Project Name	Profit Predictor
Dataset File Name	50_Startups.csv
Goal	To predict the profit in the given regions.

Problem Identification	
Stage1 (DOMAIN)	Machine Learning
Stage2 (Learning Method)	Supervised Learning
Stage3 (Data Type)	Regression

We have created the model with different Regression algorithms in order to select the best and the accurate one.

Below are the **Algorithms** and the **Evaluation Metrics** used to create models.

Algorithm	1.Mutiple Linear regression 2.Support Vector Machine 3.Decision Tree Regressor
Evaluation Metrics	r2_score

Based on the **r2_score** value obtained from the created models, we conclude **DECISION TREE REGRESSOR** with the parameters **criterion="absolute_error", splitter="best"** gives us the better r2_score of **0.951323**.

The corresponding program is uploaded to the GITHUB repository.

Below are the r2_score values obtained in different models.

Multiple Linear regression	R2 Value	0.902564

Support Vector Machine	R2 Value	**kernel**				**Hyper Factor (c)**
		linear	poly	rbf	sigmoid	
		-0.055691	-0.057103	-0.057317	-0.057209	1
		-0.039644	-0.053667	-0.0568075	-0.054719	10
		0.106468	-0.019802	-0.050726	-0.030453	100
		0.780283	0.266163	0.006768	0.185068	1000
		0.923998	0.812962	0.371895	0.853531	10000

Decision Tree Regressor	R2 Value	**splitter**	**max_features**	***criterion***			
				squared_error	*friedman_mse*	*absolute_error*	*poisson*
		best	*sqrt*	0.527908	0.692625	0.491391	-0.017556
			log2	0.853946	0.79781	-0.008232	0.923303
			None	0.912016	0.901616	0.951323	0.943703
		random	*sqrt*	-0.303867	-0.103564	0.388206	0.735539
			log2	0.913869	-0.802928	0.911496	0.389758
			None	0.863939	0.819669	0.774338	0.94328