CECS 457 – Titanic Project Report
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PROJECT REPORT

1. **GOAL:** To predict the survival of Titanic passengers. 0 & 1 for Survived & Not Survived respectively.
2. **PROBLEM DESCRIPTION:** In this project, we see how we can use machine-learning techniques to predict survivors of the Titanic. With a dataset of 891 individuals containing features like sex, age, and class, we attempt to predict the survivors of a small test group of 418. Compare different machine learning techniques like Naïve Bayes, SVM, decision tree analysis, etc.
3. **PROCEDURE:** Here I have simply deployed the various models with default parameters and see which one yields the best result. The models can further be tuned for better performance. Missing values are filled by calculating the mean. I have implemented the following models and got the accuracy as mentioned below in the table.

Score	Model
92.82	Random Forest
92.82	Decision Tree
86.64	KNN
81.82	Support Vector Machines
81.59	Logistic Regression
80.25	Perceptron
78.00	Naive Bayes
75.20	Stochastic Gradient Decent

Random Forest and Decision Tree fetches the highest accuracy of 92.82%. I tried to increase the performance of Random Forest by hyper tuning the parameters, after tuning the parameters I got the accuracy as 94.11%

4. **CONCLUSION:** As you can see, we get decent accuracy with all our models, but the best one is Random Forest. We conclude from our analysis from the Titanic dataset, that more males would have survived if most of them belonged to upper-class or age is below 18.