Homework Solutions

1. Write a Python program to create a simple DataFrame with two columns (‘Name’ and ‘Age’) and populate it with data. Then print the entire DataFrame.

In [ ]:
```
import pandas as pd

# create a dictionary containing data for 'Name' and 'Age' columns
data = {'Name': ['Aarav', 'Aarya', 'Aadi', 'Aalia', 'Aamir'],
        'Age': [22, 25, 28, 31, 34]}

# create a DataFrame from the dictionary
df = pd.DataFrame(data)

# print the entire DataFrame
print(df)
```

```
    Name  Age
0  Aarav   22
1  Aarya   25
2   Aadi   28
3  Aalia   31
4  Aamir   34
```

1. Create a pandas dataframe with the following data:

```
 Name  Age  Gender
0  John   25    Male
1  Jane   30  Female
2  Mark   20    Male
```

In [ ]:
```
import pandas as pd

data = {'Name': ['John', 'Jane', 'Mark'],
        'Age': [25, 30, 20],
        'Gender': ['Male', 'Female', 'Male']}
```

```
df = pd.DataFrame(data)
print(df)
```

```
   Name  Age  Gender
0  John   25    Male
1  Jane   30  Female
2  Mark   20    Male
```

1. To select only some of the items in the dictionary, use the index argument and specify only the items you want to include in the Series.
   vitamin = {"day1": 420, "day2": 380, "day3": 390}

In [ ]:

```
import pandas as pd

# create a dictionary containing data for the Series
vitamin = {"day1": 420, "day2": 380, "day3": 390}

# create a Series from the dictionary and select only 'day1' and 'day3' items
series = pd.Series(vitamin, index=['day1', 'day3'])

# print the resulting Series
print(series)
```

```
day1    420
day3    390
dtype: int64
```

1. Add a panda series to another series using append()
   a=[12,23,65,87]
   b=[78,52,33,61]

In [ ]:

```
import pandas as pd

a = [12, 23, 65, 87]
b = [78, 52, 33, 61]

# Convert lists to pandas series
a_series = pd.Series(a)
b_series = pd.Series(b)

# Append b_series to a_series
result_series = a_series.append(b_series)
```

```
print(result_series)
```

```
0    12
1    23
2    65
3    87
0    78
1    52
2    33
3    61
dtype: int64
```

1. use the concat() to combine the following arrays

```
series_1 = pd.Series([2, 4, 6, 8])
series_2 = pd.Series([10, 12, 14, 16])
```

In [ ]:

```
import pandas as pd

series_1 = pd.Series([2, 4, 6, 8])
series_2 = pd.Series([10, 12, 14, 16])

result_series = pd.concat([series_1, series_2])
print(result_series)
```

```
0     2
1     4
2     6
3     8
0    10
1    12
2    14
3    16
dtype: int64
```

1. Create a pandas series with the following data:

```
0    10
1    20
2    30
```

```
3    40
dtype: int64
```

In [ ]:

```
import pandas as pd

data = [10, 20, 30, 40]
series = pd.Series(data)
print(series)
```

```
0    10
1    20
2    30
3    40
dtype: int64
```

1. Create a pandas series with the following data and index labels:

```
a    10
b    20
c    30
d    40
dtype: int64
```

In [ ]:

```
import pandas as pd

data = [10, 20, 30, 40]
labels = ['a', 'b', 'c', 'd']
series = pd.Series(data, index=labels)
print(series)
```

```
a    10
b    20
c    30
d    40
dtype: int64
```

1. Create a pandas series from a dictionary with the following data:

```
{'a': 10, 'b': 20, 'c': 30, 'd': 40}
```

In [ ]:

```
import pandas as pd

data = {'a': 10, 'b': 20, 'c': 30, 'd': 40}
series = pd.Series(data)
print(series)
```

```
a    10
b    20
c    30
d    40
dtype: int64
```