# Assignment:-Lab assignment(codetantra)

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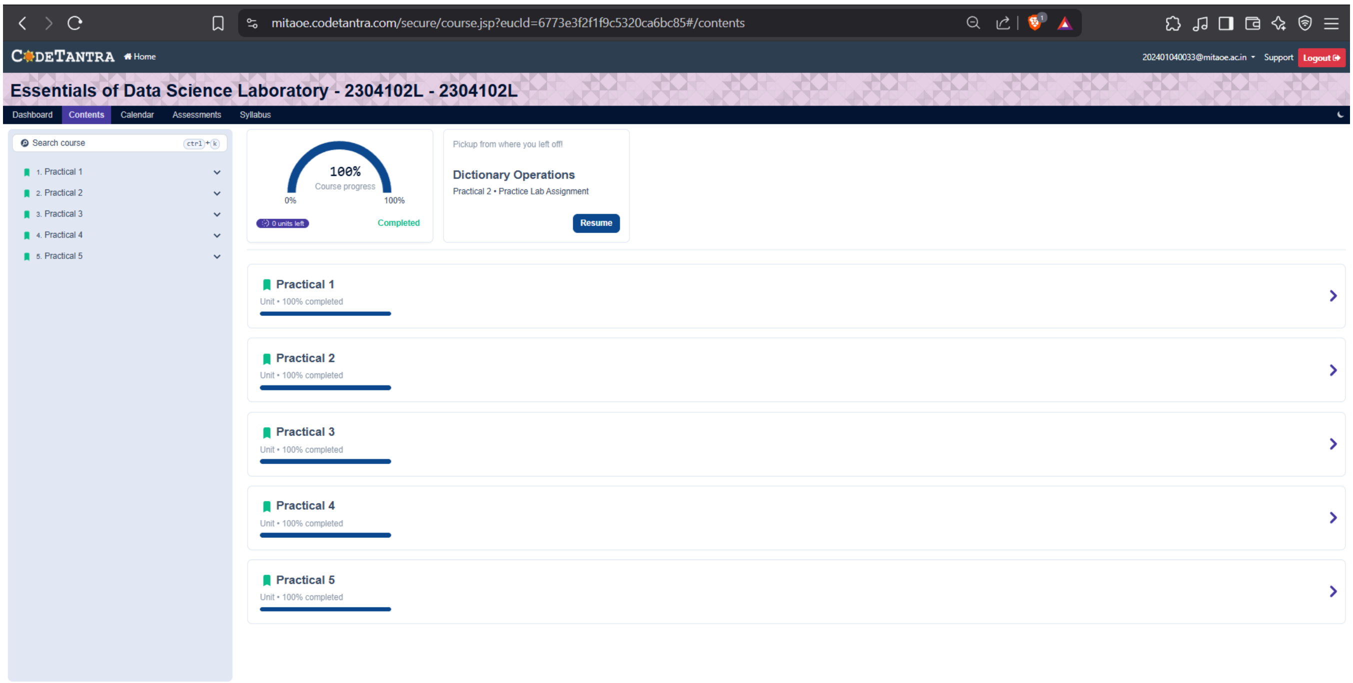
Screenshots of lab assignment completion



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Essentials of Data Science Laboratory - 2304102L - 2304102L

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5. Practical 5

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0 units left
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Dictionary Operations
Practical 2 • Practice Lab Assignment

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Unit • 100% completed

Practical 2
Unit • 100% completed

Practical 3
Unit • 100% completed

Practical 4
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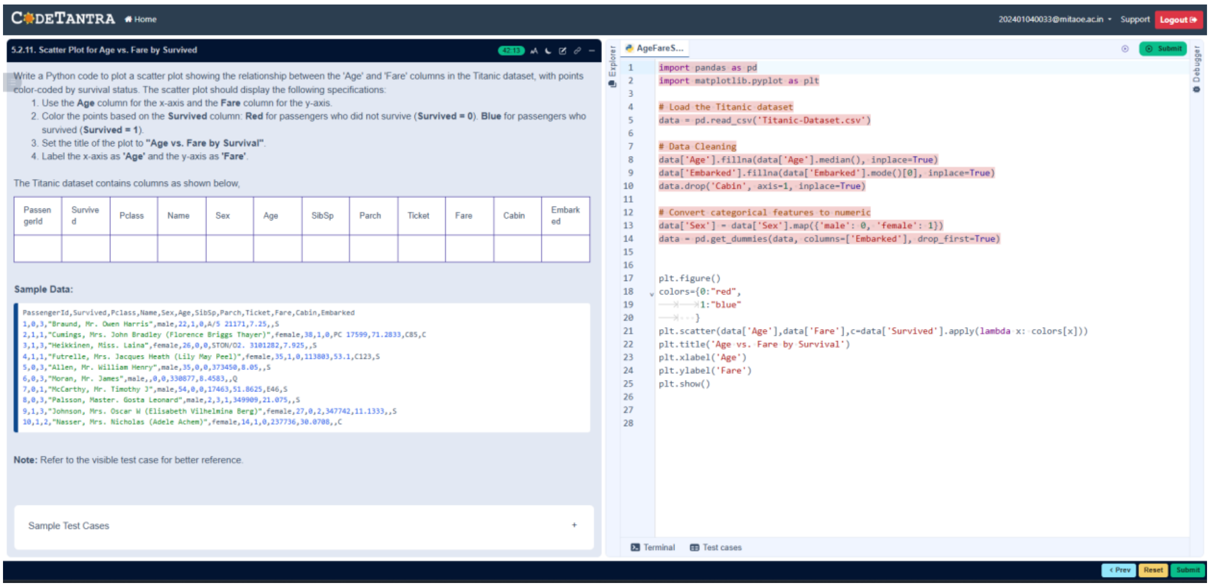


### 5.2.11. Scatter Plot for Age vs. Fare by Survived

Write a Python code to plot a scatter plot showing the relationship between the 'Age' and 'Fare' columns in the Titanic dataset, with points color-coded by survival status. The scatter plot should display the following specifications:

1. Use the **Age** column for the x-axis and the **Fare** column for the y-axis.
2. Color the points based on the **Survived** column: **Red** for passengers who did not survive (**Survived = 0**). **Blue** for passengers who survived (**Survived = 1**).
3. Set the title of the plot to **"Age vs. Fare by Survival"**.
4. Label the x-axis as **'Age'** and the y-axis as **'Fare'**.

The Titanic dataset contains columns as shown below,

| PassengerId | Survived | Pclass | Name | Sex | Age | SibSp | Parch | Ticket | Fare | Cabin | Embarked |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

**Sample Data:**

```
PassengerId,Survived,Pclass,Name,Sex,Age,SibSp,Parch,Ticket,Fare,Cabin,Embarked
1,0,3,"Braund, Mr. Owen Harris",male,22,1,0,A/5 21171,7.25,,S
2,1,1,"Cumings, Mrs. John Bradley (Florence Briggs Thayer)",female,38,1,0,PC 17599,71.2833,C85,C
3,1,3,"Heikkinen, Miss. Laina",female,26,0,0,STON/O2. 3101282,7.925,,S
4,1,1,"Futrelle, Mrs. Jacques Heath (Lily May Peel)",female,35,1,0,113803,53.1,C123,S
5,0,3,"Allen, Mr. William Henry",male,35,0,0,373450,8.05,,S
6,0,3,"Moran, Mr. James",male,,0,0,330877,8.4583,,Q
7,0,1,"McCarthy, Mr. Timothy J",male,54,0,0,17463,51.8625,E46,S
8,0,3,"Palsson, Master. Gosta Leonard",male,2,3,1,349909,21.075,,S
9,1,3,"Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)",female,27,0,2,347742,11.1333,,S
10,1,2,"Nasser, Mrs. Nicholas (Adele Achem)",female,14,1,0,237736,30.0708,,C
```

**Note:** Refer to the visible test case for better reference.

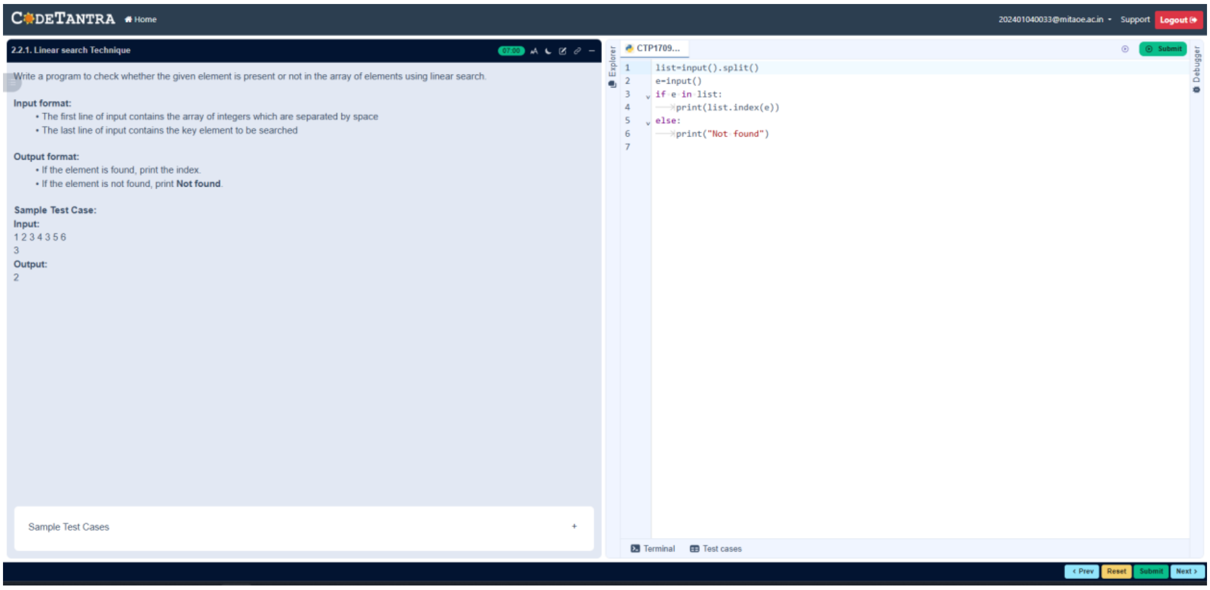
```python
import pandas as pd
import matplotlib.pyplot as plt

# Load the Titanic dataset
data = pd.read_csv('Titanic-Dataset.csv')

# Data Cleaning
data['Age'].fillna(data['Age'].median(), inplace=True)
data['Embarked'].fillna(data['Embarked'].mode()[0], inplace=True)
data.drop('Cabin', axis=1, inplace=True)

# Convert categorical features to numeric
data['Sex'] = data['Sex'].map({'male': 0, 'female': 1})
data = pd.get_dummies(data, columns=['Embarked'], drop_first=True)


plt.figure()
colors={0:"red",
        1:"blue"
    }
plt.scatter(data['Age'],data['Fare'],c=data['Survived'].apply(lambda x: colors[x]))
plt.title('Age vs. Fare by Survival')
plt.xlabel('Age')
plt.ylabel('Fare')
plt.show()
```



### 2.2.1. Linear search Technique

Write a program to check whether the given element is present or not in the array of elements using linear search.

**Input format:**

- The first line of input contains the array of integers which are separated by space
- The last line of input contains the key element to be searched

**Output format:**

- If the element is found, print the index.
- If the element is not found, print **Not found**.

**Sample Test Case:**

**Input:**

1 2 3 4 3 5 6
3

**Output:**

2

```python
list=input().split()
e=input()
if e in list:
    print(list.index(e))
else:
    print("Not found")
```