

Screenshots of Codes

Problem 1: First five and last five rows

```

1 import pandas as pd
2 data1= {'Student': ['Ice Bear', 'Panda', 'Grizzly'], 'Math': [80, 95, 79]}
3 data2= {'Student': ['Ice Bear', 'Panda', 'Grizzly'], 'Electronics': [85, 81, 83]}
4 data3= {'Student': ['Ice Bear', 'Panda', 'Grizzly'], 'GEAS': [90, 79, 93]}
5 data4= {'Student': ['Ice Bear', 'Panda', 'Grizzly'], 'ESAT': [93, 89, 88]}
6
7 math= pd.DataFrame(data1, columns= ['Student', 'Math'])
8 electronics= pd.DataFrame(data2, columns= ['Student', 'Electronics'])
9 esat= pd.DataFrame(data4, columns= ['Student', 'ESAT'])
10 geas= pd.DataFrame(data3, columns= ['Student', 'GEAS'])
11
12 merge= pd.merge(math,electronics, on='Student')
13 merge1= pd.merge(merge, esat, on='Student')
14 bear_grades= pd.merge(merge1, geas, on='Student')
15
16 longbear = pd.melt(bear_grades, id_vars= 'Student', value_vars= ['Math','Electronics','ESAT','GEAS'])
17 newbear_grades = longbear.rename(columns= {'variable':'Subject', 'value':'Grades'})
18

```

Editor Window

Index	Student	Math
0	Ice Bear	80
1	Panda	95
2	Grizzly	79

Index	Student	Electronics
0	Ice Bear	85
1	Panda	81
2	Grizzly	83

Index	Student	ESAT
0	Ice Bear	93
1	Panda	89
2	Grizzly	88

Index	Student	GEAS
0	Ice Bear	90
1	Panda	79
2	Grizzly	93

DataFrames

merge - DataFrame

Index	Student	Math	Electronics
0	Ice Bear	80	85
1	Panda	95	81
2	Grizzly	79	83

merge1 - DataFrame

Index	Student	Math	Electronics	ESAT
0	Ice Bear	80	85	93
1	Panda	95	81	89
2	Grizzly	79	83	88

Format Resize ☒ Background color ☒ Column min/max Save and Close Close

Merging Process

bear_grades - DataFrame

Index	Student	Math	Electronics	ESAT	GEAS
0	Ice Bear	80	85	93	90
1	Panda	95	81	89	79
2	Grizzly	79	83	88	93

Format Resize ☒ Background color ☒ Column min/max Save and Close Close

Merged DataFrames

Index	Student	variable	value
0	Ice Bear	Math	80
1	Panda	Math	95
2	Grizzly	Math	79
3	Ice Bear	Electronics	85
4	Panda	Electronics	81
5	Grizzly	Electronics	83
6	Ice Bear	ESAT	93
7	Panda	ESAT	89
8	Grizzly	ESAT	88
9	Ice Bear	GEAS	90
10	Panda	GEAS	79
11	Grizzly	GEAS	93

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Long Format

Index	Student	Subject	Grades
0	Ice Bear	Math	80
1	Panda	Math	95
2	Grizzly	Math	79
3	Ice Bear	Electronics	85
4	Panda	Electronics	81
5	Grizzly	Electronics	83
6	Ice Bear	ESAT	93
7	Panda	ESAT	89
8	Grizzly	ESAT	88
9	Ice Bear	GEAS	90
10	Panda	GEAS	79
11	Grizzly	GEAS	93

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Renamed Columns

Problem 2:

```
Exp9Prob1.py Exp9Prob2.py*
1 import pandas as pd
2 data = {'Box': ['Box1', 'Box1', 'Box1', 'Box2', 'Box2', 'Box2'], 'Dimension': ['Length', 'Width', 'Height',
3 'Length', 'Width', 'Height'], 'Value': [6, 4, 2, 5, 3, 4]}
4 messy = pd.DataFrame(data, columns= ['Box', 'Dimension', 'Value'])
5 tidy = messy.pivot_table(index=['Box'], columns='Dimension', values='Value')
6 tidyfinal = messy.pivot_table(index=['Box'], columns='Dimension', values='Value').reset_index()
7 tidyfinal['Volume'] = tidyfinal.Height*tidyfinal.Length*tidyfinal.Width
8
```

Editor Window

messy - DataFrame

Index	Box	Dimension	Value
0	Box1	Length	6
1	Box1	Width	4
2	Box1	Height	2
3	Box2	Length	5
4	Box2	Width	3
5	Box2	Height	4

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Messy DataFrame

Index	Height	Length	Width
Box1	2	6	4
Box2	4	5	3

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Tidy DataFrame

Index	Box	Height	Length	Width	Volume
0	Box1	2	6	4	48
1	Box2	4	5	3	60

Format Resize ☒ Background color ☒ Column min/max Save and Close Close

Tidy DataFrame with Volume