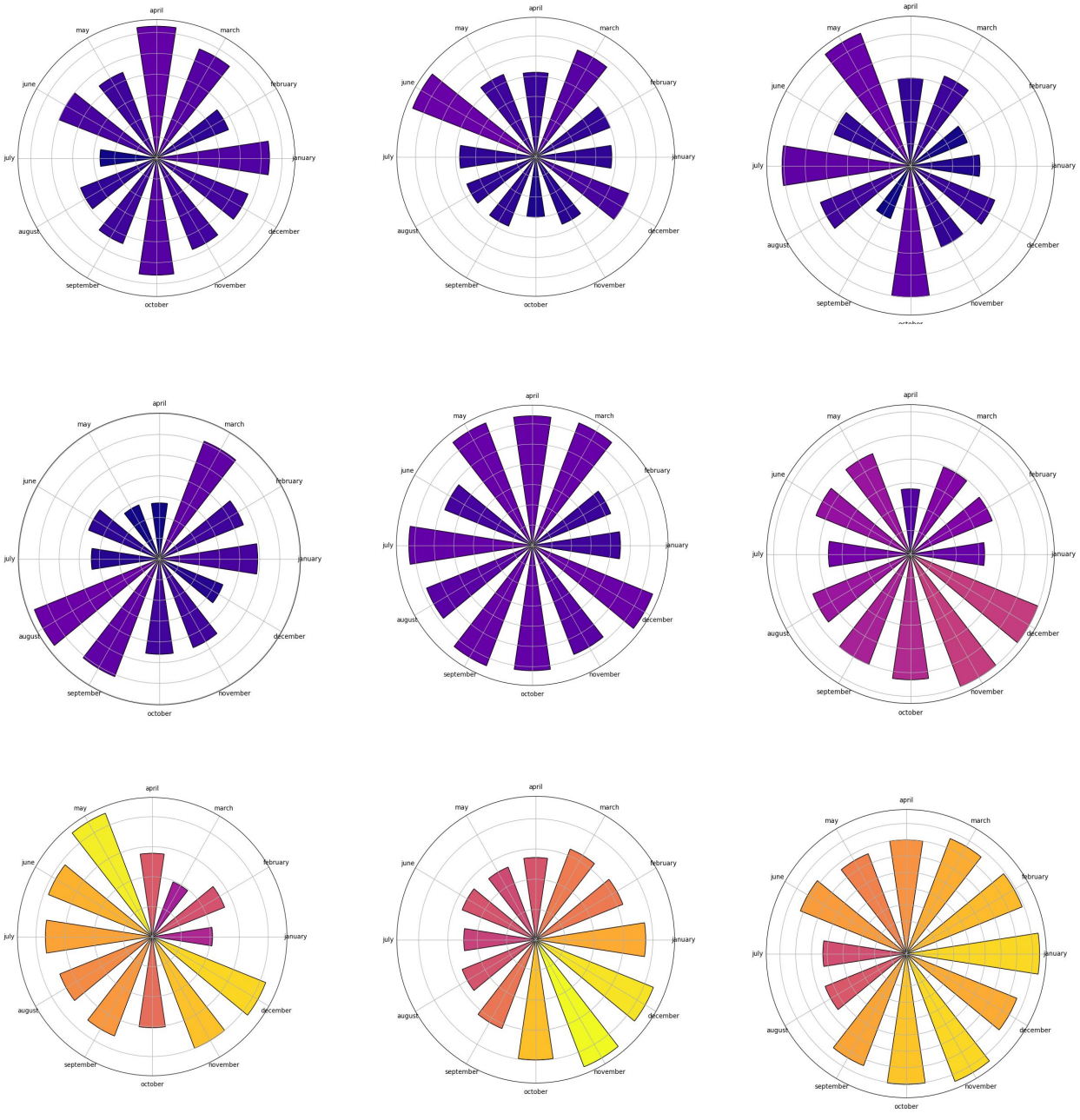
EDA cyber crime Leuven: reported incidents 2023-2014



Predicting Cybersecurity Incidents: Data Analysis

Before conducting the actual data analysis to predict cybercrime incidents, it's important to conduct some background research on the topic of cybercrime.

The question I like to answer is if there is a correlation in increased cybercrime activities and major high-tech product releases in the high tech industry?

Below, I've gathered information about major high-tech releases throughout the year. This is generally how a high-tech season looks like:

January:
- High-tech season kicks off with most high-tech companies sharing their latest innovations and future plans.

June:
- Companies start announcing new hardware releases, designs, and innovations.

September to October:
- The high-tech industry reaches its peak season with major product releases and technological advancements.

November to December:
- The focus shifts towards the holiday shopping season, with continued product releases and updates.

Join me on this journey and let’s find out what the grunts are up to. Stay put!

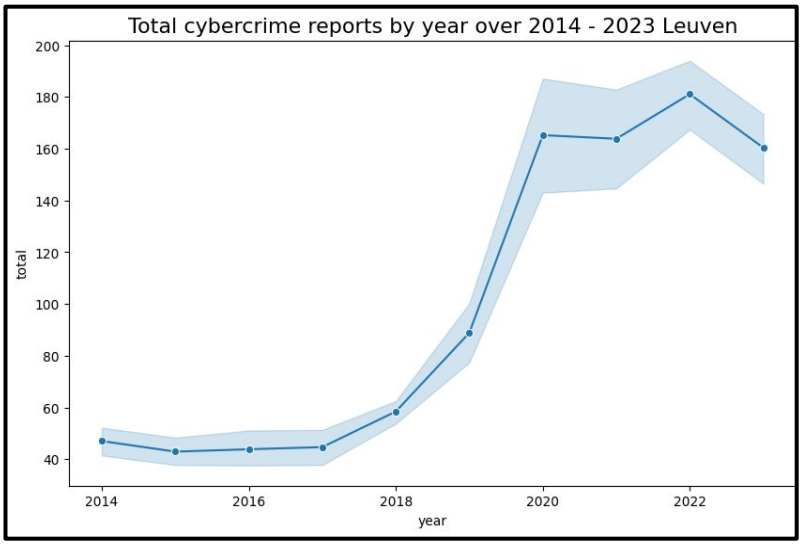
EDA Cybercrime Leuven

Data analysis of cybercrime reports 2023 - 2014

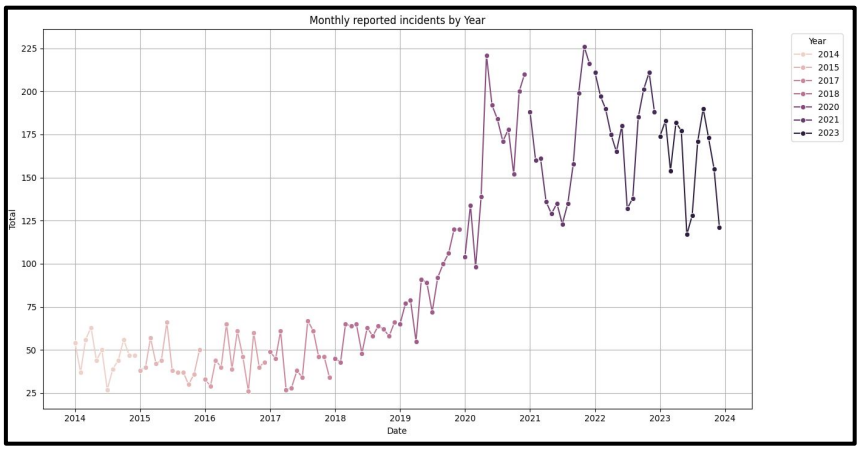
Key Insights

- Early on the EDA we can see an drastic increase in incident reports since 2018
- Since 2018 the incident report multiplied by over 10 times compared to 10 years ago.
- We also notice that there are times in the year where the reports are higher than at other times

Details



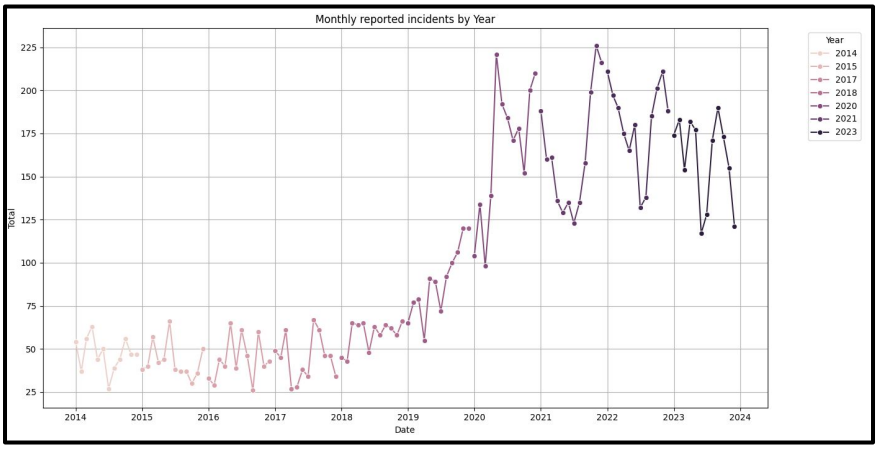
Next Steps



July 2024

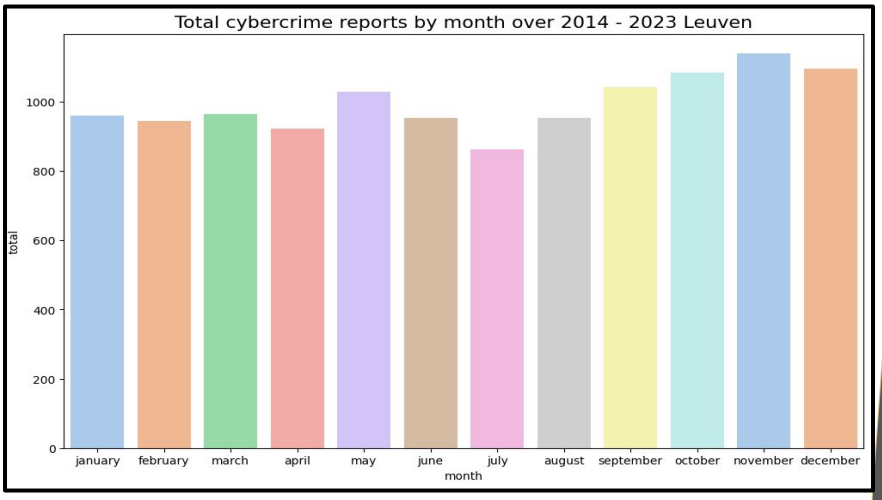
ISSUE / PROBLEM

We notice that some months have higher incident report than others. Discover trends and patterns in incident reports.



RESPONSE

On average, over a span of 10 years, there is a noticeable increase in cybercrime incident reports starting from July peaking towards November.



IMPACT

KEY INSIGHTS

Yearly Trends

- There is a noticeable increase in reported cybercrime incidents over the years, with 2023 having the highest number of incidents.

Monthly Patterns

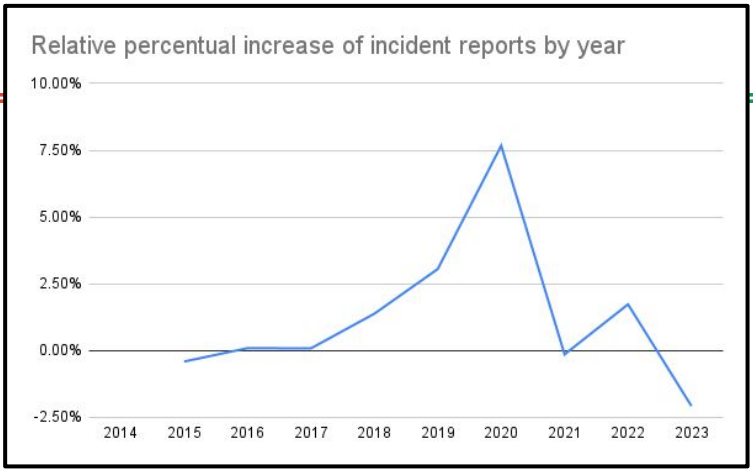
- Cybercrime reports tend to peak in November.

Seasonal Variations

- The lowest number of reports occurs in July, possibly due to fewer incidents being reported during the holiday season.

ISSUE / PROBLEM

Visualize the trends and patterns in the data

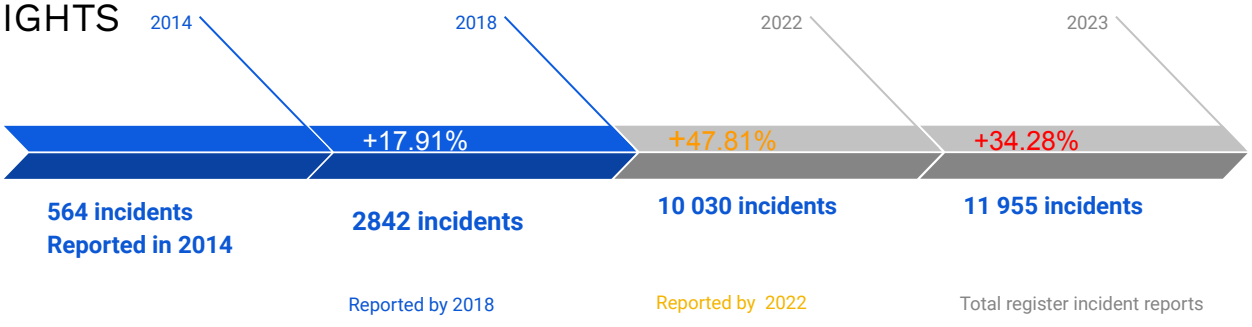


RESPONSE

Year	Total	Relative % Increase	Cumulative totals
2014	564	4.72%	564
2015	515	4.31%	1079
2016	526	4.40%	1605
2017	536	4.48%	2141
2018	701	5.86%	2842
2019	1066	8.92%	3908
2020	1983	16.59%	5891
2021	1966	16.45%	7857
2022	2173	18.18%	10030
2023	1925	16.10%	11955
Grand total	**11955**	**100.00**	**11955**

IMPACT

KEY INSIGHTS



July 2024

EDA Cybercrime Leuven

Data analysis of cybercrime reports 2023 - 2014

ISSUE / PROBLEM

Increased cyber crime incident reports at the Belgian Federal Police office.

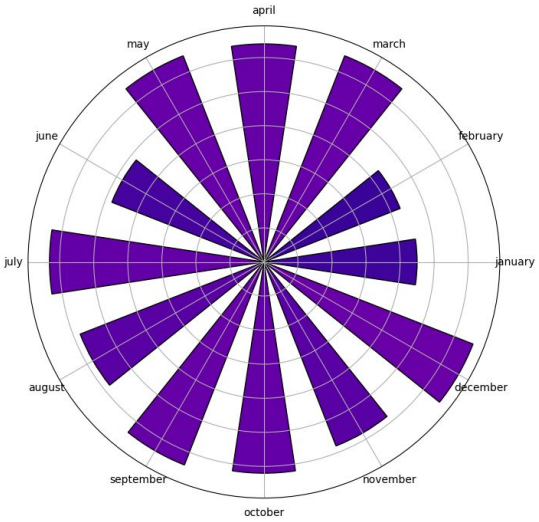
RESPONSE

Data science exploratory data analysis. Finding trends and patterns that are correlated with increase in cybercrime.

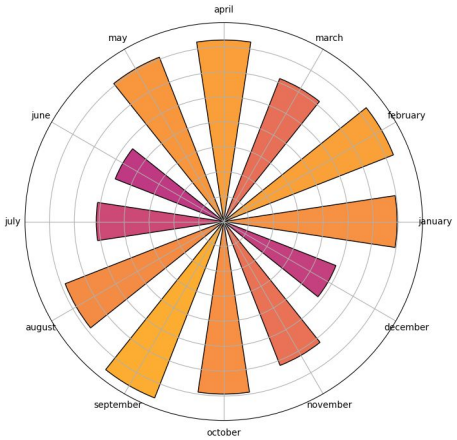
IMPACT

Raised awareness and increased alertness to prevent cybercrime.

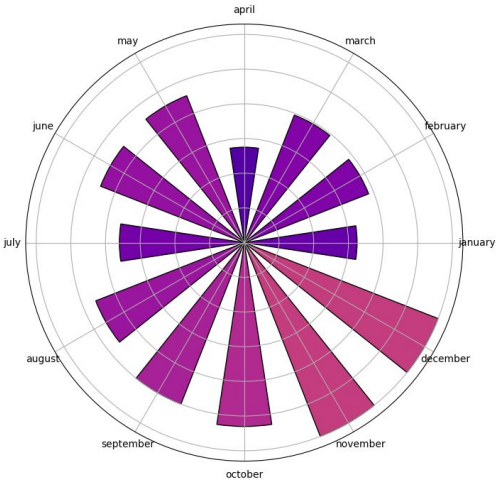
Monthly reported incidents for 2018



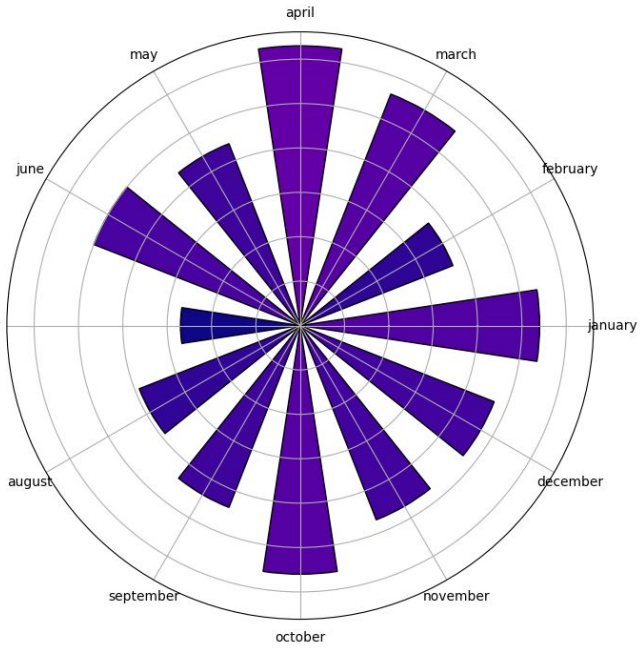
Monthly reported incidents for 2023



Monthly reported incidents for 2019



Monthly reported incidents for 2014



KEY INSIGHTS

Yearly Trends
- There is a noticeable increase in reported cybercrime incidents over the years, with 2023 having the highest number of incidents.

Monthly Patterns
- Cybercrime reports tend to peak in November, coinciding with major high-tech product releases.

Correlation with Product Releases
- There is a correlation between the timing of high-tech product releases and spikes in cybercrime incidents, suggesting that new product releases may attract more cybercrime activity.

Seasonal Variations
- The lowest number of reports occurs in July, possibly due to fewer incidents being reported during the holiday season.

July 2024

EDA Cybercrime Leuven

Data analysis of cybercrime reports 2023 - 2014

Project Overview
Conduct a simple EDA to visualize trends and patterns in data.

Key Insights

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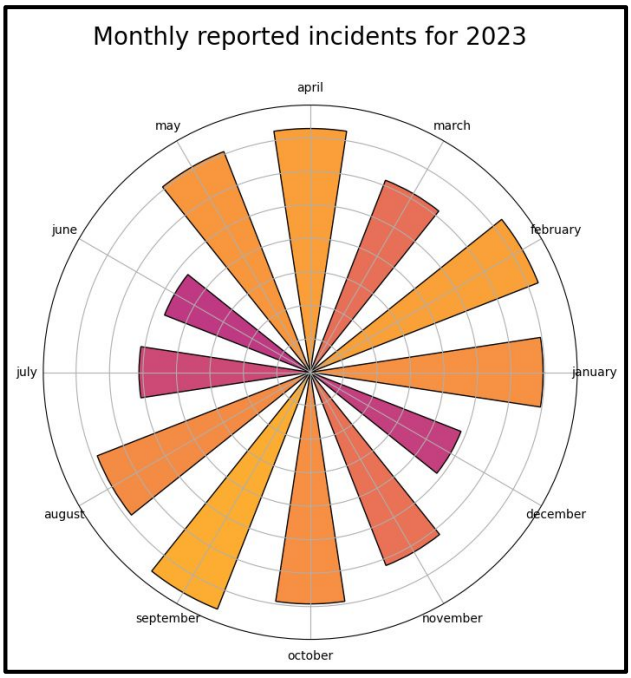

Next Steps

Next we will perform EDA in different cities and see if this is a local trend or a more widespread phenomenon.

We have to collect new data of various cities and repeat the process.

Comparing with High-Tech Product Release Times

- January

CES showcases new innovations, but cybercrime does not peak here, suggesting the need for continuous vigilance rather than a reactive approach.

- March-April

Spring events do not show significant cybercrime spikes, indicating that mid-year releases may not be as targeted.

- June

WWDC coincides with moderate cybercrime activity, recommending a focus on software-related security enhancements.

- September-October

Peak tech season aligns with increased cybercrime, emphasizing the need for heightened security during these months.

- November-December

Cybercrime peaks in November, aligning with holiday season releases, indicating the need for robust security measures during year-end.

Yearly Trends

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Recommendations

- ➔ Enhanced Security During Product Releases

High-tech companies should bolster their cybersecurity measures around major product release dates to mitigate potential spikes in cybercrime.

- ➔ Public Awareness Campaigns

Increase public awareness about the risks of cybercrime, especially during peak months like November.

- ➔ Continuous Monitoring

Implement continuous monitoring and rapid response strategies to quickly address any upticks in cybercrime incidents.

- ➔ Collaboration with Tech Companies

Law enforcement and cybersecurity agencies should collaborate with tech companies to anticipate and prepare for potential cyber threats during major tech events.

- ➔ Predictive Analytics

Utilize predictive models to forecast future cybercrime trends, allowing for proactive measures to be put in place.