# FAST-NU – Karachi Campus


## Artificial Intelligence

## Project Report

**Course Coordinator:**

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# Big Mart Sale Prediction


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# Big Mart Sales Prediction

## 1) Introduction:

Using this BigMart sales data for Product, building a model, so BigMart will understand the properties of products and stores which play a key role in increasing sales.

## 2) Problem Statement:

The data scientists at BigMart have collected sales data for 1559 products across 10 stores in different cities for the year 2013. Now each product has certain attributes that sets it apart from other products. Same is the case with each store. The aim is to build a predictive model to find out the sales of each product at a particular store so that it would help the decision makers at BigMart to find out the properties of any product or store, which play a key role in increasing the overall sales.

## 3) Deliverable:

following Steps are follow to solve the Problem:

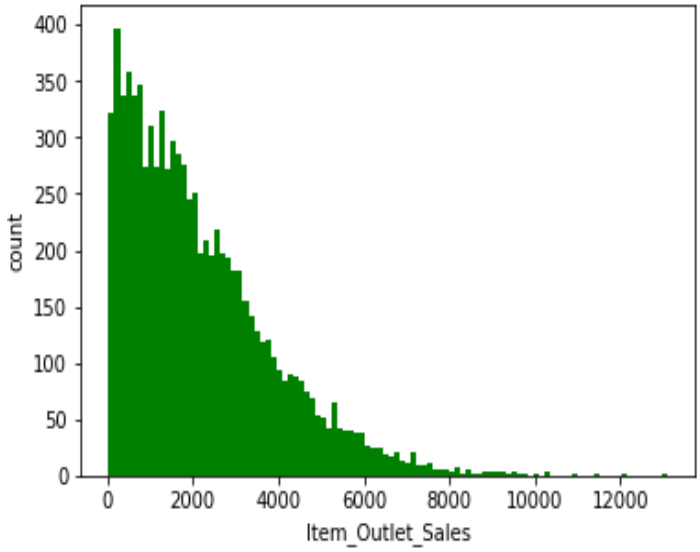
a) Hypothesis Generation
b) Exploratory Data Analysis
   (i) Univariate Analysis
   (ii) Bivariate Analysis
c) Missing Value Treatment Analysis
d) Feature Engineering
e) Encoding Categorical Variables
f) Pre-Processing Data
g) Modeling
   (i) Random Forest
   (ii) XGBoost

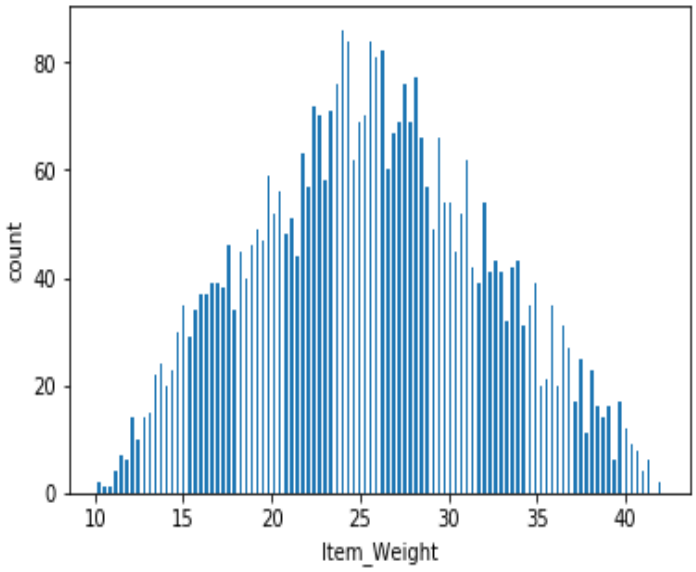
4) **Technique:**

After Feature Engineering and Pre-Processing Data I used two different Model one is Regression Model and another Model is XGBoost to Predict the Sale of Item in particular Outlet.

5) **Graphical Analyzation:**

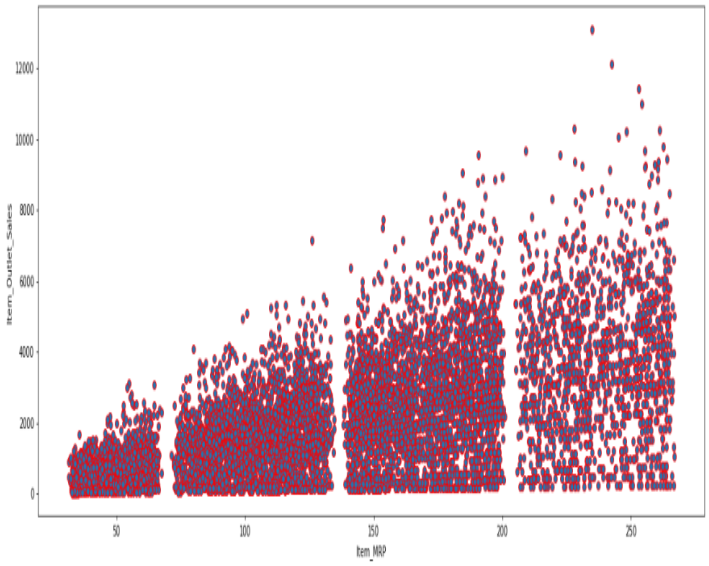
- Univariate EDA:
  - Independent Numeric Variables:



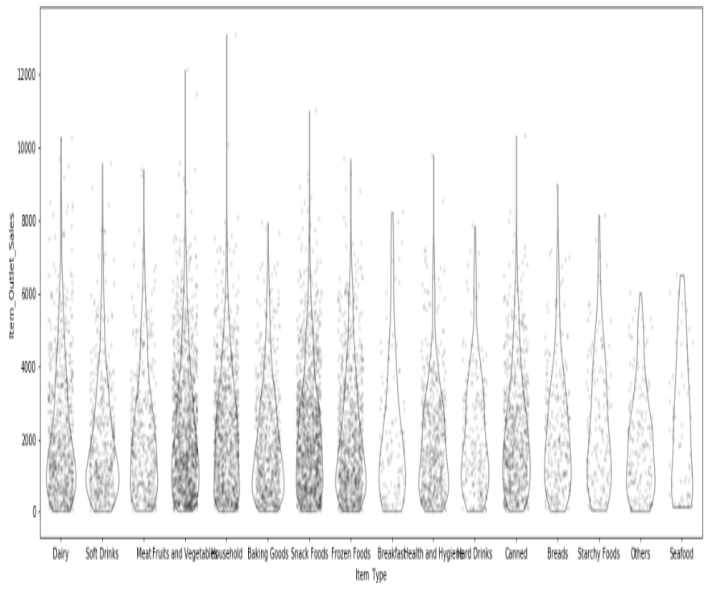



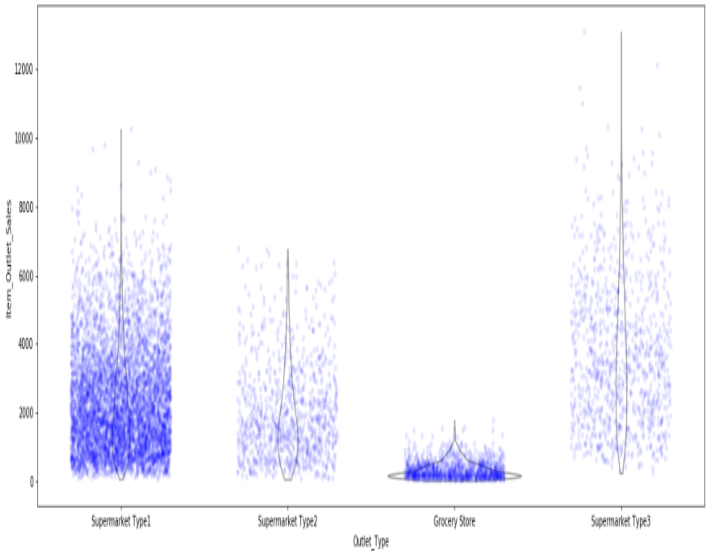
- Independent Categorical Variables:

- Bivariate EDA:
  - Numeric Variables:




  - Categorical Variables:






6) **Result:**

- Random Forest:

Root Mean Squared Error (RMSE) = 1160.1000966309896

7) **Reference:**

https://datahack.analyticsvidhya.com/contest/practice-problem-big-mart-sales-iii