Nurse Staffing Recommendations

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abstract   This is an abstract.

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[...]

Imports

```python
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from IPython.display import Markdown

from src.stylesheet import customize_plots
from src.inspection import make_df, display
```

The dataset
[...]

```python
if 'data' not in locals():
    data = pd.read_csv(
        "../data/raw/PBJ_Daily_Nurse_Staffing_Q1_2024.csv",
        encoding='ISO-8859-1'
    )
else:
    print("data loaded.")
```

```
data loaded.
```

```
data.sample(5)
```

PROVNUM	PROVNAME	CITY	STATE	COUNTY-TY-NAME	COUNTY-TY-FIPS	CY-Q	WorkDate	MDS-Census	RN-ScenDON	...	Hrs_PCNA_ctr	Hrs_KNA_emp	Crs_CNA_ctr	Hrs	Hrs	Wk	Md	Amd	Amp_ctr
426830	KANSAS CITY MEDICAL RESORT A PTR OF THE UNIV OF KANSAS	KANSAS CITY	KS	Wyandotte	1755440	2020	2024Q2 20240219	3	0.0	...	0.0	141.72	141.72	0.0	0.0	0.0	0.0	10.24 10.24	0.0
274200	TWIN LAKES REHAB & HEALTH CARE	PARIS	IL	Edgar	1454860	45	2024Q2 20240113	1	8.0	...	0.0	74.55	74.55	0.0	0.0	0.0	0.0	0.00 0.00	0.0
1128781	CONSULATE HEALTH CARE OF WOODSTOCK	WOODSTOCK	VA	Shenandoah	495315	17	2024Q2 20240113	9	8.0	...	0.0	138.25	138.25	0.0	0.0	0.0	0.0	0.00 0.00	0.0
666589	DELTA LAKE-SOUTHTON NURSING & REHABILITATION	New Madrid	MO		265806	143	2024Q2 20240114	8	12.5	...	0.0	119.25	119.25	0.0	0.0	0.0	0.0	6.00 6.00	0.0
1087486	VISTA BAY POST ACUTE	HAYWARD	CA	Alameda	05564	1	2024Q2 20240106	4	8.0	...	0.0	173.92	173.92	0.0	0.0	0.0	0.0	0.00 0.00	0.0

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1330966 entries, 0 to 1330965
Data columns (total 33 columns):
 #   Column           Non-Null Count    Dtype
---  ------           --------------    -----
 0   PROVNUM          1330966 non-null  object
 1   PROVNAME         1330966 non-null  object
 2   CITY             1330966 non-null  object
 3   STATE            1330966 non-null  object
 4   COUNTY_NAME      1330966 non-null  object
 5   COUNTY_FIPS      1330966 non-null  int64
 6   CY_Qtr           1330966 non-null  object
 7   WorkDate         1330966 non-null  int64
 8   MDScensus        1330966 non-null  int64
 9   Hrs_RNDON        1330966 non-null  float64
 10  Hrs_RNDON_emp    1330966 non-null  float64
 11  Hrs_RNDON_ctr    1330966 non-null  float64
 12  Hrs_RNadmin      1330966 non-null  float64
 13  Hrs_RNadmin_emp  1330966 non-null  float64
 14  Hrs_RNadmin_ctr  1330966 non-null  float64
 15  Hrs_RN           1330966 non-null  float64
 16  Hrs_RN_emp       1330966 non-null  float64
 17  Hrs_RN_ctr       1330966 non-null  float64
 18  Hrs_LPNadmin     1330966 non-null  float64
 19  Hrs_LPNadmin_emp 1330966 non-null  float64
 20  Hrs_LPNadmin_ctr 1330966 non-null  float64
 21  Hrs_LPN          1330966 non-null  float64
 22  Hrs_LPN_emp      1330966 non-null  float64
 23  Hrs_LPN_ctr      1330966 non-null  float64
 24  Hrs_CNA          1330966 non-null  float64
 25  Hrs_CNA_emp      1330966 non-null  float64
 26  Hrs_CNA_ctr      1330966 non-null  float64
 27  Hrs_NAtrn        1330966 non-null  float64
 28  Hrs_NAtrn_emp    1330966 non-null  float64
 29  Hrs_NAtrn_ctr    1330966 non-null  float64
 30  Hrs_MedAide      1330966 non-null  float64
 31  Hrs_MedAide_emp  1330966 non-null  float64
 32  Hrs_MedAide_ctr  1330966 non-null  float64
dtypes: float64(24), int64(3), object(6)
memory usage: 335.1+ MB
```

```
data.describe()
```

SQL

```sql
CREATE TABLE employees (
    id INT PRIMARY KEY,
    name VARCHAR(50),
    position VARCHAR(50)
);
```

```sql
INSERT INTO employees (id, name, position)
VALUES (1, 'Alice Johnson', 'Software Engineer'),
       (2, 'Bob Smith', 'Data Analyst'),
       (3, 'Charlie Brown', 'Project Manager');
```

```sql
SELECT name
FROM employees
```

Bibliography