting to a repository hosted by Amazon Web Services (AWS).

An activity diagram is like this type of framework, and it would fit in well. By breaking down the procedures into a sequence of user-specific tasks, you may determine the flow that your system should follow. The testers might then use this to quickly evaluate the effectiveness of the DriverPass system.

## Object Model Application

## Using object-oriented methods would be the primary objective of the object-based approach in this Driver Pass application. To accomplish this, we would need to focus on the system's programming language and its functional scope in relation to the system itself. The object model will provide visual representations, but they will be based on the relationships between an item and a class.

Using abstraction, encapsulation, modularity, and hierarchy would be important when creating our model for Drive Pass. For example, making certain class properties, such variables or functions, private or public may assist protect data or allow other classes to access pre-existing functionalities, preventing code from having to be rewritten. To prevent having to redo the login code for each user, consider creating a parent class for users and subclasses for students, administrators, teachers, and so on. Others may read the model and recognize the linkages because it graphically depicts these connections between the classes.

## Process and Object Model Comparison

It is critical to analyze the advantages and disadvantages of process models. Using a process model has the advantage of being easier for non-technical employees to understand. In other words, it would be easier to demonstrate to a group of people who lack technical knowledge at a board meeting. Simply said, it would guide them through each step from start to finish. A potential drawback of using a process model is that it simply shows the steps a system takes to perform tasks; it does not explain how the system really performs the process. With DrivePass, for example, the model would go into effect when the user logged in, displaying the home page with options for how to proceed. The functions and variables that are used to verify a user's login and ensure that the correct user has access to the correct account are not displayed in a process model. One advantage of using an object model is that it lets a development team view the structure of the system. It allows them to see the parts and understand how they work. Just by glancing at it, they would know what variables and functions to expect, making it easier for them to get started. If they merely analyzed a process model, on the other hand, they would be aware of how to move from point A to point B, but they would have to put forth effort in understanding the codes structure.

## References

Dennis, A., Tegarden, D. P., & Wixom, B. H. (2012). *Systems analysis and design with Uml*, 4th

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