Ahsanullah University of Science and Technology

Department of Computer Science and Engineering

Program: Bachelor of Science in Computer Science and Engineering

Course No: CSE 4108

Course Title: Artificial Intelligence Lab

Project Report

Group No: B102

Submitted to

Mr. Md. Siam Ansary

Lecturer, Department of CSE, AUST.

Ms. Tamanna Tabassum
Lecturer, Department of CSE, AUST.

Submitted by

Hasan Bin Jamal	18.01.04.070
Fatima Juairiah	18.01.04.071
Mostafa Mahatabe	18.01.04.074

The Description of The Problem

The name of our project is “Outfit Price Prediction” where we tried to predict the outfit price of varsity students. Effective price prediction helps businesses price increases or decreases may affect customer demand.

Description of The Dataset

For our project we took the most of our data from the students of “Ahsanullah University of Science & Technology”. The sample in the dataset has 7 features. We tried to work on the best features which can help us to predict in an efficient way. The features are Gender, Style, Type, Dress, Size, Brand, Price Range. We took more than 300 data.

Description of The Used ML Models

We used the regression model. We used six regression model for predicting the outfit price prediction. Those are,

1. Linear Regression
2. Polynomial Linear Regression
3. Decision Tree Regression
4. Random Forest Regression
5. Support Vector Machine Regression
6. Bayesian Ridge Regression

Comparison of the performance scores of the models

	Linear Regression	Polynomial Regression	Random Forest Regression	Decisioin Tree Regression	Bayesian Regression	Support Vector Regression
MSE	0.6492451124633372	0.000147952242945294 06	0.019776410106872297	0.6195362220365611	0.6244941494215172	0.24992724776870973
RMSE	0.8057574774479832	0.01216356209937262	0.14062862477771834	0.7871062330057875	0.7871062330057875	0.49992724247505227
MAE	0.5846196271093196	0.00218006187971711 17	0.06336482876962933	0.6743702352423022	0.5780657121967184	0.3175323006772609
R_square	0.1538078245265224 2	0.9998071667727323	0.9742244598070271	0.1925288408862050 3	0.1860669372396798 2	0.6742578766637293

Discussion

The Polynomial Regression has the lowest MSE among all that is 0.00014795224294529406. Therefore, Polynomial Regression gives the best result or the accurate one. It's RMSE: 0.01216356209937262, MAE - 0.0021800618797171117 and R_Square : 0.9998071667727323

Then gives the accurate result Random Forest Regression, Support Vector Regression, Decision Tree Regression, Bayesian Regression, Linear Regression respectively.

So Linear Regression gives the worst result which has the MSE of 0.6492451124633372, RMSE 0.8057574774479832, MAE 0.5846196271093196 and R_suare 0.15380782452652242.

Contribution

Dataset creation and data collection is made and collected by all.

Hasan Bin Jamal	- 33.33%
	Random Forest Regression
	Bayesian Ridge Regression
Fatima Juairiah	- 33.33%
	Polynomial Linear Regression
	Decision Tree Regression
Mostafa Mahatabe	- 33.33%
	Linear Regression
	Support Vector Machine Regression