# CS 255 Model Application Short Paper

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## Process Model Application Process modeling by definition is the work or actions performed on data so that they are transformed, stored, or distributed. The most common form of process modeling is through the use of data flow diagrams (DFD). Data flow diagrams are illustrations showing how data moves between the processes and data stores within a system and the external factors on that system. A DFD is similar to a flow diagram except instead of capturing a sequence of events the DFD represents the data flow. DFDs provide an understanding of the system operation to prevent any possible issues, increase efficiency, and develop better processes. The DFD is displayed using four different symbols data stores, processes, and sources/sinks (or external entities), data flows. A data store is a physical location for data to be stored such as a file folder or notebook. Data cannot move directly from one data store to another data store but instead must travel through a process. The processes symbol is a depiction of the work or action being done either manually or by a computer performed on data so that the data is transformed, stored, or distributed. Process must have both an input and an output to avoid making data from thin air or creating a black hole. The source or sink is simply where the data originated or is going. Data cannot more directly from the source to a sink. Data flow is the last symbol and it is an arrow depicting where the data is going or coming from. Data flow can only go in one direction between symbols. Decision tables are also a good tool to use for process modeling. The decision table is another good tool that can be used for process modeling. A decision table is a tool used to test a systems behavior for different input combinations. The decision table is a matrix representation of the logic of a decision; it specifies the possible conditions for the decision and the resulting actions. These two diagrams can be used to apply a process modeling approach to the DriverPass project by analyzing the steps involved in the process of their online training classes, software to access both mobile and computer hardware, and import/export abilities. The process model will help the creators of DriverPass see the flow of data for their website and pick out any possible flaws that may hinder its’ performance. You could also use the decision table to walk through all the possible inputs designed around the website and training to solve any possible issues.

## Object Model Application

## The object model is taking entities that have defined roles in an application. Objects have a state, behavior, and identity characteristics exhibited through operations. The state of an object depends on its relationships and attributes. The behavior of an object is based on how the object acts and reacts within a system. These two things combined with the characteristics of an object lead to them being grouped together in a logical manner, called classes. A static structure of these classes can be illustrated a class diagram. The best example of this is a UML class diagram. The UML diagram would be the best way to display the object model for the creators of DriversPass. This diagram will provide the different objects, their attributes, and the operations/functions they perform. In the case of DriversPass some of the objects would include the driver, trainer, and online classes.

## Process and Object Model Comparison

The biggest advantage for the DriversPass using process modeling is the DFD. The DFD gives the creators of DriversPass an effective way of showing a high-level and detailed view of the system’s data flow and processes. Process models allow for collaboration and decision-making by making it easier for customers to view and read. The biggest advantage for the DriversPass using the object modeling is the UML diagram. The UML diagram shows the different objects associated with the online training program as well as the attributes and functions. The biggest weakness to using the process modeling is the risk of losing cost and time for a possible over analyzed product. Process modeling can also become obsolete as the systems grow and update over time. The biggest weakness to using the object modeling is the difficulty linking the objects and relationships together from lack of experience.

## References

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