Florence Nightingale

A Pioneer in Statistics and Data Visualisation

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Early Life

- Born on May 12, 1820 in Florence Italy.
- Affluent British family belonged to elite social circles.
- In 1844 she became a nursing student at Lutheran Hospital of Pastor Fliedner in Kaiserwerth, Germany.
- By 1850 Florence became the superintendent of Middlesex Hospital.

Figure 1: Florence Nightingale Museum

Crimean War

- Crimean War begins 1853.
- By 1845 more than 18,000 British soldiers were admitted into military hospitals.
- Late 1845 Nightingale organizes nurses corps.
- Reduced deaths by over two-thirds.
  - More soldiers were dying from infectious diseases than from injuries in battle.
  - Turnaround is largely due to Nightingale's strict sanitary measures.

Figure 2: 'Lady of the Lamp' portrait from Illustrated London News Feb 24, 1855

Nightingale's Contribution to Mathematics

- Nightingale collected data throughout her time in Crimea.
- Nightingale wanted to use statistics to transform hospital care.

Figure 3: Improved conditions in military hospital in Crimea, 1856

Figure 4: Nightingale receiving soldiers, 1856

Nightingale's Contribution to Mathematics

- The 'Batwing' Diagram (Polar Line)
- The 'Coxcomb' Diagram (Polar Area)

- First huge breakthrough in the power of infographics.
- Ideal for Time series, Directional data, Categorical data.

Modern Data Visualisation Demo

- With the tools today data visualization is easy.

- Data Dashboard demo

- Jupyter Notebook and data available <u>here.</u>