

PRACTICAL 5

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CODETANTRA Home

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5.1.1. Stacked Plot

02:32

Write your code...

12 df = pd.DataFrame(data)

13

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15 plt.stackplot(df['Month'],df['City_A_Temperature'],df['City_B_Temperature'],df['City_C_Temperature'])

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17 plt.xlabel('Month')

18 plt.ylabel('Temperature')

19 plt.title('Temperature Variation')

20 plt.legend(loc='upper left')

21 plt.show()

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5.2.2. Histogram of passenger information of Titanic

05:00

Write a Python code to plot a histogram for the distribution of the 'Age' column from the Titanic dataset. The histogram should display the frequency of different age ranges with the following specifications:
1. Use 30 bins for the histogram.
2. Set the edge color of the bars to black (k).
3. Label the x-axis as 'Age' and the y-axis as 'Frequency'.
4. Add the title "Age Distribution" to the histogram.

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

Sample Test Cases

Histogram...

Submit

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plt.xlabel('Age')

plt.ylabel('Frequency')

plt.show()

Average time
0.444 s
444.00 ms

Maximum time
0.444 s
444.00 ms

1 out of 1 shown test case(s) passed

Test case 1
444 ms

Debug

Expected output

Actual output

Age Distribution

Age Distribution

Terminal

Test cases

26°C
Clear

Search

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5.2.3. Bar plot of survival rate of passengers

05:00

Write a Python code to plot a bar chart that shows the count of passengers who survived and did not survive in the Titanic dataset. The chart should display the following specifications:
1. Use the 'Survived' column to show the count of survivors (0 = Did not survive, 1 = Survived).
2. Set the chart type to 'bar'.
3. Add the title "Survival Count" to the chart.
4. Label the x-axis as 'Survived' and the y-axis as 'Count'.

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,"Cummings, Mrs. John Bradley (Florence Briggs Thayer)",female,38,1,0,PC 17599,71.2833,CB5,(

Sample Test Cases

BarPlotOf...

Submit

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Write your code here for Bar Plot for Survival

survival_counts = data['Survived'].value_counts()
survival_counts.plot(kind='bar')

plt.title('Survival Count')

plt.xlabel('Survived')

plt.ylabel('Count')

plt.show()

Average time
0.602 s
602.00 ms

Maximum time
0.602 s
602.00 ms

1 out of 1 shown test case(s) passed

Test case 1
602 ms

Debug

Expected output

Actual output

Survival Count

Survival Count

Terminal

Test cases

26°C
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5.2.4. Bar Plot for Survival by Gender04:00

Write a Python code to plot a stacked bar chart that shows the count of passengers who survived and did not survive, grouped by gender, in the Titanic dataset. The chart should display the following specifications:

- Group the data by the 'Sex' column, then use the `value_counts()` function to count the occurrences of survivors (0 = Did not survive, 1 = Survived) for each gender.
- Use a **stacked bar chart** to display the survival counts.
- Add the title "Survival by Gender" to the chart.
- Label the x-axis as 'Gender' and the y-axis as 'Count'.
- The legend should indicate 'Not Survived' and 'Survived'.

The Titanic dataset contains columns as shown below,

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	ParCh	Ticket	Fare	Cabin	Embarked

Sample Data:

Sample Test Cases

BarPlotOf...

18#Write your code here for Bar Plot for Survival by Gender
19survival_counts = data.groupby('Sex')
20['Survived'].value_counts().unstack()
21survival_counts.plot(kind='bar',stacked=True)
22
23plt.title('Survival by Gender')
24plt.xlabel('Gender')
25plt.ylabel('Count')
26plt.legend(['Not Survived','Survived'])
27plt.show()

Average time0.631 sMaximum time0.631 s1 out of 1 shown test case(s) passed

Test case 10.631 ms

Expected outputActual output

Survival by GenderSurvival by Gender

TerminalTest cases

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5.2.5. Bar Plot for Survival by Pclass00:45

Write a Python code to plot a stacked bar chart that shows the count of passengers who survived and did not survive, grouped by passenger class (Pclass), in the Titanic dataset. The chart should display the following specifications:

- Group the data by the `Pclass` column and count the number of survivors (0 = Did not survive, 1 = Survived) for each class using `value_counts()`.
- Use a **stacked bar chart** to display the survival counts.
- Add the title "Survival by Pclass" to the chart.
- Label the x-axis as 'Pclass' and the y-axis as 'Count'.
- The legend should indicate 'Not Survived' and 'Survived'.

The Titanic dataset contains columns as shown below,

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	ParCh	Ticket	Fare	Cabin	Embarked

Sample Data:

Sample Test Cases

BarPlotOf...

16#Write your code here for Bar Plot for Survival by Pclass
17survival_counts = data.groupby('Pclass')
18['Survived'].value_counts().unstack().fillna(0)
19
20survival_counts.plot(kind='bar',stacked=True)
21
22plt.title('Survival by Pclass')
23plt.xlabel('Pclass')
24plt.ylabel('Count')
25
26plt.legend(['Not Survived','Survived'])
27plt.show()

Average time0.624 sMaximum time0.624 s1 out of 1 shown test case(s) passed

Test case 10.624 ms

Expected outputActual output

Survival by PclassSurvival by Pclass

TerminalTest cases

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CODETANTRAHome

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5.2.6. Bar Plot for Survival by Embarked

00:43

Write a Python code to plot a stacked bar chart showing the survival count for passengers based on their embarkation location in the Titanic dataset.
The chart should display the following specifications:
1. Use the **Embarked** column to determine the embarkation location. After converting this column into dummy variables (using **pd.get_dummies()**), plot the survival count based on the **Embarked_Q** column (representing passengers who embarked from Queenstown) in relation to survival.
2. Set the chart type to 'bar' and make it stacked.
3. Add the title "Survival by Embarked" to the chart.
4. Label the x-axis as 'Embarked' and the y-axis as 'Count'.
5. Include a legend to distinguish between survivors and non-survivors (label the legend as 'Survived' and 'Not Survived').

The Titanic dataset contains columns as shown below.

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

Sample Test Cases

BarPlotOf...

16# Write your code here for Bar Plot for Survival by Embarked

17survival_counts = data.groupby('Embarked_Q')[

18['Survived'].value_counts().unstack().fillna(0)

19

20survival_counts.plot(kind = 'bar',stacked = True)

21plt.title('Survival by Embarked')

22plt.xlabel('Embarked')

23plt.ylabel('Count')

24plt.legend(['Not Survived','Survived'])

25plt.show()

26

Average time0.600 s600.00 msMaximum time0.600 s600.00 ms1 out of 1 shown test case(s) passed

Test case 1500 ms

Expected output

Actual output

Survival by Embarked

Survival by Embarked

TerminalTest cases

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5.2.7. Box plot for Age Distribution

00:46

Write a Python code to plot a boxplot that shows the distribution of the 'Age' column from the Titanic dataset across different passenger classes. The boxplot should display the following specifications:
1. Use the **Pclass** column to group the data for the boxplot.
2. Set the title of the plot to "Age by Pclass".
3. Remove the default subtitle with **plt.suptitle('')**.
4. Label the x-axis as 'Pclass' and the y-axis as 'Age'.

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,"Cummings, Mrs. John Bradley (Florence Briggs Thayer)",female,38,1,0,PC 17599,71.2833,C85,(

Sample Test Cases

BoxPlotf...

16# Write your code here for Box Plot for Age by Pclass

17data.boxplot(column = 'Age', by='Pclass')

18plt.title('Age by Pclass')

19plt.suptitle('')

20plt.xlabel('Pclass')

21plt.ylabel('Age')

22plt.show()

23

24

25

26

Average time0.461 s461.00 msMaximum time0.461 s461.00 ms1 out of 1 shown test case(s) passed

Test case 1461 ms

Expected output

Actual output

Age by Pclass

Age by Pclass

TerminalTest cases

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5.2.8. Box Plot for Age by Survived

00:40

Write a Python code to plot a boxplot that shows the distribution of the 'Age' column from the Titanic dataset based on whether passengers survived or not. The boxplot should display the following specifications:
1. Use the **Survived** column to group the data for the boxplot (0 = Did not survive, 1 = Survived).
2. Set the title of the plot to **"Age by Survival"**.
3. Remove the default subtitle with **plt.suptitle("")**.
4. Label the x-axis as **"Survived"** and the y-axis as **"Age"**.

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

Sample Test Cases

BoxPlotF...

151617181920212223242526

Write your code here for Box Plot for Age by Survived
plt.figure(figsize=(8,6))
data.boxplot(column='Age',by='Survived')
plt.title('Age by Survival')
plt.suptitle('')
plt.xlabel('Survived')
plt.ylabel('Age')
plt.show()
#

Average time0.516 sMaximum time0.516 s1 out of 1 shown test case(s) passed

Test case 1<10 ms

Expected output

Actual output

Age by Survival

Age by Survival

TerminalTest cases

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5.2.9. Box Plot for Fare by Pclass

00:38

Write a Python code to plot a boxplot that shows the distribution of the 'Fare' column from the Titanic dataset based on the passenger class (Pclass). The boxplot should display the following specifications:
1. Use the **Pclass** column to group the data for the boxplot.
2. Set the title of the plot to **"Fare by Pclass"**.
3. Remove the default subtitle with **plt.suptitle("")**.
4. Label the x-axis as **"Pclass"** 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

Sample Test Cases

BoxPlotF...

141516171819202122232425

data = pd.get_dummies(data, columns=['Embarked'], drop_first=True)

Write your code here for Box Plot for Fare by Pclass
plt.figure(figsize=(8,6))
data.boxplot(column='Fare',by='Pclass')
plt.title('Fare by Pclass')
plt.suptitle('')
plt.xlabel('Pclass')
plt.ylabel('Fare')
plt.show()
#

Average time0.528 sMaximum time0.528 s1 out of 1 shown test case(s) passed

Test case 1<50 ms

Expected output

Actual output

Fare by Pclass

Fare by Pclass

TerminalTest cases

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5.2.10. Scatter Plot for Age vs. Fare01:07

Write a Python code to plot a scatter plot showing the relationship between the 'Age' and 'Fare' columns in the Titanic dataset. 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. Set the title of the plot to **"Age vs. Fare"**.
3. 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
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	
3	1	3	"Heikkinen, Miss. Laina"	female	26	0	0	STON/O2. 3101282	7.925	S	
4	1	1	"Foster, Mr. James Heath (Miss Max Beale)"	female	35	1	0	113803	53.1	C173	

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,
3, 1, 3, "Heikkinen, Miss. Laina", female, 26, 0, 0, STON/O2. 3101282, 7.925, S,
4, 1, 1, "Foster, Mr. James Heath (Miss Max Beale)", female, 35, 1, 0, 113803, 53.1, C173, S
```

Sample Test Cases

AgeFareS...

data = pd.get_dummies(data, columns=['Embarked'], drop_first=True)

Write your code here for Box Plot for Fare by Pclass

plt.figure()

plt.scatter(data['Age'], data['Fare'])

plt.title('Age vs. Fare')

plt.xlabel('Age')

plt.ylabel('Fare')

plt.show()

Average time0.473 s473.00 msMaximum time0.473 s473.00 ms1 out of 1 shown test case(s) passed

Test case 1473 ms

Expected output

Actual output

TerminalTest cases

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5.2.11. Scatter Plot for Age vs. Fare by Survived00:51

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
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	
3	1	3	"Heikkinen, Miss. Laina"	female	26	0	0	STON/O2. 3101282	7.925	S	
4	1	1	"Foster, Mr. James Heath (Miss Max Beale)"	female	35	1	0	113803	53.1	C173	

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,
3, 1, 3, "Heikkinen, Miss. Laina", female, 26, 0, 0, STON/O2. 3101282, 7.925, S,
4, 1, 1, "Foster, Mr. James Heath (Miss Max Beale)", female, 35, 1, 0, 113803, 53.1, C173, S
```

Sample Test Cases

AgeFareS...

colors = data['Survived'].map({0: 'red', 1: 'blue'})

plt.scatter(data['Age'], data['Fare'], c=colors)

plt.title('Age vs. Fare by Survival')

plt.xlabel('Age')

plt.ylabel('Fare')

plt.show()

Average time0.469 s469.00 msMaximum time0.469 s469.00 ms1 out of 1 shown test case(s) passed

Test case 1469 ms

Expected output

Actual output

TerminalTest cases

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