# CS 255 Model Application Short Paper

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## Process Model Application

“Process modeling is the graphical representation of business processes or workflows. Like a flow chart, individual steps of the process are drawn out so there is an end-to-end overview of the tasks in the process within the context of the business environment” (Vanner, 2020).

Reading over the DriverPass interview some data flows begin to come to light. These data flows represent the business logic and process modelling would “…graphically [represent] the functions, or processes, that capture, manipulate, store, and distribute data between [the] system and its environment and between components within a system” (Valacich and George, 2019).

I would start applying this graphical business logic decomposition by defining the sources, sinks, and any data stores. For example, the interview suggests there would be a driver schedule as a data store and the DMV as a potential data source.

Once I had these identified I would start to see how these “interact” with each other. That is to say, data always moves from a store or source or to a sink via a process. There might even be multiple processes involved but this is where the business logic comes into play.

For example, a user could want to schedule a new driving lesson within the application. The business logic will dictate what process are involved. Do users need to have passed enough written material first – a process might be involved to ascertain if this hurdle is complete? Do users need to upload their provisionary driver’s license – another process? What about the trainers? There may be multiple processes involved (all invisible to the user) that are used to find all the trainers available at a certain time, book their time, and then alert them.

The interview also suggested there would be a system that collected usage and other business metrics. There would be many processes distinct from any other part of the system. Moreover, I would guess that this area would have the most uncertainty and churn. Learning what is important in decision making is an ever-evolving process in and of itself. Therefore, having a process to give feedback to the development team will also be important.

This first pass would represent level 0 of the DFD. Each process could then be decomposed into more granular processes.

## Object Model Application

Object modeling focuses on “…a visual representation of software or systems’ objects, attributes, actions, and relationships. The basic factors of an object model are classes and objects” (Nduati 2020).

The first pass at defining the objects could be the list of sources, sinks, and data stores found during the decomposition process in process modelling e.g., a Person class as an abstract class, then derived classes User, Proxy, Trainer, Admin, etc.

Once these objects are identified the business logic should be consulted to see what attributes each object would need, e.g., User class would need \_userName, \_accountType, \_birthDate, etc.

Once the object classes and their attributes are defined then their relationships may be fully explored. This exploration can help to define the database architecture needed; i.e., what tables will be generated and what serves as primary and foreign keys.

## Process and Object Model Comparison

For me, the process model helps to think through and map the business logic. It allows developers, domain, and clients to view the understanding of this logic before it is converted into code. It also allows any QA teams to validate the code matches the intended actions.

On the contrary, object model is more useful in defining the underlying code architecture. What classes do we need, should they be derived, abstract, etc.? What are the needed attributes? What database tables are needed and how do they connect through their key values.

Both are valuable but in different ways and they do not really replace each other. If the team though having graphical representations of the underlying logic and architecture were valuable, I would perform both modelling activities.

## References

Nduati, J. (2020. Dec. 1). *The basics of the object model*. Section. <https://www.section.io/engineering-education/basics-of-the-object-model/>

Valacich J. S., & George J. F. (2019). *Modern systems analysis and design*. [MBS Direct]. <https://mbsdirect.vitalsource.com/#/books/9780135172841/>

Vanner, C. (2020, Dec. 15). *What is process modeling? 6 essential questions answered*. Bizagi. <https://www.bizagi.com/en/blog/process-modeling-and-mapping/what-is-process-modeling-6-essential-questions-answered>