# Individual Project Report

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## 1. Your personal contribution to the project.

I was able to tap on my experiences to come up with several ideas for the project, one such idea was a Wedding Venue Recommender cum Seating Arrangement Planner. Together with the team we had an ideation session to brainstormed on everyone's ideas, eventually we decided on Chandra's idea of a News Article Curator as we felt it had a large user based, thus higher market value.

I helped formalized the News Curator idea into something where an Intelligent System could aid in, specifically linking up how we could insert a rule-based engine to solve the problem of recommending news articles, and also figured out where to insert the NLP techniques learnt during our Cognitive System module.

After designing and developing the rule-based engine for this system. I went on to designed and developed the first iteration of the web-based frontend. With these two components out, I quickly put together a functioning end-to-end prototype system to test our idea. After which, Chandra stepped in to integrate the prototype more tightly with his modules. Later, we discovered the need to create an article labeler and I contributed by building the local_news labeler using NLP techniques.

2. What you have learnt from the project.

The team had the inclination to develop the app using python, however C# has always been the language of choice in my organization. However, I felt it was right to pick up Python programming as it was highly regarded in the AI community. Picking up python was not difficult with my prior programming experience.

Another challenge face was the development of the frontend. This was total unfamiliar territory as I had always been in the backend algorithm engine role. I took up a lot of self-learning to understand how to create frontend with HTML, CSS, and JS. Chandra also helped point me to a popular Python library called Flask, this eased the process of linking up the Python backend with the web-based frontend. After which I spent some time to look into deploying our app via Heroku.

Doing the practice module helped me understand the importance of system design techniques such as inference diagrams, system design flowchart, attribute tables, etc. Initially, I felt they was merely formalities for documentation purposes, but their value were greatly shown when they provided clear guidance in the implementation process. For example, it become clear what questions needed to be asked from the user when the inference diagram was created. It also helped us understood what features are needed from a news article for our recommendation process to work.

The system design flowchart was useful in guiding us what modules needed to be developed and the associated input/output so that it can fit into the whole system flow. This flowchart was useful suppose we decide to improve our system; we could easily identify which modules would be affected, and so long as the changes maintained the integrity of the input/output the whole system would remain functional.

3.  How you can apply this in future work-related projects.

Through this project I learnt how to create web frontend and backend, this allowed me to hone my skills in becoming a full-stack developer, which is a value skill set in any software engineering project.

Learning about designing of intelligent systems was useful and highly applicable in future projects. This project has showed me the importance and usefulness of drawing inference diagrams, system design flowchart, attribute tables, etc, prior to any implementation. This is something that I can take back to my workplace as it was not commonly practice, at least not at a formal level.

This project also allowed me to practice system integration; how to put together the various modules and open-source packages into one full suite. This is certainly a valuable experience as I had always been working on backend systems alone.

The design and implementation of machine inference algo, e.g. rule-based inference model under uncertainty, is also something that can be applied when a future relevant project arises. For example, specific to my organization, the rule-base model can provide a more structured/ systematic way to program game agent behaviors in simulation engines.