***Superior University***

**PAI Lab task 02**

Submitted by:

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Roll No:

**SU92-BSAIM-F23-004**

Program:

**Artificial Intelligence**

Submitted to:

**Sir Rasikh**

**Spaceship Titanic**

**Introduction:**

This project aims to predict which passengers on the Spaceship Titanic will be transported to another dimension. By using machine learning, we analyze past passenger data to train a model that makes accurate predictions. The goal is to develop a reliable model that classifies passengers based on different factors like their travel details, age, spending, and more.

**Files Name:**

**train.csv** – The main dataset used to train the model, containing passenger details and whether they were transported or not.

**test.csv** – A dataset without labels, used for testing and making predictions.

**submission.csv** – The final predictions generated by the trained model.

**sample\_submission.csv** – A sample file showing the expected format for submission.

**Assignment no 2 Spaceship\_titanic.ipynb** – A Jupyter Notebook with a step-by-step breakdown of how the model was built.

**spaceship.ipynb** – Another notebook, possibly containing alternative methods or improvements.

**SS Titanic.PNG** – An image showing the model’s performance score.

**How the Project Works**

**Step 1: Preparing the Data**

* Load and explore the dataset.
* Clean missing values to ensure high-quality data.
* Select important features that influence passenger classification.

**Step 2: Training the Model**

* Train multiple machine learning models.
* Compare their performance and select the most accurate one.
* Fine-tune the model’s parameters for better results.

**Step 3: Making Predictions**

* Use the best model to predict passenger outcomes for the test data.
* Save the results in **submission.csv** for final evaluation.

**Results**

* The model achieved a **score of 0.78536**, as seen in the submission screenshot.
* Further improvements can be made by testing different algorithms, refining data features, or tweaking model settings.

