

SIT384 Cyber security analytics

Credit Task 4.2C: Visualize data with grouped bar chart and stacked bar chart

Task description:

According to “[Notifiable Data Breaches Report: July–December 2023](#)” released on 22 February 2024 on the Office of the Australian Information Commissioner (OAIC) [website](#), notifications made under [the NDB scheme](#) by the five sectors made the most notifications in the reporting period (from 1 July to 31 December 2023).

The following information is retrieved from the aforementioned report:

Malicious or criminal attack breaches – Top 5 sectors

Malicious or criminal attack breaches	Health service providers	Finance (Incl. superannuation)	Insurance	Retail	Australian Government
Cyber incident	38	14	12	27	1
Social engineering / impersonation	4	12	11	2	8
Rogue employee / insider threat	9	5	1	2	2
Theft of paperwork or data storage device	4	2	0	1	1

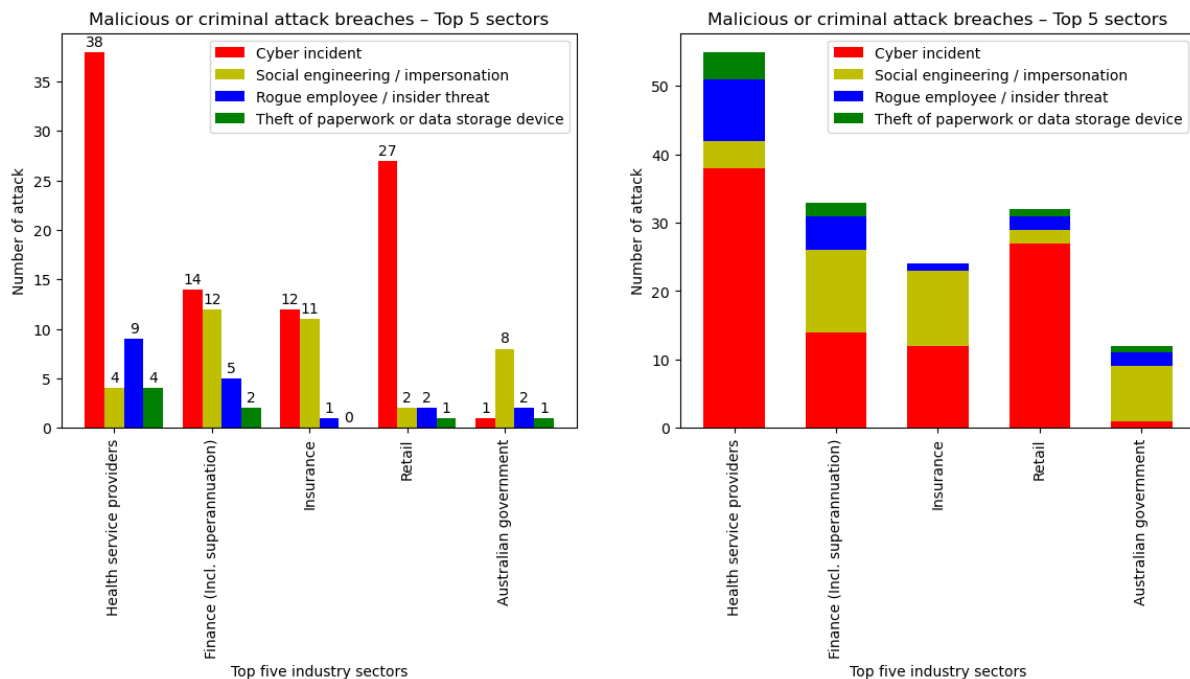
(The above data is for demonstration purposes only. Please download the full version of `Malicious_or_criminal_attacks_breakdown-Top_five_sectors_July-Dec-2023.csv`.)

You are asked to read the file data and visualize the data using matplotlib’s grouped bar chart and stacked bar chart with the following settings:

- `pd.read_csv('file_name', index_col=0, engine='python')`
- `plt.subplots(nrows=1, ncols=2, figsize=(14, 5), dpi=100)`
- `colors = ['red', 'yellow', 'blue', 'green']` for the four attack types: Cyber incident, Social engineering / impersonation, Rogue employee / insider threat, and Theft of paperwork or data storage device, respectively. Or color of your choice.
- `labels: attack types with rotation=90 ('Cyber incident', 'Social engineering / impersonation', 'Rogue employee', 'Theft of paperwork or data storage device')`
- `X axis: Top five industry sectors`

- Y axis label: Number of attack
- title: Malicious or criminal attack breaches – Top 5 sectors
- X axis with ticklabel and label rotation: 90
- Legend
- Show values on top of bars for grouped bar chart (hint: ax.bar_label() function)
- other settings of your choice

Sample output as shown in the following figure is for demonstration purposes only.



Submission:

Submit the following files to OnTrack:

1. Your program source code (e.g. task4_2.py)
2. A screen shot of your program running

Check the following things before submitting:

1. Add proper comments to your code