**Titanic Classification : Build a predictive model to determine the likelihood of survival for passengers on the Titanic using data science techniques in Python**.

import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.ensemble import RandomForestClassifier

from sklearn.metrics import accuracy\_score, classification\_report

from sklearn.preprocessing import LabelEncoder

# Load the dataset

data = pd.read\_csv('titanic.csv')

# Data preprocessing

data.drop(['PassengerId', 'Name', 'Ticket', 'Cabin'], axis=1, inplace=True)

data['Age'].fillna(data['Age'].median(), inplace=True)

data['Embarked'].fillna(data['Embarked'].mode()[0], inplace=True)

encoder = LabelEncoder()

data['Sex'] = encoder.fit\_transform(data['Sex'])

data['Embarked'] = encoder.fit\_transform(data['Embarked'])

# Feature selection

X = data.drop('Survived', axis=1)

y = data['Survived']

# Splitting the dataset into training and testing sets

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

# Model training

model = RandomForestClassifier(n\_estimators=100, random\_state=42)

model.fit(X\_train, y\_train)

# Model evaluation

y\_pred = model.predict(X\_test)

print("Accuracy:", accuracy\_score(y\_test, y\_pred))

print(classification\_report(y\_test, y\_pred))