**Project Name: XX\_AA**

**Project Requirement**

The software and libraries you will need to use for your works will be depending on the chosen application area and problem definition. Because of this, it is important that all the necessary software and libraries used in your project are accessible to the reviewer and clearly documented. Information regarding the software and libraries your project makes use of should be included along with your submission.

The project will most likely require some form of datasets (text files, images, table file, ....). The data you use must either be publicly accessible or provided by you during the submission process.

**Project Overview**

Describe your problem, explain why the problem is important. Background information such as the problem domain, and related data sets or input data is provided.

**Problem statement**

Define the problem which needs to be solved clearly. Describe the input, output. Is it a classification or clustering problem?

**Data Understanding**

Describe the data which has been acquired, including: the format of the data, the quantity of data, for example number of records and fields in each table, the identities of the fields and any other surface features of the data which have been discovered. Does the data acquired satisfy the relevant requirements?

**Data Preprocessing**

* Clean data set, handle missing values if need
* Data augmentation and data labeling if need
* Produce derived attributes (features), entire new records or transformed values for existing attributes
* Splitting data
* Handle imbalanced data sets

**Modelling**

* Select the actual modeling technique that is to be used. If multiple techniques are applied, perform this task for each technique separately. Document the actual modeling technique that is to be used.
* Build model: implement your model that you selected.
* Create an evaluation measure for test dataset: need to generate a procedure or mechanism to test the model’s quality and validity.
* With any modeling technique, there are often a number of parameters that can be adjusted. List the parameters and turning this parameters.

**Model Evaluation and Validation**

* Choosing the right metrics is important
* Your model should better than the baseline model
* Model’s parameters fine-tuning
* Errors analysis and improving model

**Deploy Model**

**Conclusion**

* The final results are discussed in detail.
* Exploration as to why some techniques worked better than others, or how improvements