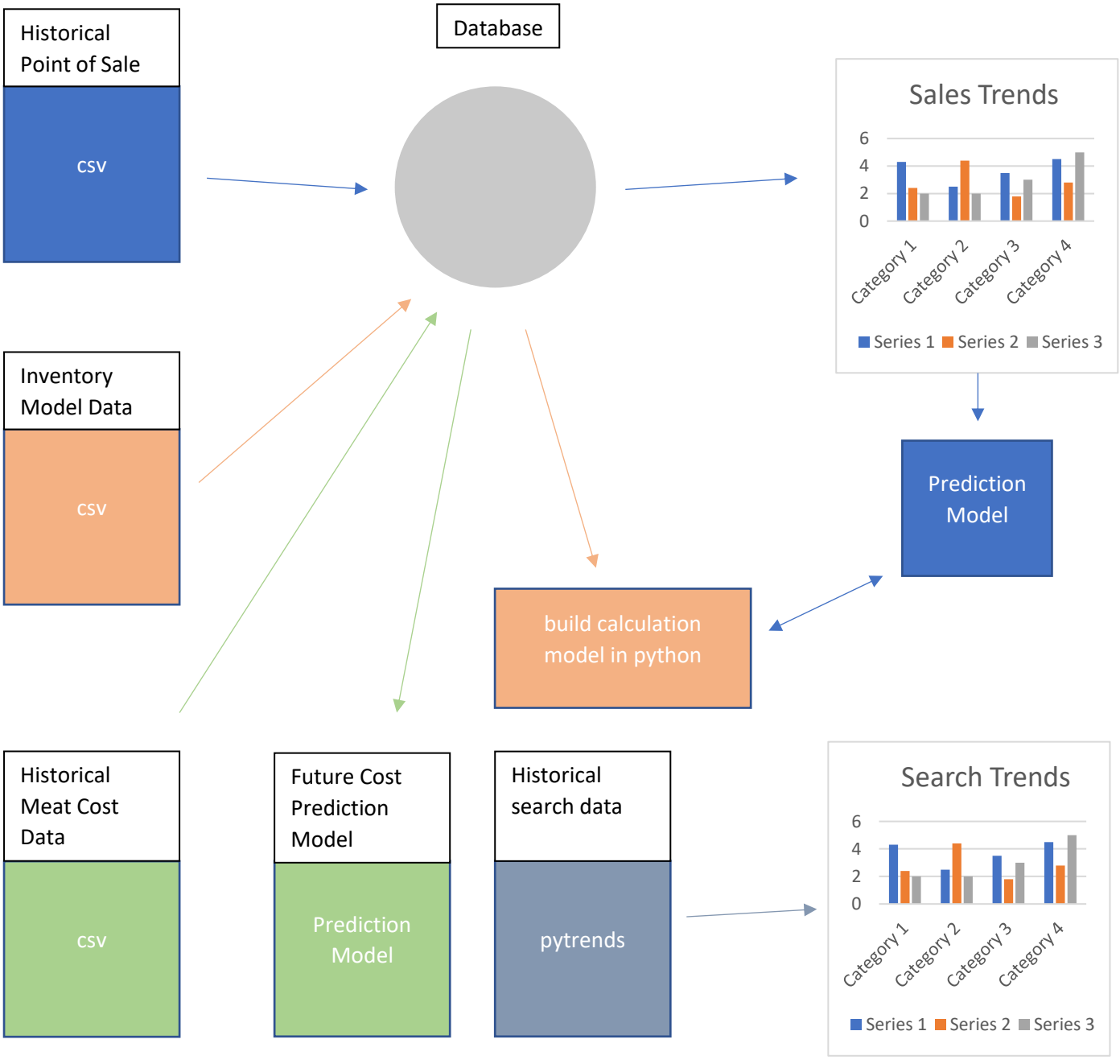
Project 4 - Proposal

Restaurant Info hub

"Using POS data, inventory models, pytrends and prediction models to help forecast future sales and plan inventory"

High level overview



The initial idea is to generate a dashboard using the follow data sources:

- Point of sale historical data
- Historical produce data – Meat (beef, chicken, lamb)
- Historical pytrends data – local: AUS – Subject Matter: food search items

The POS data will be cleaned and stored in a database for future retrieval. This data will be visualized in order to distinguish any patterns/trends that might exist in the sales. Eg – seasonal changes?

These trends may then be modelled using prediction modelling to potentially forecast future sales.

Creating a inventory model ('sub-items needed to create a menu item' x sales) and combining it with the predicted forecasts from future sales, we can gain a educated idea of what the future inventory will need to be.

Using historical price data of ingredients we can attempt to again use machine learning to generate forecasts of future ingredient prices. Using data collected from:

20 yrs of historical data

- https://www.indexmundi.com/commodities/?commodity=chicken&months=240&currency=aud#dropdown-lvl107
- https://www.indexmundi.com/commodities/?commodity=lamb&months=240&currency=aud
- https://www.indexmundi.com/commodities/?commodity=beef&months=240&currency=aud

Using pytrends to collate historical data surround popular search terms relevant to the cuisine sold at this particular restaurant will allow us to determine what periods of the year people may search for food of the style in question – gaining us insight into what periods of the year should be considered for deploying marketing/advertising to gain the most amount of traction.

Machine Learning and implementations:

- Sales predictions: supervised, unsupervised or deep learning (TBA)
- Forecast of ingredients costs: supervised, unsupervised or deep learning (TBA)

Libraries to use:

pandas

matplotlib/seaborne/chartjs (TBA)

machine learning libraries (TBA)

HTML – Bootstrap – D3 -

Menu Option 1

Menu Option 2

Menu Option 3

Menu Option 4

information:

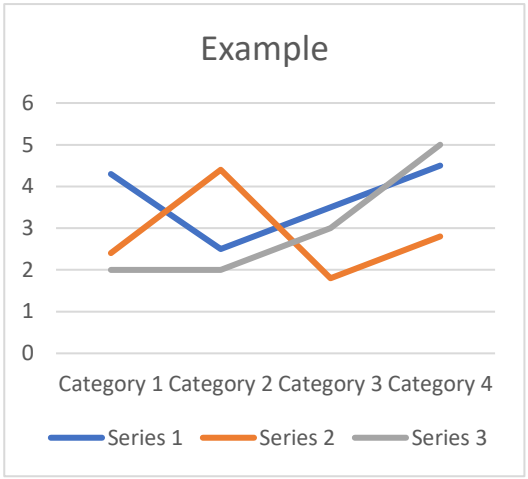
top items

text

information:

general

text



Menu Option 1

Menu Option 2

Menu Option 3

Menu Option 4

information:

Sales information

text