

ASM 2

Group 5

I. General concept explanation

1.What is BI? (definition, explanation, example in the company)

- Business intelligence (BI) is a technology-driven process for analyzing data and delivering actionable information that helps executives, managers and workers make informed business decisions. As part of the BI process, organizations collect data from internal IT systems and external sources, prepare it for analysis, run queries against the data and create data visualizations, BI dashboards and reports to make the analytics results available to business users for operational decision-making and strategic planning.

B. Why Is Business Intelligence Important?

+ Now you know what Business Intelligence is, what it's capable of, but the question remains; why is Business Intelligence so important to modern-day organizations? The main reasons to invest in a solid BI strategy and system are:

- Gain New Customer Insights: One of the primary reasons companies are investing their time, money, and efforts into Business Intelligence is because it gives them a greater ability to observe and analyze current customer buying trends. Once you utilize BI to understand what your consumers are buying and the buying motive, you can use this information to create products and product improvements to meet their expectations and needs and, as a result, improve your organization's bottom-line

2. Some tools for BI

Ø Tableau

+Tableau is a new age business intelligence and data analytics platform. Advantages of Tableau :

- Flexibility and ease of use.
- The core strength is the interactive dashboard, which provides real-time data analysis and provides quick feedback.
- Provide attention-grabbing graphics (visualization) to represent data visually.
- Provides all the necessary capabilities to extract data, process data, present data, and share dashboards/final reports/spreadsheets with other decision makers.
- The main reason behind Tableau's popularity is its simple drag-and-drop functionality for visualization.
- Higher speed compared to other BI tools.
- Intuitive, a powerful self-service tool.
- Provides connectivity to many Big Data sources such as Teradata, Oracle, SAP HANA, Excel, MongoDB, JSON, Text Files, Amazon Redshift, Google Cloud, Hadoop, SQL, etc.

2. Some tools for BI

➤ Microsoft Power BIGGER

- Microsoft Power BI is a well known and powerful data visualization tool. This is a cloud-based software and comes in two versions; Power BI Mobile and Power BI Desktop. Advantages of Microsoft Power BI
- Microsoft Power BI is renowned for its easy-to-use functionality for data visualization and data preparation.
- It includes many visualization capabilities like creating natural language visualizations, custom visualizations, having Cortana personal assistant, etc.
- Microsoft Power BI provides connectivity to multiple data sources such as IBM, Oracle, SQL Server, Google Analytics, Salesforce, Azure DevOps, Excel, JSON, text files, Mailchimp, Zendesk, and more. It is also applicable to integration with big data sources. simple with direct connections by applying web services.

**II. Interpret and analyze
data, provide solutions**

2. Show and explain Dataset

System interface

```
PROBLEMS  OUTPUT  TERMINAL  JUPYTER  DEBUG CONSOLE

Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\BI_DATA> & C:/Users/ASUS/AppData/Local/Microsoft/WindowsApps/python3.10.exe c:/BI_DATA/Data_Processing.py

*****FILE CSV HANDING PROGRAM*****

-----The functions of the program-----
|                                     |
|      Enter (1) : Display data      |
|      Enter (2) : Merge data        |
|      Enter (3) : Display data was  |
|      Enter (4) : Clean data        |
|      Enter (5) : Exit              |
|                                     |
-----

> Enter choice: █
```

Figure 2.1: System interface at launch

1. Explain the data set collected

| | A | B | C | D | E |
|----|------------------|---------------|---|-------------|---|
| 1 | Account name | Sector | Reason for getting banned | Banned date | |
| 2 | yêu 999 em | North America | Hack map | 09/08/2021 | |
| 3 | trápboiz sî tink | North America | Hack map | 30/04/2021 | |
| 4 | ig quangteo2k1 | Vietnam | skill dodge tool | 14/01/2021 | |
| 5 | thanhlan17469 | North America | Hack map | 05/04/2021 | |
| 6 | FairyTail_Dragon | North America | skill dodge tool | 09/03/2021 | |
| 7 | biggie smalls | Vietnam | skill dodge tool | 03/03/2021 | |
| 8 | GPL Thần Chết | Korea | Hack the time the jungle monster appeared | 21/07/2021 | |
| 9 | Tiểu Hồ Đồ | Korea | skill dodge tool | 22/10/2021 | |
| 10 | A Trai Đồng Nai | North America | skill dodge tool | 17/05/2021 | |
| 11 | SE tiểu noway | Korea | Hack the time the jungle monster appeared | 22/06/2021 | |
| 12 | Quỳnh Bảii 2003 | Taiwan | skill dodge tool | 24/11/2021 | |

In the following data table, I mainly learn about the tools to support cheats in the game, in addition, there will also be a few other basic information of the player such as the account name, which region and the date it was banned. lock account

| | A | B | C | D | E | F | G |
|----|--------------------|---------------|--------------------|---------------------------------|-------------------|----------------|--------------------|
| 1 | Account name | Sector | Current rank level | Number of ranked matches played | number of defeats | number of wins | Most used generals |
| 2 | yêu 999 em | North America | Yellow | 637 | 350 | 287 | Jinx |
| 3 | trápboiz sĩ tink | North America | Diamond | 709 | 369 | 340 | Sion |
| 4 | ig quangteo2k1 | Vietnam | Yellow | 549 | 200 | 349 | Sion |
| 5 | thanhhan17469 | North America | Silver | 670 | 406 | 264 | Sion |
| 6 | FairyTail_Dragon | North America | Diamond | 573 | 373 | 200 | Sion |
| 7 | biggie smalls | Vietnam | Diamond | 553 | 200 | 353 | Sion |
| 8 | GPL Thần Chết | Korea | Yellow | 576 | 365 | 211 | Temmo |
| 9 | Tiểu Hồ Đồ | Korea | Yellow | 682 | 389 | 293 | Sion |
| 10 | A Trai Đồng Nai | North America | Yellow | 691 | 587 | 104 | Xerath |
| 11 | SE tiểu noway | Korea | Silver | 583 | 420 | 163 | Jinx |
| 12 | Quỳnh Bả Bii 2003 | Taiwan | Yellow | 692 | 310 | 382 | Xerath |
| 13 | FB Trrrong Lê Đình | Korea | Silver | 485 | 311 | 174 | Jinx |

In this second data sheet I will focus a lot on stats as well as information related to locked accounts such as: Current rank, number of ranked matches played, number of wins and losses, champions most used history when playing...

| 1 | Account name | Sector | Current rank level | Number of ranked matches played | number of defeats | number of wins | Most used generals | Reason for getting banned | Banned date |
|----|-------------------|---------------|--------------------|---------------------------------|-------------------|----------------|--------------------|---|-------------|
| 2 | yêu 999 em | North America | Yellow | 637 | 350 | 287 | Jinx | Hack map | 09/08/2021 |
| 3 | trápboiz sĩ tink | North America | Diamond | 709 | 369 | 340 | Sion | Hack map | 30/04/2021 |
| 4 | ig quangteo2k1 | Vietnam | Yellow | 549 | 200 | 349 | Sion | skill dodge tool | 14/01/2021 |
| 5 | thanh17469 | North America | Silver | 670 | 406 | 264 | Sion | Hack map | 05/04/2021 |
| 6 | FairyTail_Dragon | North America | Diamond | 573 | 373 | 200 | Sion | skill dodge tool | 09/03/2021 |
| 7 | biggie smalls | Vietnam | Diamond | 553 | 200 | 353 | Sion | skill dodge tool | 03/03/2021 |
| 8 | GPL Thần Chết | Korea | Yellow | 576 | 365 | 211 | Temmo | Hack the time the jungle monster appeared | 21/07/2021 |
| 9 | Tiểu Hồ Đồ | Korea | Yellow | 682 | 389 | 293 | Sion | skill dodge tool | 22/10/2021 |
| 10 | A Trai Đồng Nai | North America | Yellow | 691 | 587 | 104 | Xerath | skill dodge tool | 17/05/2021 |
| 11 | SE tiểu noway | Korea | Silver | 583 | 420 | 163 | Jinx | Hack the time the jungle monster appeared | 22/06/2021 |
| 12 | Quỳnh BaBii 2003 | Taiwan | Yellow | 692 | 310 | 382 | Xerath | skill dodge tool | 24/11/2021 |
| 13 | FB Trương Lê Đình | Korea | Silver | 485 | 311 | 174 | Jinx | skill dodge tool | 12/05/2021 |
| 14 | Đẹp Trai Nhất Xóm | Korea | Diamond | 621 | 311 | 310 | Jinx | skill dodge tool | 27/01/2021 |
| 15 | Đức Mẹ Đồng Trinh | Korea | Diamond | 643 | 526 | 117 | Jinx | Hack the time the jungle monster appeared | 05/08/2021 |
| 16 | toi_love_ai | Korea | Copper | 588 | 343 | 245 | Sion | skill dodge tool | 12/06/2021 |
| 17 | Bích Duyên ADC | Taiwan | Diamond | 710 | 340 | 370 | Jinx | Hack the time the jungle monster appeared | 25/03/2021 |
| 18 | Jack Chuan | North America | Yellow | 401 | 250 | 222 | Malist | Hack the time the jungle monster appeared | 01/12/2021 |

From those 2 original files, using Python we have merged these 2 data files into 1 new file containing data about locked accounts in 2021 of 4 regions of China, Vietnam, Taiwan and Korea. Country that I collect. Key data related to locked accounts include Account Name, Region, Current Rating, Rating of Played Matches, Frequently Played Matches, Most Used Heroes, Reason for Locked, locked date and win rate in the game. With this data, I will focus on exploitable information such as current rank, most used champion, reason for being locked, and win rate. With how to use the data and give the solution, I will talk later

1. Displays data and displays errors in data

```
*****FILE CSV HANDING PROGRAM*****
-----The functions of the program-----
|                                     |
|   Enter (1) : Display data         |
|   Enter (2) : Merge data          |
|   Enter (3) : Display data was merged |
|   Enter (4) : Clean data          |
|   Enter (5) : Exit                |
|                                     |
-----
> Enter choice: 1

+ You have chosen: Display data
+ Choice:
    1. Display: Show country, player win rate
    2. Display: Show information about banned players
    3. Exit function.
> Enter choice: |
```

To display and use data the user needs to select option 1 , There are 2 options:

- 1. Display: Show country, player win rate
- 2. Display: Show information about banned players

Display : Show contry , playerer banned reasonreason

```
+ choice:
    1. Display: Show country, player Banned reason
    2. Display: Display player information
    3. Exit function.
> Enter choice: 1
Enter number of rows display: 10

+ You choose to read the file with the path:C:\BI_DATA\Data_ASM2\hackgame_contry.csv
File content:
Account name      |Sector      |Banned reason    |Banned date      |
-----
yau 999 em        |North America|Hack map         |09/08/2021       |
trapboiz sa tank  |North America|Hack map         |30/04/2021       |
ig quangteo2k1    |Vietnam      |skill dodge tool |14/01/2021       |
thanhan17469      |North America|Hack map         |05/04/2021       |
FairyTail Dragon  |North America|skill dodge tool |09/03/2021       |
biggie smalls     |Vietnam      |skill dodge tool |03/03/2021       |
GPL Than Chat     |Korea        |Hack the time    |21/07/2021       |
Tiau Ha aa        |Korea        |skill dodge tool |22/10/2021       |
```

Figure 2.3: Displaying information about the country, ranked matches played, player win rate in 1 year

Display: Display player information

```
+ Choice:
    1. Display: Show country, player Banned reason
    2. Display: Display player information
    3. Exit function.
> Enter choice: 2
Enter number of rows display: 10

+ You choose to read the file with the path:C:\BI_DATA\Data_ASM2\hackgame_info.csv
File content:
Account name |Sector|Current rank level |Ranked matches |number of defeats |number of wins |Most used generals |
-----|-----|-----|-----|-----|-----|-----|
yau 999 em |North America|Yellow|637|350|287|Jinx|
trapboiz sa tank |North America|Diamond|709|369|340|Sion|
ig quangteo2k1 |Vietnam|Yellow|549|200|349|Sion|
thanhan17469 |North America|Silver|670|406|264|Sion|
FairyTail Dragon |North America|Diamond|573|373|200|Sion|
biggie smalls |Vietnam|Diamond|553|200|353|Sion|
GPL Than Chat |Korea|Yellow|576|365|211|Temmo|
Tiau Ha aa |Korea|Yellow|682|389|293|Sion|
A Trai aang Nai |North America|Yellow|691|587|104|Xerath|
SE tiau noway |Korea|Silver|583|420|163|Jinx|

+ You have chosen: Display data
```

Figure 2.3: Displays information about account name, rack, regular battles, ranked matches played, most used champions, reason for ban, player's ban date in 1 year

2. Option 2 merges data from 2 tables

To merge data from 2 tables the user needs to choose option 2 ; The interface will display the columns that will be included in the new data. When the user chooses to agree, the system will create a new data file with the columns shown above, the "success" message appears, the file has been initialized, if not, the system will return. menu interface

```
*****FILE CSV HANDING PROGRAM*****
-----The functions of the program-----
|                                     |
| Enter (1) : Display data           |
| Enter (2) : Merge data             |
| Enter (3) : Display data was merged|
| Enter (4) : Clean data             |
| Enter (5) : Exit                   |
|                                     |
-----
> Enter choice: 2

+ You have chosen: Display data was merged
+ The new file will have the following columns:
-----
|Account name   |Sector      |Banned reason |Banned date  |Current rank level|Ranked matches |number of defeats |number of wins |
|-----|-----|-----|-----|-----|-----|-----|-----|
> Confirm file creation(yes/no): yes
+ The file has been created successfully : C:\BI_DATA\Data_ASM2\hackgame_new.csv
+ Time created      : 20:59:16.429427
> Write file successful !!!
```

Figure 2.4 : The data below has been merged

3. Show merged data

To display the newly merged file in the above step, the user needs to choose option 3 to display the merged data.

```
*****FILE CSV HANDLING PROGRAM*****
-----The functions of the program-----
|                                     |
| Enter (1) : Display data           |
| Enter (2) : Merge data             |
| Enter (3) : Display data was merged|
| Enter (4) : Clean data             |
| Enter (5) : Exit                   |
|                                     |
-----
> Enter choice: 3
+ You have chosen: Display data was merged
+ With path: C:\BI_DATA\Data_ASM2\hackgame_new.csv
File content:
Account name |Sector|Banned reason|Banned date|Current rank level|Ranked matches|number of defeats|number of wins|
-----
yau 999 em |North America|Hack map|09/08/2021|Yellow|637|350|287|
trapboiz sa tank |North America|Hack map|30/04/2021|Diamond|709|369|340|
ig quangteo2k1 |Vietnam|skill dodge tool|14/01/2021|Yellow|549|200|349|
thanhan17469 |North America|Hack map|05/04/2021|Silver|670|406|264|
FairyTail Dragon |North America|skill dodge tool|09/03/2021|Diamond|573|373|200|
biggie smalls |Vietnam|skill dodge tool|03/03/2021|Diamond|553|200|353|
GPL Than Chat |Korea|Hack the time|21/07/2021|Yellow|576|365|211|
Tiau Ha aa |Korea|skill dodge tool|22/10/2021|Yellow|682|389|293|
A Trai aang Nai |North America|skill dodge tool|17/05/2021|Yellow|691|587|104|
SE tiau noway |Korea|Hack the time|22/06/2021|Silver|583|420|163|
```

Figure 2.5 : Display of data that has been merged into a table

4. Clean data

To delete a character, the user needs to select the number 4 to delete, enter the character to be deleted and select the number of rows that you want to see in the sample data has been changed, the selected character will be deleted, the empty cell will be deleted. replace with NaN

```
*****FILE CSV HANDING PROGRAM*****
-----The functions of the program-----
|                                     |
|      Enter (1) : Display data      |
|      Enter (2) : Merge data        |
|      Enter (3) : Display data was merged |
|                                     |
> Enter character you want to remove: em
+ The file has been created successfully : C:\BI_DATA\Data_ASM2\hackgame_new.csv
+ Time created      : 21:01:57.539188
> Write file successful !!!
+ File after cleaning:
  > Empty space      : [ ] will replace by NaN
  > Special characters: [em] will remove
Enter number of rows display: 10
File content:
Account na      |Sctor      |Bannd rason      |Bannd dat      |Currrt rank lvl |Rankd atchs      |nubr of dfats      |nubr of wins      |
-----|-----|-----|-----|-----|-----|-----|-----|
yau 999          |North Arica  |Hack ap          |09/08/2021      |Yllow           |637              |350               |287               |
trapboiz sa tank |North Arica  |Hack ap          |30/04/2021      |Diaond          |709              |369               |340               |
ig quangto2k1    |Vitna        |skill dodg tool  |14/01/2021      |Yllow           |549              |200               |349               |
thanhan17469     |North Arica  |Hack ap          |05/04/2021      |Silvr           |670              |406               |264               |
FairyTail Dragon |North Arica  |skill dodg tool  |09/03/2021      |Diaond          |573              |373               |200               |
biggi salls      |Vitna        |skill dodg tool  |03/03/2021      |Diaond          |553              |200               |353               |
GPL Than Chat    |Kora         |Hack th ti       |21/07/2021      |Yllow           |576              |365               |211               |
Tiau Ha aa       |Kora         |skill dodg tool  |22/10/2021      |Yllow           |682              |389               |293               |
A Trai aang Nai  |North Arica  |skill dodg tool  |17/05/2021      |Yllow           |691              |587               |104               |
SE tiau noway    |Kora         |Hack th ti       |22/06/2021      |Silvr           |583              |420               |163               |
> Clean data successful !!!
```

Figure 2.5 : The “em” character has been removed from the data

5. Exit

```
*****FILE CSV HANDING PROGRAM*****
```

```
-----The functions of the program-----
```

```
|                                     Enter (1) : Display data  
|                                     Enter (2) : Merge data  
|                                     Enter (3) : Display data was merged  
|                                     Enter (4) : Clean data  
|                                     Enter (5) : Exit
```

```
-----  
> Enter choice: 5
```

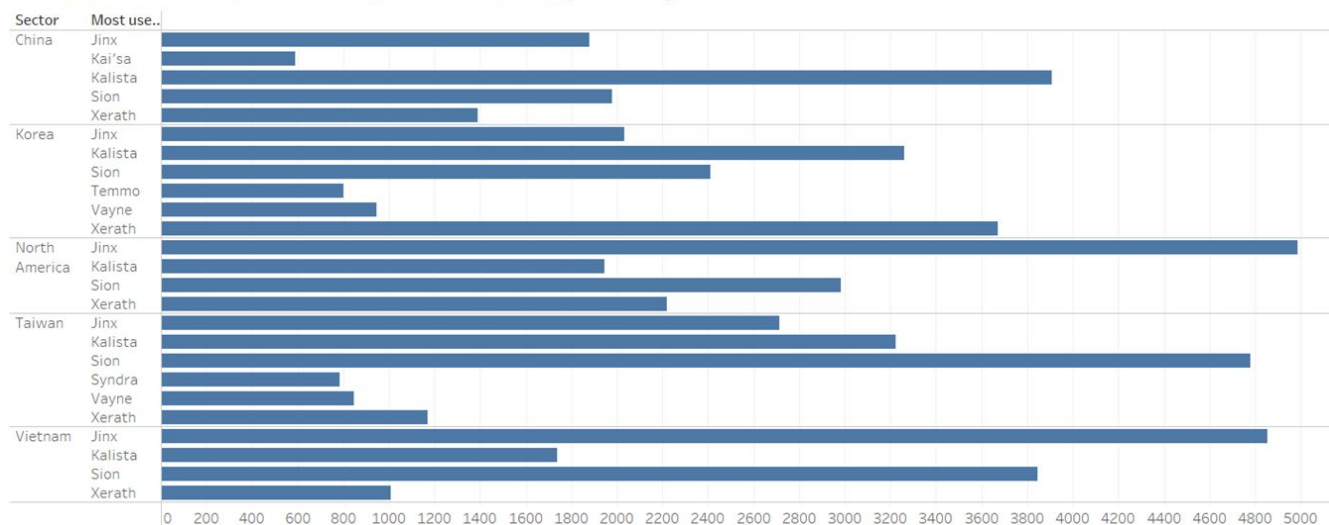
```
> Goodbye !!!
```

```
PS C:\BI_DATA> █
```

3. Draw graphs, analyze, and come up with solutions

3.1. The number of champions often used when hacking each region

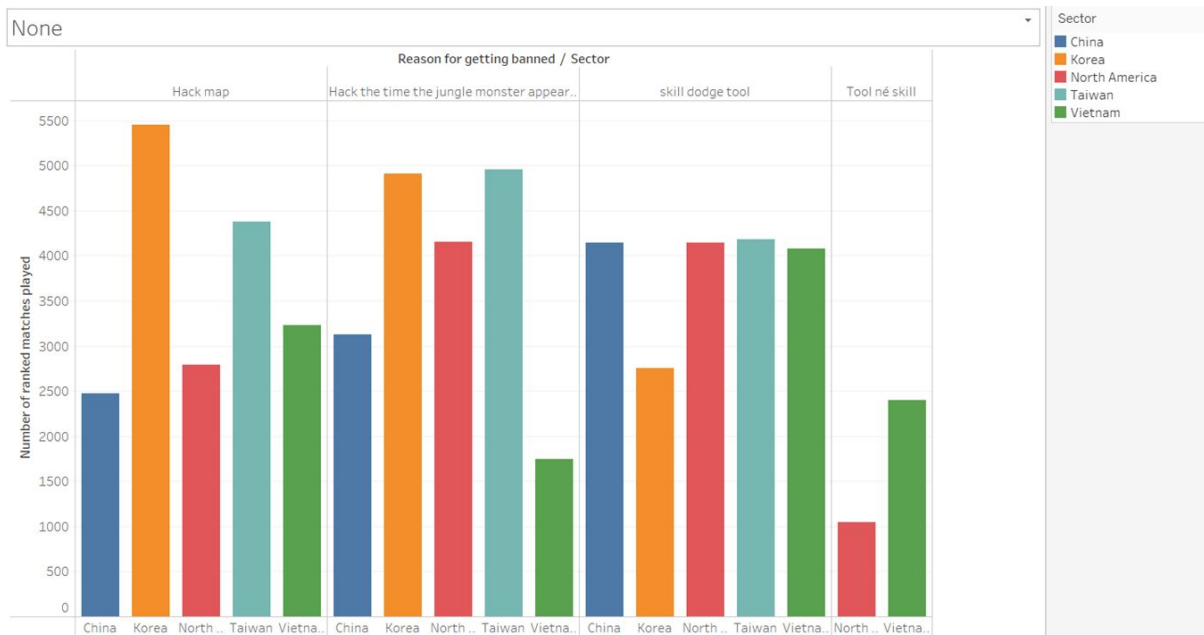
The number of champions often used when hacking each region



They have gathered and are aware of specific player data from accounts that have been locked as a result of hacking, including current rank, matches played, and champions that are most frequently utilized. When employing hacking tool software, take into account the rank and champions that cheating games typically use. For instance, users of third-party applications frequently have champions or low ranks. Sion, Xerath, and Jinx are champions that are frequently used when playing; why? is due to the fact that if the player utilizes the hack tool, such champions will reach absolute strength and become more difficult to kill than other champions, which we want to filter out accounts with the aforementioned symptoms and check them after alerting the personnel to do so...

3. Draw graphs, analyze, and come up with solutions

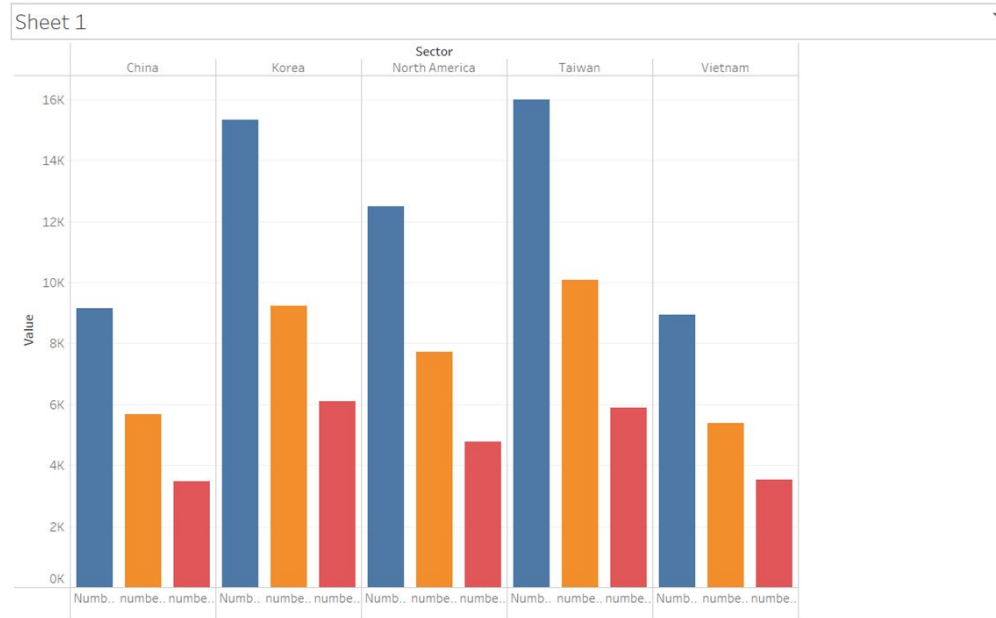
3.2. Sector and Reason for getting banned



We will be able to identify the most common categories of hacking tools today with the information on the reasons for the ban. We will perform a search and evaluation of the websites that direct you to install the hack tool and properly comprehend how it functions after learning which hacking tools are utilized the most. of that tool software to the company's IT staff so they may prepare to develop an appropriate anti-tool tool with the fewest potential vulnerabilities.

3. Draw graphs, analyze, and come up with solutions

3.3. Win rate by region



Regarding the win percentage by region graph above: Each banned players win percentage in the game can be seen to be not terrible, with most win rates below 50%. Green represents the number of games played, orange the number of losses, and red the number of victories. It demonstrates that they are struggling with the games' mechanics and knowledge, which causes them to frequently lose matches and accidentally prompts them to use the game's cheating software, transforming them into players. Destroy and wreck the game. Another issue is that most players don't spend enough time learning the metagame, or the champion they use most frequently is too challenging to play, which results in needless defeats.

3. Draw graphs, analyze, and come up with solutions

3.3. Win rate by region

To remedy the aforementioned scenario, the game publisher should rely on rank data to advise players when selecting a champion to play in accordance with, with a low rank, it is advised that players employ champions like: Darius, Garen, Renekton... When they have a high win rate and a high rank level, that can help them raise both their win rate and their rank, those players will not need cheat software when playing games anymore because most high rank players will not use cheat software for fear of being locked out of their accounts

III. User feedback and commentsII.

Survey and user reviews

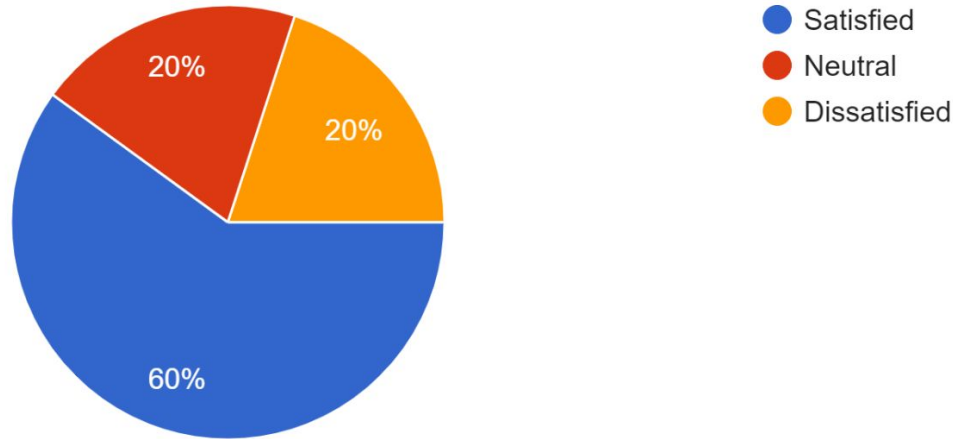
To record and appreciate everyone's opinion about our presentation of BI tools and the reports and charts it produces. We have generated a survey of 15 people on their opinions on the reports produced by BI tool and the role of BI tool.

List of questions

- 1.How satisfied are you with the chart provided by BI?
- 2.The amount of information you know through the chart?
- 3.Looking at the chart, you can see how easy it is to understand the data in it?
- 4.Through the chart analyzed by BI, you can quickly see the data you need in it?
- 5.Through here, you see what role BI tool plays in the process of analyzing and making reports?
- 6.In your opinion, Should you continue to use the Access BI Tools, analyze datasets and present analytical findings to reports, graphs?

How satisfied are you with the chart provided by BI?

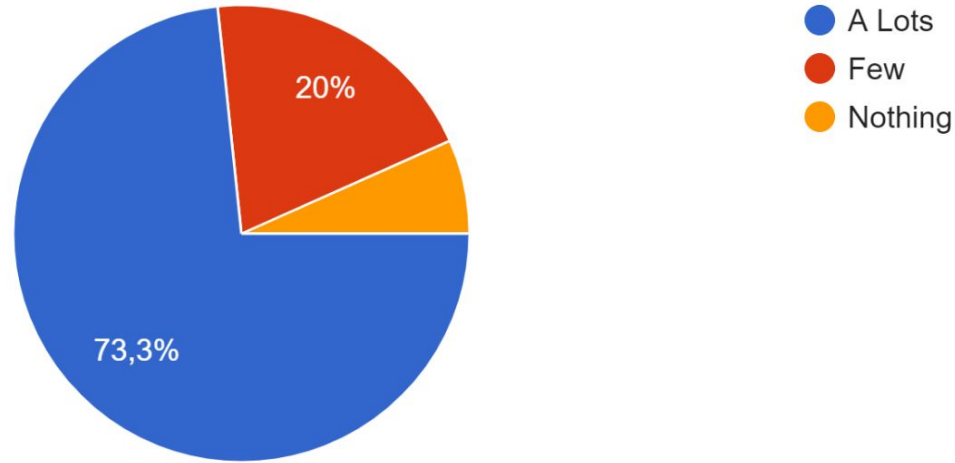
15 câu trả lời



1. In the first survey question, there were 15 participants, 60% of the respondents said that they are very satisfied with the charts and reports given by BI tool because when looking at the charts they can find the data very intuitive to understand and easy to evaluate and make comments. 20% of people feel normal and 20% of people feel dissatisfied with these charts and reports because they find these charts very normal and they encounter them often in their lives.

The amount of information you know through the chart?

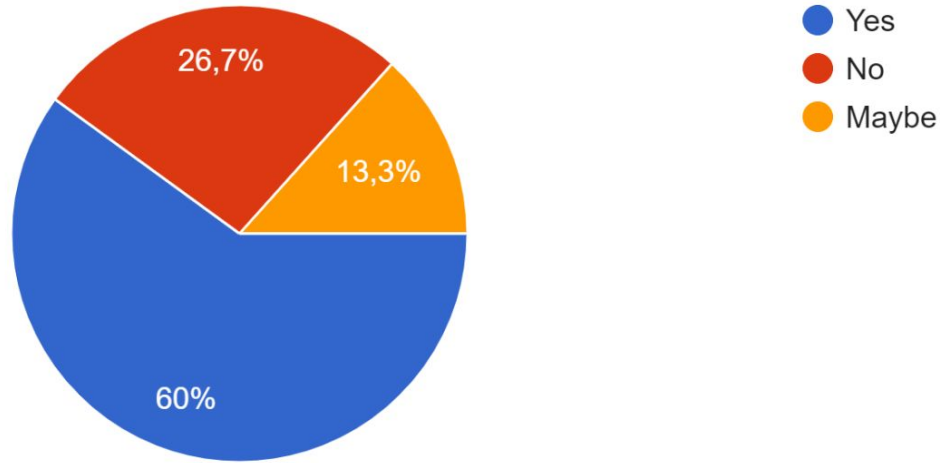
15 câu trả lời



2. In the second survey question with 15 participants, 73,3% of the respondents said that they get a lot and a lot of information from the charts and reports given by BI tool because the data in the graphs is very details through each milestone and clearly indicated. 20% of people say they see a few things from the graph and 1 person (6,7%) who see nothing. This may be because the chart type is not right for them

Looking at the chart, you can see how easy it is to understand the data in it?

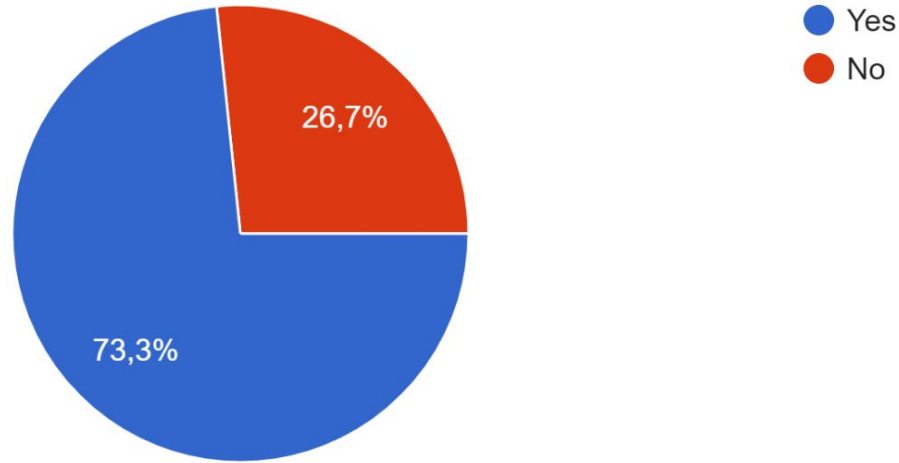
15 câu trả lời



3. In the third survey question with 15 participants, 60% of the respondents said that the data in the chart was easy to understand and 10% said it was normal for them. This shows that everyone has a complete understanding of what the chart is drawing and what it represents

Through the chart analyzed by BI, you can quickly see the data you need in it?

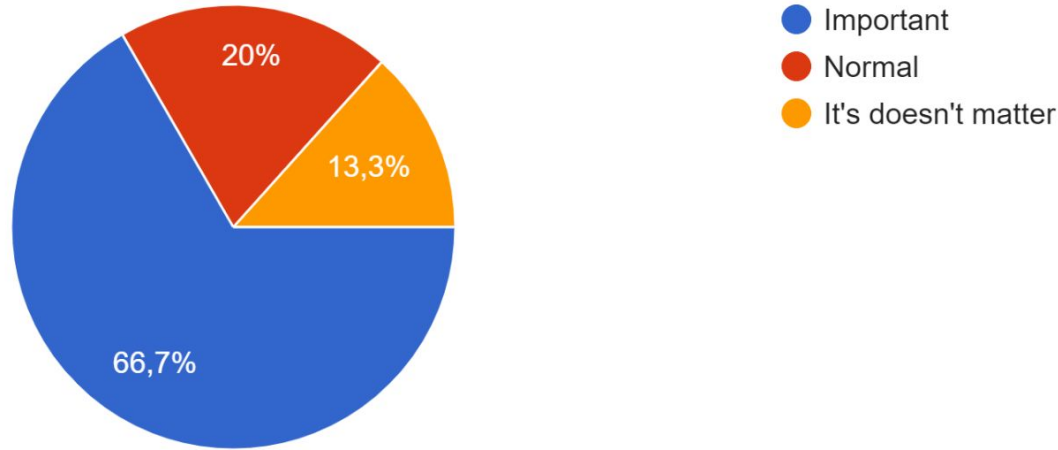
15 câu trả lời



4. In the fourth survey question, 15 participants, 73,3% of respondents said that they can quickly find the data they need through graphs. The rest (26,7%) said that it took them a long time to get the necessary information from the chart. This could be because the chart's data volume is too large, or the chart type isn't suitable for the data

Through here, you see what role BI tool plays in the process of analyzing and making reports?

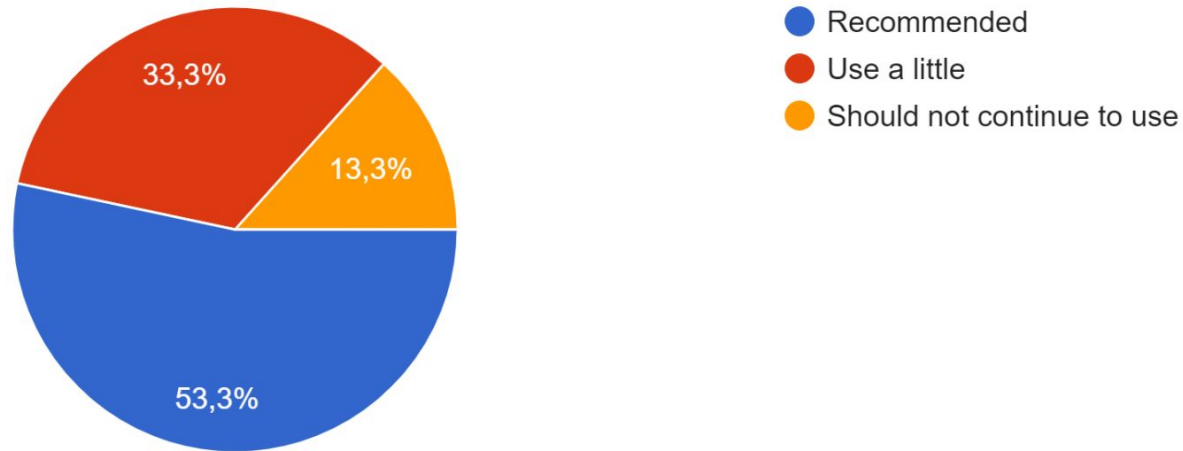
15 câu trả lời



5. In the fifth survey question, 15 participants, 66,7% of the respondents said that BI tools are important and very important to the analysis and reporting process of the company. 20% said the role of BI tool is normal and the rest 13,3% said it's doesn't matter. This clearly proves that the BI tool is helpful in processing and reporting for the company and supporting the decision making of the leaders.

In your opinion, Should you continue to use the Access BI Tools, analyze datasets and present analytical findings to reports, graphs?

15 câu trả lời



6. In the sixth survey question, there were 15 participants, 53,3% of the respondents said that in the future they must continue to use BI tool in the future. Because BI tool has helped them a lot in handling raw data. 33,3% says it should be used a little and the rest chose not to use because they do not have the education or technology to master it.

Overview

- I am not very satisfied with the results of this survey. half of the people recognize the important role of BI and the analysis and synthesis of company data. Most of the respondents said that BI is really important and should be maintained in the future.
- Based on the results of the survey above. I continue to suggest that the company should use BI more accurately to analyze and access the company's items, sales, sales, customer information ... data sets. This will save the company time, effort and cost
- Moreover, I will update the latest versions of BI tools for the company so that the output data can be objective and clear.
- I will train the staff in the company on how to use BI tools most proficiently so that everyone knows and must also use it to process data.

Thank You!