# ASSIGNMENT 1 FRONT SHEET

| Qualification | BTEC Level 5 HND Diploma in Computing | | |
|---|---|---|---|
| Unit number and title | Unit 14: Business Intelligence | | |
| Submission date | May 9, 2021 | Date Received 1st submission | May 9, 2021 |
| Re-submission Date | | Date Received 2nd submission | |
| Student Name | Bach Tuan Anh | Student ID | GCH18768 |
| Class | GCH0718 | Assessor name | Doan Trung Tung |
| Student declaration<br><br>I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice. | | | |
| | | Student's signature | |

## Grading grid

| P1 | P2 | M1 | M2 | D1 | D2 |
|---|---|---|---|---|---|
| | | | | | |

☐ Summative Feedback: ☐ Resubmission Feedback:

Grade: Assessor Signature: Date:

IV Signature:

# PRESENTATION

Member of group

- Bạch Tuấn Anh

- Nguyễn Khắc Quốc Nhật

- Nguyễn Văn Chiến

- Đoàn Trung Đức

# TABLE OF CONTENT

- What is BI and real example.
- BI techniques
- BI tools
- Introduce dataset
- Clean dataset
- Design Dashboards
- Business Intelligence and security
- Survey and feedback users

# WHAT IS BI?

- Business Intelligence refers to the skills, processes, technologies and applications used to support decision making.
- BI is a set of technologies and tools to transform raw data into meaning and useful information for business analysis.
- BI is the application and the technology to turn business data into action.

# BENEFIT OF BI

- BI increases the ability to control information of businesses accurately and effectively, so it can analyze and explore knowledge so that enterprises can predict trends of service prices and customer behavior, discover potential customers to devise appropriate business strategies to increase business competitiveness.

- BI helps businesses use information effectively and accurately to adapt to the constantly changing environment and fierce competition in business.

- Make more effective business decisions, determine the position and competitiveness of the Enterprise, analysis of customer behavior, identify Marketing goals and strategies, predict the future of the business, develop a business strategy. keep valuable customers and anticipate potential customers

# PRACTICAL EXAMPLES WHEN APPLYING BI INTO BUSINESS

- The ATN company optimizes operational efficiency of the restaurant

- Problem: The ATN company needs to improve its level of satisfaction, increase brand loyalty as well as help restaurant retain guests.

- Solution: A hotel owner uses BI analytics apps to gather statistical information on average occupancy and room rates. It helps to find the total revenue generated per room.

- It also collects market share statistics and data from customer surveys from each hotel to determine its competitive position in different markets.

- By analyzing these trends year by year, month by month, and day by day, management can offer discounts when it comes to renting rooms.

# REAL EXAMPLE ON OUR PROCESS

- Drama film is a company that produces series and is famous for many different genres. Due to the fact that movies are increasingly being produced and movie ratings and viewership ratings have not been correct, the number of viewers is not yet clear. So the management of the company conducted the Dashboard for comparison and analysis. Issues that can be included in the Dashboard for comparison are: number of viewers, rating of a movie, weekly movie ratings.

# REAL EXAMPLE ON OUR PROCESS

- Dashboards are one of the main advantages of BI, which makes it easier for us to visualize data to make it easier to compare and make the most accurate decisions. For the above example, without the features of BI, it will be difficult to analyze because it is difficult to determine the relationship between objects. In addition, BI makes it possible for the company to cleansing data, a data cleansing technology that only retains data that is believed to lead to a final conclusion.

# BI TECHNIQUES

- There are a number of business intelligence techniques that companies can use to gain valuable insights into making decisions. Below are popular BI techniques.

❖ Analysis techniques

- Dashboard

- Report

❖ Analytics techniques

- Regression

- Machine learning

# ANALYSIS TECHNIQUES

❖ The analysis is a data analysis technique that has happened in the past. This technique is used to learn from experience how and how something happens.

❖ Data analysis can be used in various ways such as performing analysis such as descriptive analysis, exploration analysis, deductive analysis, prediction analysis and useful insights from data.

❖ For example: if the company have the entire dataset and we are analyzing on it means we take the sample dataset from the entire data set and then learn more about it and how it relates to the other patterns

# ANALYSIS TECHNIQUES

❖ **Report:**

- Report are static documents that contain data in the form of tables or text.

- These data can be represented on charts used to visualize specific data and related data.

- Reports that cover broad-area issues. Because they are not intuitive and can be managed, reports can provide a more comprehensive view of an organization or a business.

❖ **The dashboard:** is the tool used to visualize data that can be customized and organized to display specific data and data. These tools turn data into flexible and vivid. More specifically, the Dashboard converts digital data into chart data, which makes it easy for users to specifically analyze it.

# ANALYTICS TECHNIQUES

❖ Analytics techniques are commonly used to provide insights into the future. Analytics calculates the logical data and application reasoning obtained in the analysis.

❖ Data Analytics can be used to find customer preferences, market trends and other necessary information that can help make more informed decisions for business purposes.

❖ For example: if the company has the entire dataset and when we pull the sample and do analysis on it, the techniques or logic we are using to analyses the sample is analytics.

# ANALYTICS TECHNIQUES

❖ **Regression** analysis is a statistical technique used to find relationships between variables. When there is only one independent and dependent variable, we call it simple regression and when there are many independent variables we call multiple regression.

• Example: ATN Bank wants to increase the amount of deposits. The bank wants to know the relationship between the amount of deposits and the interest rate of deposits, more specifically they want to know when increasing the interest rate by 0.1%, the average amount of deposits will increase.

❖ **Machine learning** is a process that software applications will manipulate and use to learn from input data. In other words, machine learning delivers perfect data output based on input.

# BI TOOLS

- BI tools enable us to better understand trends and draw data insights to make strategic and tactical decisions in business. Here are popular BI tools.

# DATA ANALYSIS APPLICATIONS

- Data virtualization are moving fast now with a lot of benefit they bring back. To stay at top of the data analytic field, a tool(application) have to has special mix of power, easy to use, brand recognition, and price.

- There are two Tool that have a lot of Power in BI: Power-BI and Tableau. They both are in the top of data analysis applications but we choose Tableau for our project

# TABLEAU

- **Tableau Public** is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format. Tableau helps create the data that can be understood by professionals at any level in an organization. It also allows non-technical users to create customized dashboards

# MICROSOFT EXCEL

- **Excel** is a spreadsheet application developed and published by Microsoft. It is part of the Microsoft Office suite of productivity software. Unlike a word processor, such as Microsoft Word, Excel organizes data in columns and rows. Rows and columns intersect at a space called a cell. Each cell can contain a single of data, such as text, a numerical value, or a formula

# PROGRAMMING TOOLS

- Python is a popular, high-level, object-oriented programming language and it's easy to learn. Python has a powerful high-level data structure and a simple yet effective approach to object-oriented programming

- Python has a simple and clear working syntax. It's easier to read and write than other languages, so working with Python is incredibly engaging. Python helps to visually solve complex problems

# DATASET

| show_name | country | num_episod | aired_on | original_net | rating | current_over | lifetime_pop | watchers | genres | tags |
|---|---|---|---|---|---|---|---|---|---|---|
| Goblin | South Korea | 16 | Friday, Satur | tvN | 8.9 | 33 | 1 | 111706 | Comedy, Ror | Supernatural, Grim Reaper, Older Man/Younger Woman, Interspecies Romance, Age Gap, Tearjerker, Dokkaebi, Fate, Bromance, Heartfelt |
| Strong Wom | South Korea | 16 | Friday, Satur | jTBC | 8.7 | 89 | 2 | 100950 | Action, Thrill | Strong Female Lead, Superhuman Strength, Love Triangle, Female Lead Action Scenes, Nice Male Lead, Bodyguard, Strong Female Characters, |
| Descendants | South Korea | 16 | Wednesday, | KBS2 | 8.7 | 77 | 3 | 96318 | Action, Milita | Soldier, Doctor, Multiple Couples, Bromance, Hardworking Female Lead, Charming Male Lead, Strong Female Lead, Hardworking Male Lead, Film |
| Boys Over Fl | South Korea | 25 | Monday, Tue | KBS2 | 7.7 | 2249 | 4 | 94228 | Friendship, C | Rich Man/Poor Woman, Adapted From A Manga, Arrogant Male Lead, School Bullying, Love Triangle, High School, Mean Male Lead, Evil Parenta |
| W | South Korea | 16 | Wednesday, | MBC | 8.5 | 201 | 5 | 92121 | Action, Susp | Parallel Dimension, Crossworlds Traveler, Webtoon Artist, Steamy Kiss, Murder, Rich Male Lead, Serial Killer, Revenge, Star Crossed Lovers, Trag |
| You Who Car | South Korea | 21 | Wednesday, | SBS | 8.6 | 112 | 6 | 91360 | Comedy, Ror | Alien, Interspecies Romance, Famous Actress, Celebrity, Steamy Kiss, Superhuman Strength, Time Manipulation, Cyberbullying, Sassy Female Le |
| Weightlifting | South Korea | 16 | Wednesday, | MBC | 8.8 | 40 | 7 | 91330 | Friendship, C | College Life, Dream, Friends To Lovers, Tomboy, Weightlifting, Bantering Relationship, Strong Female Lead, Male Chases Female First, Slow Bu |
| The Heirs | South Korea | 20 | Wednesday, | SBS | 7.5 | 2817 | 8 | 90467 | Friendship, C | High School, Love Triangle, Rich Man/Poor Woman, Family Pressure, Rich Male Lead, School Bullying, Rich Man/Poor Woman, Male Chases Fem |
| Pinocchio | South Korea | 20 | Wednesday, | SBS | 8.4 | 273 | 9 | 82893 | Thriller, Mys | Tragic Past, Hidden Identity, Revenge, Childhood Friends, Double Identity, First Love, News Reporter, Adopted Siblings Love, Steamy Kiss, Report |
| Healer | South Korea | 20 | Monday, Tue | KBS2 | 8.9 | 25 | 10 | 82553 | Action, Thrill | Double Identity, Hidden Identity, Strong Male Lead, Sassy Female Lead, Secret, Trauma, Badass Male Lead, Reporter, Hardworking Female Lead, |
| What's Wron | South Korea | 16 | Wednesday, | tvN | 8.5 | 196 | 11 | 79953 | Friendship, B | Adapted From A Webtoon, Steamy Kiss, Strong Female Lead, Office Romance, Boss/Employee Relationship, Rich Male Lead, Arrogant Male Lea |
| While You W | South Korea | 32 | Wednesday, | SBS | 8.7 | 61 | 12 | 77814 | Thriller, Mys | Precognition, Nice Male Lead, Neighbors, Murder, Tragic Past, Prosecutor, Strong Female Lead, Childhood Acquaintance, Smart Male Lead, Stea |
| Moon Lovers | South Korea | 20 | Monday, Tue | SBS | 8.6 | 95 | 13 | 74582 | Action, Histo | Prince Lead, Goryeo Dynasty, Power Struggle, Sibling Rivalry, Tearjerker, King, Time Travel, Death, Gwangjong, Obsession |
| Secret Garde | South Korea | 20 | Saturday, Su | SBS | 8.3 | 435 | 14 | 71519 | Comedy, Ror | Body Swap, Rich Man/Poor Woman, Hardworking Female Lead, Hot-tempered Female Lead, Character Development, Male Chases Female First, |
| Kill Me, Heal | South Korea | 20 | Wednesday, | MBC | 8.7 | 56 | 15 | 70018 | Psychologica | Dissociative Identity Disorder, Trauma, Boss/Employee Relationship, Rich Male Lead, Mental Health, PTSD, Psychiatry, Nice Male Lead, Mean M |
| You're Beaut | South Korea | 16 | Wednesday, | SBS | 8.1 | 903 | 16 | 68224 | Friendship, N | Cross-Dressing, Celebrity, Love Triangle, Reverse-Harem, Singing, Identity Swap, Idol, Bromance, Cold Man/Warm Woman, Naive Female Lead |
| The Legend | South Korea | 20 | Wednesday, | SBS | 8.4 | 342 | 17 | 67816 | Comedy, Ror | Interspecies Romance, Mermaid, Naive Female Lead, Reincarnated Lovers, Eccentric Female Lead, Con Artist, Evil Stepmother, Housemates, Wo |
| Crash Landin | South Korea | 16 | Sunday, Satu | tvN, Netflix | 8.9 | 24 | 18 | 66517 | Military, Con | North And South Korea, Star Crossed Lovers, Lovers From Different Countries, Fate, Army Officer, Strong Male Lead, Soldier, Strong Female Lead |
| Coffee Princ | South Korea | 17 | Monday, Tue | MBC | 8.3 | 480 | 19 | 65330 | Food, Friend | Cross-Dressing, Hidden Identity, Tomboy, Rich Man/Poor Woman, Coffee Shop, Boss/Employee Relationship, Strong Female Lead, Hardworking |
| I Hear Your V | South Korea | 18 | Wednesday, | SBS | 8.6 | 128 | 20 | 64214 | Thriller, Mys | Lawyer, Special Power, Revenge, Trauma, Strong Female Lead, Smart Female Lead, Older Woman/Younger Man, Male Chases Female First, Ag |
| City Hunter | South Korea | 20 | Wednesday, | SBS | 8.4 | 307 | 21 | 64186 | Action, Susp | Strong Male Lead, Hidden Identity, Strong Female Lead, Revenge, Corruption, Vigilante, Adapted From A Manga, Secret, Smart Male Lead, Body |
| I'm Not a Ro | South Korea | 32 | Wednesday, | MBC | 8.5 | 229 | 22 | 63723 | Friendship, C | Haphephobia, Hidden Identity, Rich Male Lead, Eccentric Male Lead, Robot, Double Identity, Hardworking Female Lead, Socially Awkward Protag |
| She Was Pre | South Korea | 16 | Wednesday, | MBC | 8.1 | 752 | 23 | 63585 | Friendship, C | Office Romance, Sismance, Makeover, Hardworking Female Lead, Secret, Workplace, Nice Female Lead, Hidden Identity, Childhood Friends, Mis |
| Cheese in the | South Korea | 16 | Monday, Tue | tvN | 7.6 | 2383 | 24 | 63200 | Friendship, P | Adapted From A Webtoon, College Life, Psychological, Rich Male Lead, Stalking, Love Triangle, Male Chases Female First, Antihero, Possessive N |
| Hotel del Lur | South Korea | 16 | Saturday, Su | tvN | 8.7 | 79 | 25 | 63178 | Action, Myst | Immortal, Boss/Employee Relationship, Ghost-seeing Male Lead, Strong Female Lead, Ghost, Hotel, Nice Male Lead, Warm Man/Cold Woman, |
| Fight For My | South Korea | 16 | Monday, Tue | KBS2 | 8.5 | 198 | 26 | 63140 | Friendship, B | Friends To Lovers, Childhood Friends, Strong Male Lead, Strong Female Lead, Neighbors, Ex-girlfriend Comes Back, Strong Friendship, Poor Male |
| It's Okay to N | South Korea | 16 | Saturday, Su | tvN, Netflix | 9.1 | 9 | 27 | 62023 | Psychologica | Melodrama, Independent Female Lead, Sibling Relationship, Mental Health, Emotionally Wounded, Successful Female Lead, Strong Female Lea |
| The Master's | South Korea | 17 | Wednesday, | SBS | 8.6 | 124 | 28 | 60671 | Horror, Psych | Ghost, Eccentric Female Lead, Arrogant Male Lead, Rich Male Lead, Clingy Female Lead, Successful Male Lead, Obsession, Tragic Past, Trauma, |
| Suspicious Pa | South Korea | 40 | Wednesday, | SBS | 8.3 | 441 | 29 | 60007 | Suspense, Th | Cohabitation, Serial Killer, Strong Female Lead, Nice Male Lead, Hardworking Female Lead, Smart Male Lead, Tragic Past, Ex-girlfriend Comes B |
| It's Okay, Tha | South Korea | 16 | Wednesday, | SBS | 8.7 | 92 | 30 | 58961 | Friendship, P | Strong Female Lead, Psychiatry, Mental Health, Trauma, Charming Male Lead, Healing, Adult Romance, Melodrama, Cohabitation, Housemates |
| Oh My Ghost | South Korea | 16 | Friday, Satur | tvN | 8.4 | 315 | 31 | 58677 | Food, Comed | Ghost, Chef, Boss/Employee Relationship, Low Self-esteem Protagonist, Identity Swap, Hardworking Male Lead, Eccentric Character, Ghost-seei |
| Playful Kiss | South Korea | 16 | Wednesday, | MBC | 7.3 | 3788 | 32 | 57459 | Comedy, Ror | Cohabitation, Adapted From A Manga, First Love, Unrequited Love, Arrogant Male Lead, Female Chases Male First, High School, Love Triangle, Lo |
| Cinderella ar | South Korea | 16 | Friday, Satur | tvN | 7.8 | 1653 | 33 | 57004 | Friendship, C | Cohabitation, Reverse-Harem, Hardworking Female Lead, Housemates, Rich Male Lead, Rich Man/Poor Woman, Strong Female Lead, Cold Man, |
| Dream High | South Korea | 16 | Monday, Tue | KBS2 | 8 | 1006 | 34 | 56805 | Friendship, M | High School, School Bullying, Personal Growth, Childhood Friends, Idol Actor, Love Triangle, JYP Entertainment, Dal Shabet, Day6, 2PM |
| Oh My Venus | South Korea | 16 | Monday, Tue | KBS2 | 8.3 | 459 | 35 | 56726 | Friendship, C | Weight Loss, Makeover, Body Image, Cohabitation, Bromance, Rich Male Lead, Hidden Identity, Hardworking Male Lead, Steamy Kiss, Painful Pa |
| My ID Is Gan | South Korea | 16 | Friday, Satur | jTBC | 8.2 | 693 | 36 | 55256 | Friendship, P | Nice Female Lead, Beauty Standards, College Life, Male Chases Female First, Nice Male Lead, Plastic Surgery, Adapted From A Webtoon, Low S |
| Reply 1997 | South Korea | 16 | Tuesday, | tvN | 8.6 | 134 | 37 | 54843 | Friendship, C | High School, Childhood Friends, 1990s, First Love, Strong Friendship, Friends To Lovers, Love Square, Unrequited Love, Love Triangle, Bromance |

# BENEFITS OF PYTHON WHEN CLEANING DATA

❖ Python has libraries that make it easier to clean data with numpy, pandas, csv…

❖ Python provides methods to fix, scan, delete invalid data

❖ The syntax of Python is short and easy to understand so that others can  easily understand when reading the code

# IMPORT PACKAGES || READ CSV

- I use lib pandas for read csv

- Pandas very useful with csv and short code, clear code.

```
1   ▶   import pandas as pd
2       import math
3
4       csv = pd.read_csv('dramas.csv')
```

# FIX "AIRED_ON" COLUMN IN DATASET

- With "Friday, Saturday" change to "Weekend"

- And with it is not "Friday, Saturday" change to "Non-weekend"

```python
5    # change to 'weekend' or 'non-weekend'
6    csv.loc[csv['aired_on'] == 'Friday, Saturday', 'aired_on'] = 'weekend'
7    csv.loc[csv['aired_on'] != 'weekend', 'aired_on'] = 'non-weekend'
8    # print(csv['aired_on'])
```

# FIX "WATCHERS" COLUMN IN DATASET

- It is required to round up the numbers in "watchers", taken from the thousands, and then compare it with 500. If greater than 500 round up and less than 500 then round down.

```python
10    # Watcher: lam tron don vi nghin
11    newNub = []
12    for nb in csv['watchers']:
13        if nb % 1000 > 500:
14            nb = (math.ceil(nb / 1000)) * 1000
15        else:
16            nb = (math.floor(nb / 1000)) * 1000
17        newNub.append(nb)
18
19    csv['watchers'] = newNub
20    # print(csv['watchers'])
```

# ADD NEW "TOTAL GENRES" COLUMN IN DATASET

- Require to sum the species in the "genres" column, then show up in a new column called "Total genres"

```python
22    # total of genres
23    totalGen = []
24    for gen in csv['genres']:
25        data = gen.split(',')
26        totalGen.append(len(data))
27    # print(totalGen)
28    csv.insert(10, 'total_genres', totalGen)
29    # ------------------------------
```

# ADD NEW "TOTAL TAGS" COLUMN IN DATASET

- Require to sum the species in the "tags" column, then show up in a new column called "Total tags"

```python
30    # total of tags
31    totalTag = []
32    for gen in csv['tags']:
33        data = gen.split(',')
34        totalTag.append(len(data))
35    # print(totalTag)
36    csv['total_tags'] = totalTag
37    # ------------------------------
```

# REWRITE THE LIST INTO CSV: DATA_CLEAN.CSV

```python
37    # --------------------------------
38    # writing to new csv file
39    csv.to_csv('data_clean.csv',
40                index=False)
41    print('save....!')
42
```
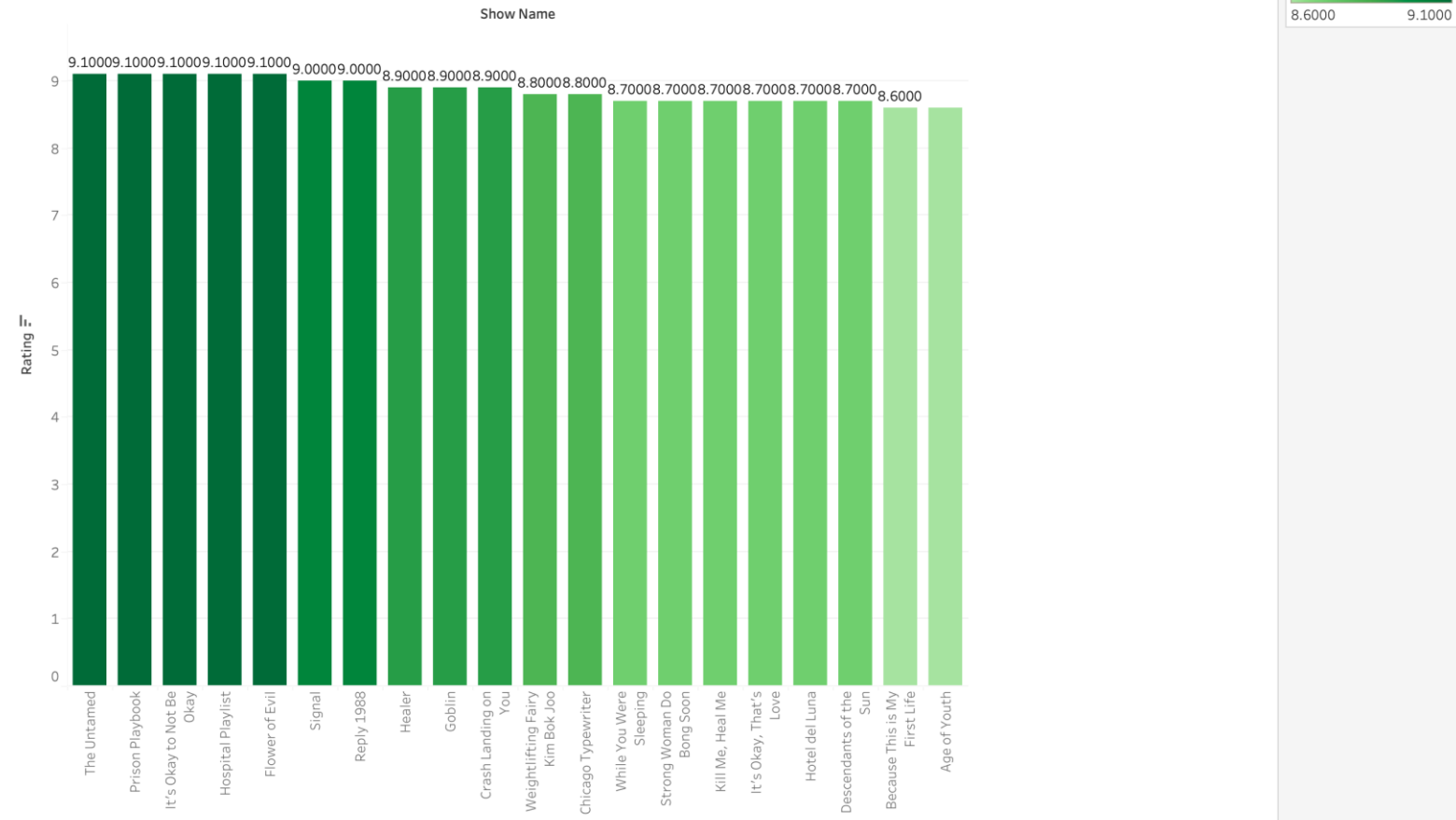
# DATASET CLEAN

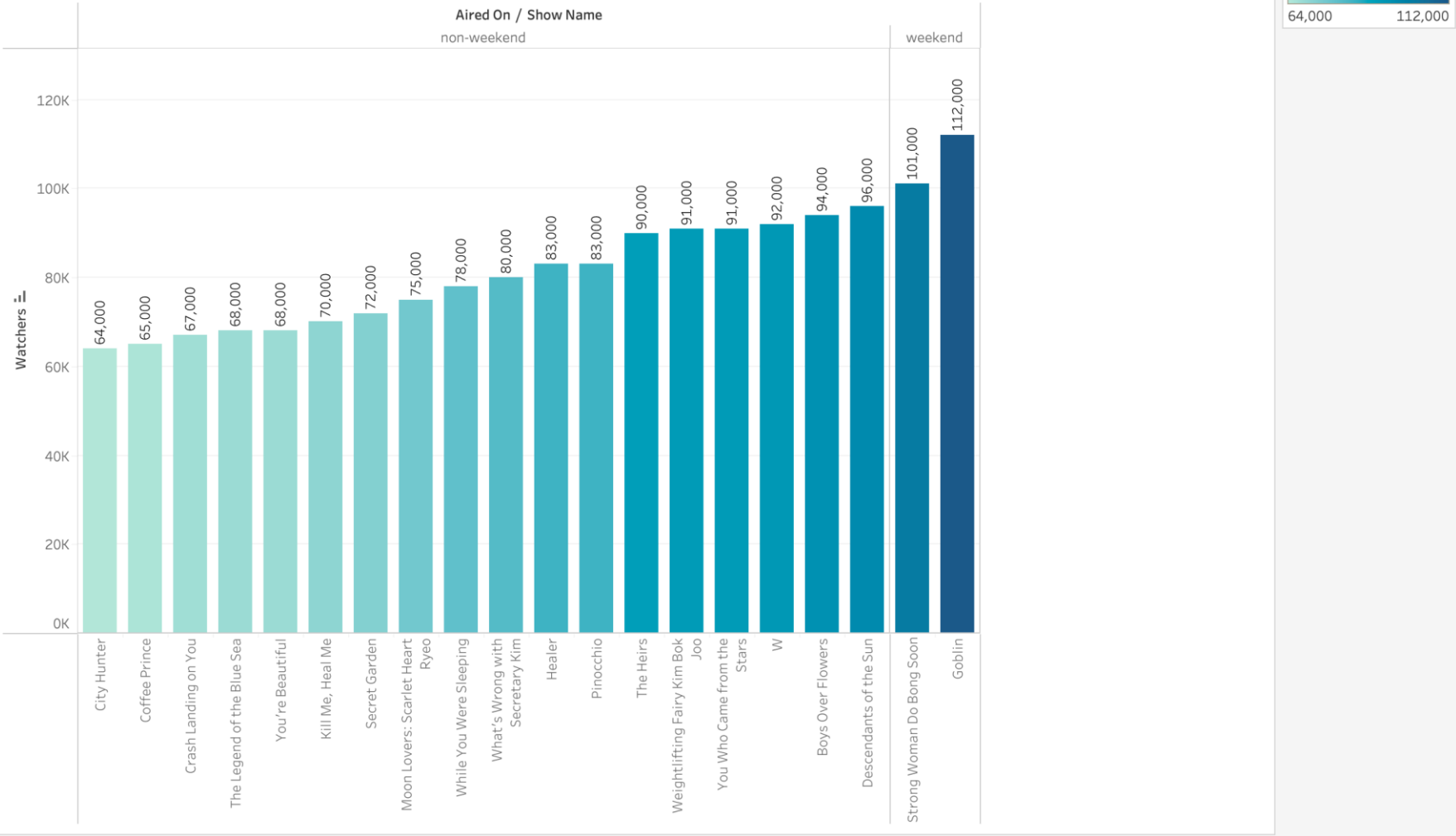| show_name | country | num_episod | aired_on | original_netv | rating | current_over | lifetime_pop | watchers | genres | total_genres | tags | total_tags |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Goblin | South Korea | 16 | weekend | tvN | 8.9 | 33 | 1 | 112000 | Comedy, Romance, Fantasy, Melodrar | 5 | Supernatural, Grim Reaper, Older Man/Yo | 10 |
| Strong Wom | South Korea | 16 | weekend | jTBC | 8.7 | 89 | 2 | 101000 | Action, Thriller, Comedy, Romance, Dr | 6 | Strong Female Lead, Superhuman Strengtl | 10 |
| Descendants | South Korea | 16 | non-weekend | KBS2 | 8.7 | 77 | 3 | 96000 | Action, Military, Comedy, Romance, N | 6 | Soldier, Doctor, Multiple Couples, Broman | 10 |
| Boys Over Fl | South Korea | 25 | non-weekend | KBS2 | 7.7 | 2249 | 4 | 94000 | Friendship, Comedy, Romance, School | 6 | Rich Man/Poor Woman, Adapted From A I | 10 |
| W | South Korea | 16 | non-we! end | MBC | 8.5 | 201 | 5 | 92000 | Action, Suspense, Thriller, Comedy, Rc | 8 | Parallel Dimension, Crossworlds Traveler, | 10 |
| You Who Car | South Korea | 21 | non-weekend | SBS | 8.6 | 112 | 6 | 91000 | Comedy, Romance, Drama, Fantasy, N | 5 | Alien, Interspecies Romance, Famous Actr | 10 |
| Weightlifting | South Korea | 16 | non-weekend | MBC | 8.8 | 40 | 7 | 91000 | Friendship, Comedy, Romance, School | 6 | College Life, Dream, Friends To Lovers, To | 10 |
| The Heirs | South Korea | 20 | non-weekend | SBS | 7.5 | 2817 | 8 | 90000 | Friendship, Comedy, Romance, School | 7 | High School, Love Triangle, Rich Man/Poor | 10 |
| Pinocchio | South Korea | 20 | non-weekend | SBS | 8.4 | 273 | 9 | 83000 | Thriller, Mystery, Comedy, Romance, I | 5 | Tragic Past, Hidden Identity, Revenge, Chil | 10 |
| Healer | South Korea | 20 | non-weekend | KBS2 | 8.9 | 25 | 10 | 83000 | Action, Thriller, Mystery, Comedy, Ron | 6 | Double Identity, Hidden Identity, Strong Ma | 10 |
| What's Wror | South Korea | 16 | non-weekend | tvN | 8.5 | 196 | 11 | 80000 | Friendship, Business, Comedy, Roman | 4 | Adapted From A Webtoon, Steamy Kiss, Si | 10 |
| While You W | South Korea | 32 | non-weekend | SBS | 8.7 | 61 | 12 | 78000 | Thriller, Mystery, Comedy, Romance, [ | 6 | Precognition, Nice Male Lead, Neighbors, | 10 |
| Moon Lovers | South Korea | 20 | non-weekend | SBS | 8.6 | 95 | 13 | 75000 | Action, Historical, Romance, Drama, F | 6 | Prince Lead, Goryeo Dynasty, Power Strugg | 10 |
| Secret Garde | South Korea | 20 | non-weekend | SBS | 8.3 | 435 | 14 | 72000 | Comedy, Romance, Drama, Melodram | 5 | Body Swap, Rich Man/Poor Woman, Hardv | 10 |
| Kill Me, Heal | South Korea | 20 | non-weekend | MBC | 8.7 | 56 | 15 | 70000 | Psychological, Comedy, Romance, Dra | 4 | Dissociative Identity Disorder, Trauma, Bos | 10 |
| You're Beaut | South Korea | 16 | non-weekend | SBS | 8.1 | 903 | 16 | 68000 | Friendship, Music, Comedy, Romance, | 5 | Cross-Dressing, Celebrity, Love Triangle, Re | 10 |
| The Legend ( | South Korea | 20 | non-weekend | SBS | 8.4 | 342 | 17 | 68000 | Comedy, Romance, Drama, Fantasy | 4 | Interspecies Romance, Mermaid, Naive Fe | 10 |
| Crash Landin | South Korea | 16 | non-weekend | tvN, Netflix | 8.9 | 24 | 18 | 67000 | Military, Comedy, Romance, Drama, P | 5 | North And South Korea, Star Crossed Lover | 10 |
| Coffee Princ | South Korea | 17 | non-weekend | MBC | 8.3 | 480 | 19 | 65000 | Food, Friendship, Comedy, Romance, I | 5 | Cross-Dressing, Hidden Identity, Tomboy, F | 10 |
| I Hear Your V | South Korea | 18 | non-weekend | SBS | 8.6 | 128 | 20 | 64000 | Thriller, Mystery, Law, Romance, Dran | 6 | Lawyer, Special Power, Revenge, Trauma, | 10 |
| City Hunter | South Korea | 20 | non-weekend | SBS | 8.4 | 307 | 21 | 64000 | Action, Suspense, Thriller, Romance, [ | 5 | Strong Male Lead, Hidden Identity, Strong | 10 |
| I'm Not a Ro | South Korea | 32 | non-weekend | MBC | 8.5 | 229 | 22 | 64000 | Friendship, Comedy, Romance, Drama | 5 | Haphephobia, Hidden Identity, Rich Male L | 10 |
| She Was Pre | South Korea | 16 | non-weekend | MBC | 8.1 | 752 | 23 | 64000 | Friendship, Comedy, Romance, Drama | 4 | Office Romance, Sismance, Makeover, Hai | 10 |
| Cheese in th | South Korea | 16 | non-weekend | tvN | 7.6 | 2383 | 24 | 63000 | Friendship, Psychological, Romance, L | 5 | Adapted From A Webtoon, College Life, Ps | 10 |
| Hotel del Lur | South Korea | 16 | non-weekend | tvN | 8.7 | 79 | 25 | 63000 | Action, Mystery, Horror, Comedy, Rom | 7 | Immortal, Boss/Employee Relationship, G | 10 |
| Fight For My | South Korea | 16 | non-weekend | KBS2 | 8.5 | 198 | 26 | 63000 | Friendship, Business, Comedy, Roman | 6 | Friends To Lovers, Childhood Friends, Stror | 10 |
| It's Okay to I | South Korea | 16 | non-weekend | tvN, Netflix | 9.1 | 9 | 27 | 62000 | Psychological, Comedy, Romance, Dra | 5 | Melodrama, Independent Female Lead, Sil | 10 |
| The Master's | South Korea | 17 | non-weekend | SBS | 8.6 | 124 | 28 | 61000 | Horror, Psychological, Comedy, Romar | 6 | Ghost, Eccentric Female Lead, Arrogant M | 10 |
| Suspicious P | South Korea | 40 | non-weekend | SBS | 8.3 | 441 | 29 | 60000 | Suspense, Thriller, Comedy, Law, Rom | 6 | Cohabitation, Serial Killer, Strong Female I | 10 |
| It's Okay, Th | South Korea | 16 | non-weekend | SBS | 8.7 | 92 | 30 | 59000 | Friendship, Psychological, Comedy, Ro | 5 | Strong Female Lead, Psychiatry, Mental He | 10 |
| Oh My Ghost | South Korea | 16 | weekend | tvN | 8.4 | 315 | 31 | 59000 | Food, Comedy, Romance, Supernatura | 5 | Ghost, Chef, Boss/Employee Relationship, | 10 |
| Playful Kiss | South Korea | 16 | non-weekend | MBC | 7.3 | 3788 | 32 | 57000 | Comedy, Romance, School, Drama | 4 | Cohabitation, Adapted From A Manga, Firs | |

# TABLEAU

- There are many tools available to support effective business decision making for a hospital. A number of points are assessed by control panels and reports, the individual components are almost irrelevant, increasing the cohesion between Design and analysis tools by interaction analysis and data mining, Collecting data. The use of dashboards and reporting are tools to help make effective decisions for businesses. Tableau helps identify missing points, they include data, which can help understand the needs of businesses. Tableau identifies opportunities for cross-selling and up-selling, integrating budgeting and planning processes

This is a chart of the top 20 ratings of each movie, based on the chart showing that most of the movies have the same rating and only 2 movies have the lowest rating.

# Top 20 watchers



Here's a chart of the top 20 most watched watchers for each movie, based on the chart showing that most weekend movies have had the most viewers and less weekdays.
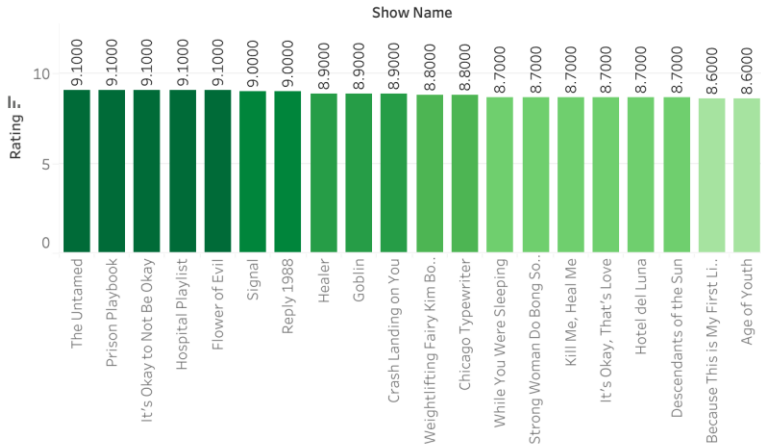
# top 20 current-over rank

| Show Name | Country | Original Ne.. | |
|---|---|---|---|
| Playful Kiss | South Korea | MBC | 3,788 |
| The Bride of Habaek | South Korea | tvN | 3,541 |
| Blood | South Korea | KBS2 | 3,271 |
| To The Beautiful You | South Korea | SBS | 2,835 |
| The Heirs | South Korea | SBS | 2,817 |
| Heartstrings | South Korea | MBC | 2,803 |
| Flower Boy Next Door | South Korea | tvN | 2,466 |
| Cheese in the Trap | South Korea | tvN | 2,383 |
| My Secret Romance | South Korea | OCN | 2,325 |
| Boys Over Flowers | South Korea | KBS2 | 2,249 |
| Personal Taste | South Korea | MBC | 2,083 |
| Goong | South Korea | MBC | 1,717 |
| Cinderella and the Four K.. | South Korea | tvN | 1,653 |
| Love Alarm | South Korea | Netflix | 1,647 |
| Doctors | South Korea | SBS | 1,628 |
| Abyss | South Korea | tvN, Netflix | 1,577 |
| Doctor Stranger | South Korea | SBS | 1,504 |
| Introverted Boss | South Korea | tvN | 1,247 |
| Emergency Couple | South Korea | tvN | 1,145 |
| Hwarang | South Korea | KBS2 | 1,097 |

This is a chart of the top 20 highest-rated movies, based on the chart showing the current highest-rated film is the Korean film Hwarang and the KBS2 television side and ranked 20 as the Playful movie. kiss the Korean area and the MC TV party
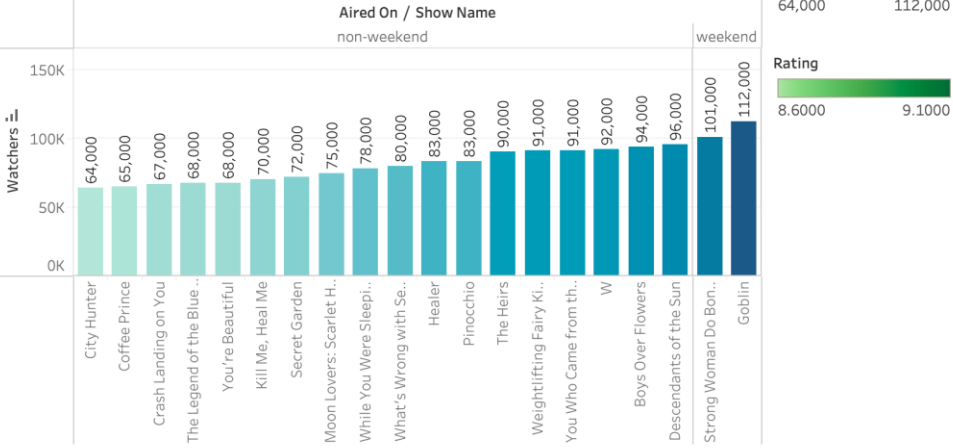
# Dashboard top film



**Top 20 rating**

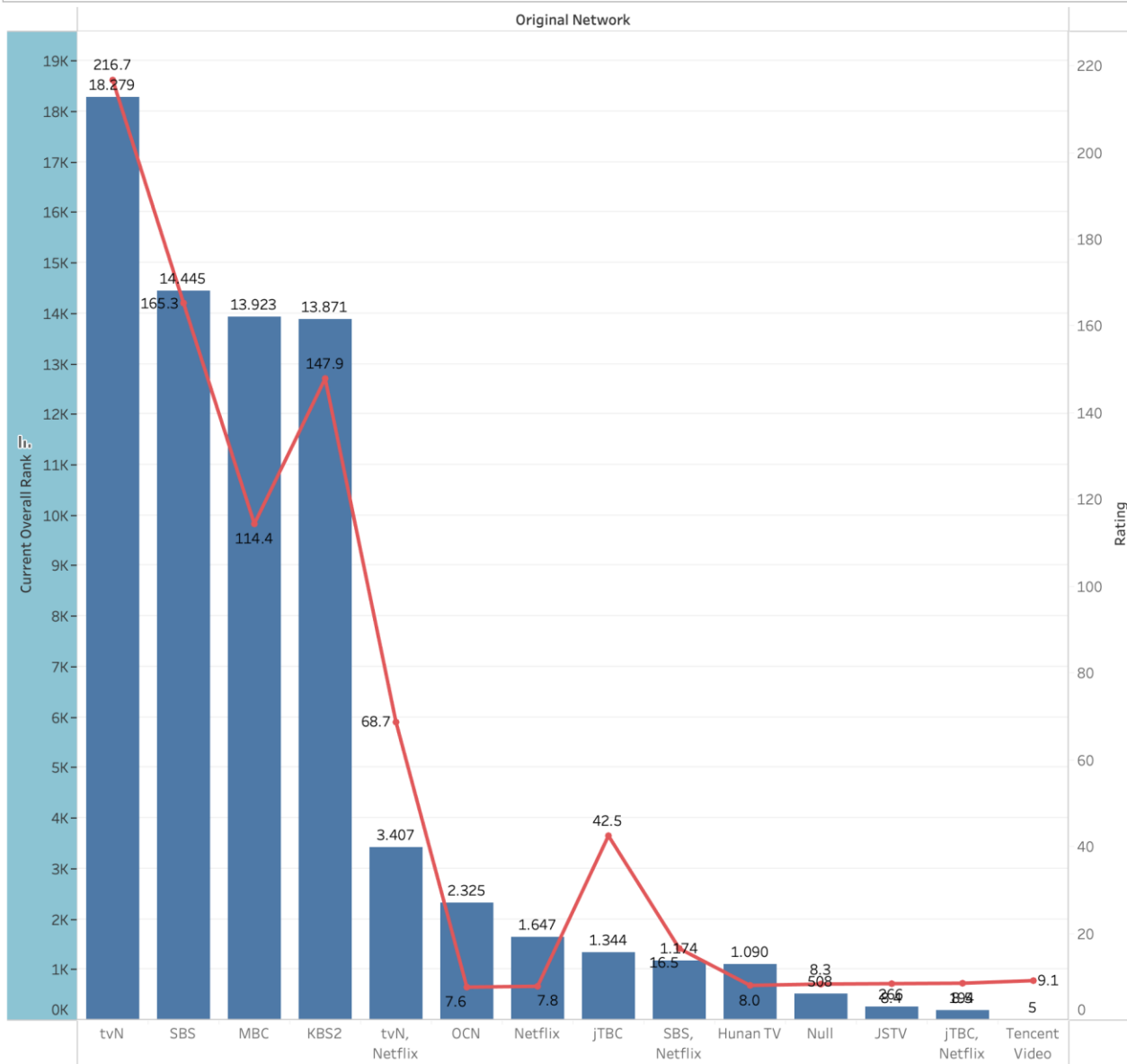Show Name

The Untamed 9.1000, Prison Playbook 9.1000, It's Okay to Not Be Okay 9.1000, Hospital Playlist 9.1000, Flower of Evil 9.1000, Signal 9.0000, Reply 1988 9.0000, Healer 8.9000, Goblin 8.9000, Crash Landing on You 8.9000, Weightlifting Fairy Kim Bo.. 8.8000, Chicago Typewriter 8.8000, While You Were Sleeping 8.7000, Strong Woman Do Bong So.. 8.7000, Kill Me, Heal Me 8.7000, It's Okay, That's Love 8.7000, Hotel del Luna 8.7000, Descendants of the Sun 8.7000, Because This is My First Li.. 8.6000, Age of Youth 8.6000

**Top 20 watchers**

Aired On / Show Name

non-weekend / weekend

Watchers 64,000 — 112,000

Rating 8.6000 — 9.1000

City Hunter 64,000, Coffee Prince 65,000, Crash Landing on You 67,000, The Legend of the Blue.. 68,000, You're Beautiful 68,000, Kill Me, Heal Me 70,000, Secret Garden 72,000, Moon Lovers: Scarlet H.. 75,000, While You Were Sleepi.. 78,000, What's Wrong with Se.. 80,000, Healer 83,000, Pinocchio 83,000, The Heirs 90,000, Weightlifting Fairy Ki.. 91,000, You Who Came from th.. 91,000, W 92,000, Boys Over Flowers 94,000, Descendants of the Sun 96,000, Strong Woman Do Bon.. 101,000, Goblin 112,000

**top 20 current-over rank**

| Show Name | Country | Original Ne.. | |
|---|---|---|---|
| Playful Kiss | South Korea | MBC | 3,788 |
| The Bride of Habaek | South Korea | tvN | 3,541 |
| Blood | South Korea | KBS2 | 3,271 |
| To The Beautiful You | South Korea | SBS | 2,835 |
| The Heirs | South Korea | SBS | 2,817 |
| Heartstrings | South Korea | MBC | 2,803 |
| Flower Boy Next Door | South Korea | tvN | 2,466 |
| Cheese in the Trap | South Korea | tvN | 2,383 |
| My Secret Romance | South Korea | OCN | 2,325 |
| Boys Over Flowers | South Korea | KBS2 | 2,249 |
| Personal Taste | South Korea | MBC | 2,083 |
| Goong | South Korea | MBC | 1,717 |
| Cinderella and the Four K.. | South Korea | tvN | 1,653 |
| Love Alarm | South Korea | Netflix | 1,647 |
| Doctors | South Korea | SBS | 1,628 |
| Abyss | South Korea | tvN, Netflix | 1,577 |
| Doctor Stranger | South Korea | SBS | 1,504 |
| Introverted Boss | South Korea | tvN | 1,247 |
| Emergency Couple | South Korea | tvN | 1,145 |
| Hwarang | South Korea | KBS2 | 1,097 |

The following table will perform data analysis. Combining the previous three charts, we will see a movie's metrics of its rating, watcher and rating

Conclusion: Through collecting data about a movie, film studio, region, we will know the strengths of each movie in each region and which region thrives in which genre. From there, we will promote development and invest in that genre of movies, and the movies with low sales will stop investing in it.
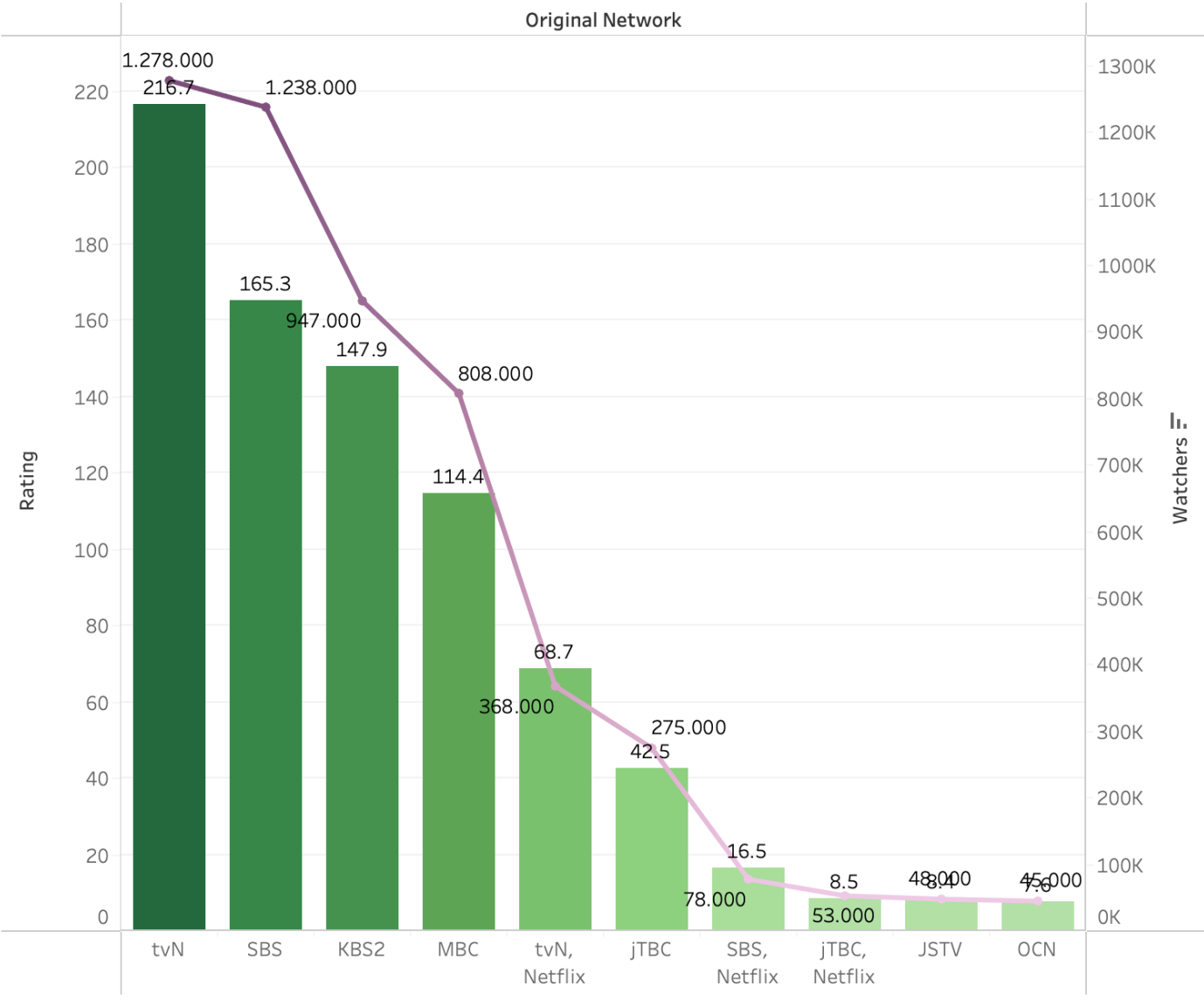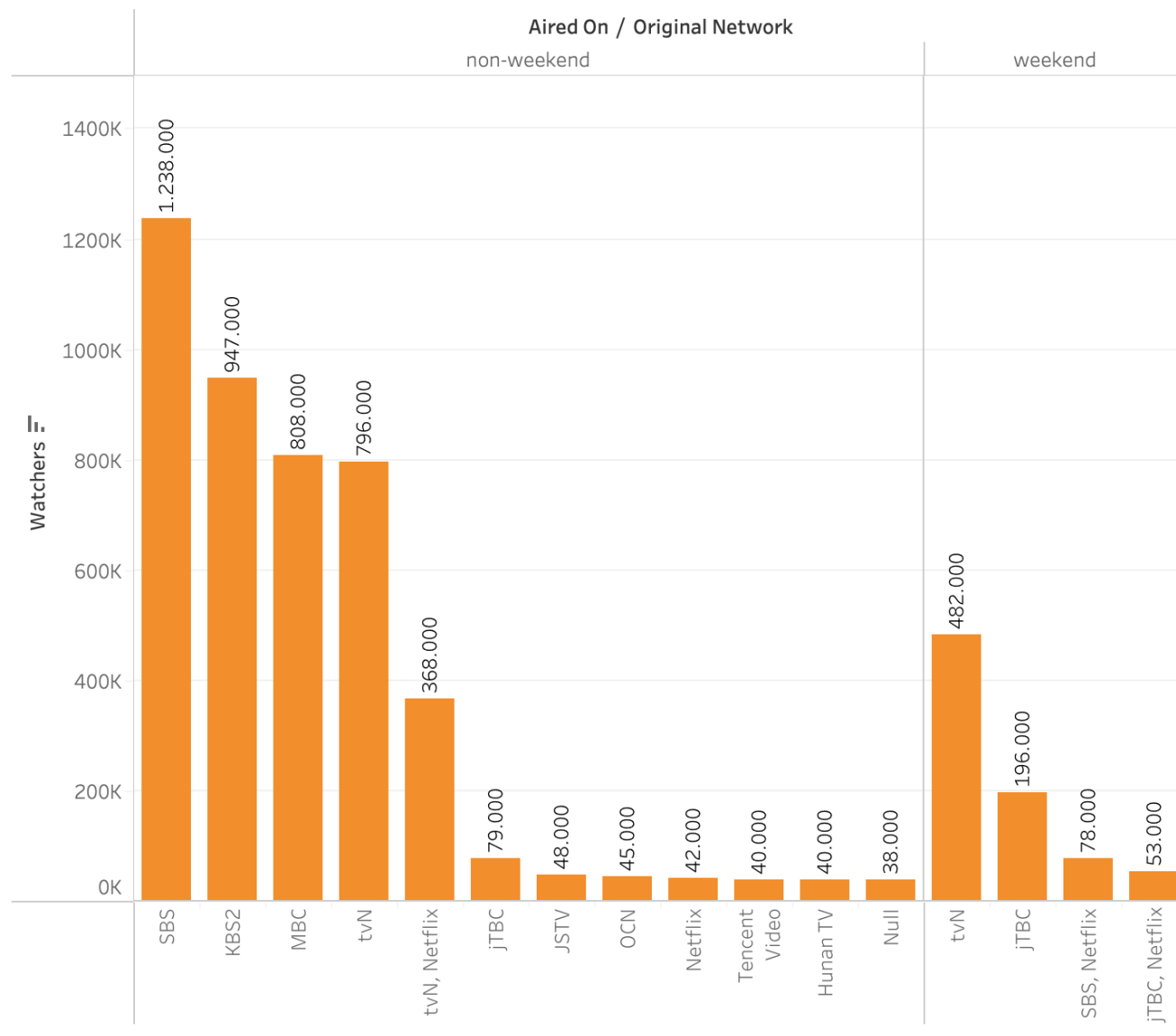
These are the top 10 broadcasters' ratings, which are rated by rating. Based on the chart we can see that tvN has the highest rating and highest rating, the lowest ranked Tencent video side is Tencent video, the lowest rating is jTBC Netfix.
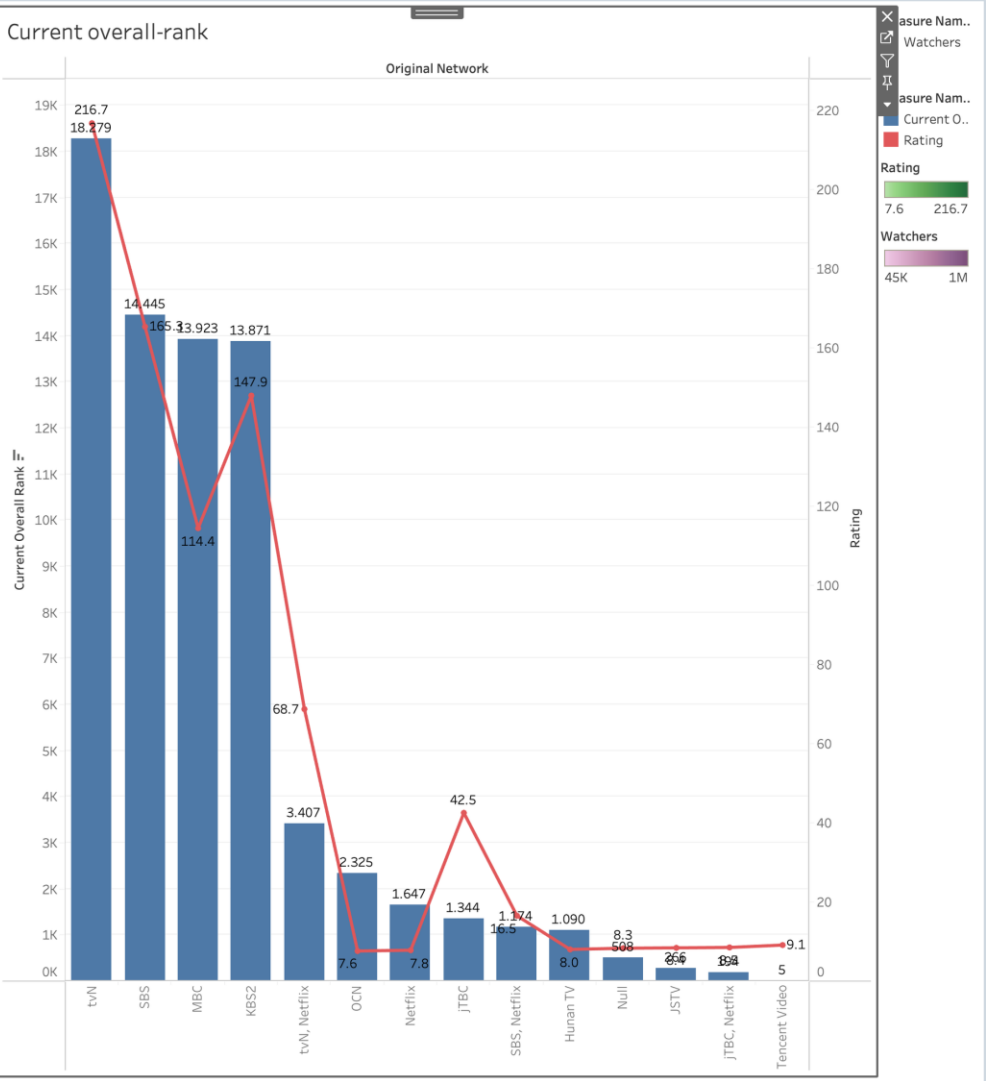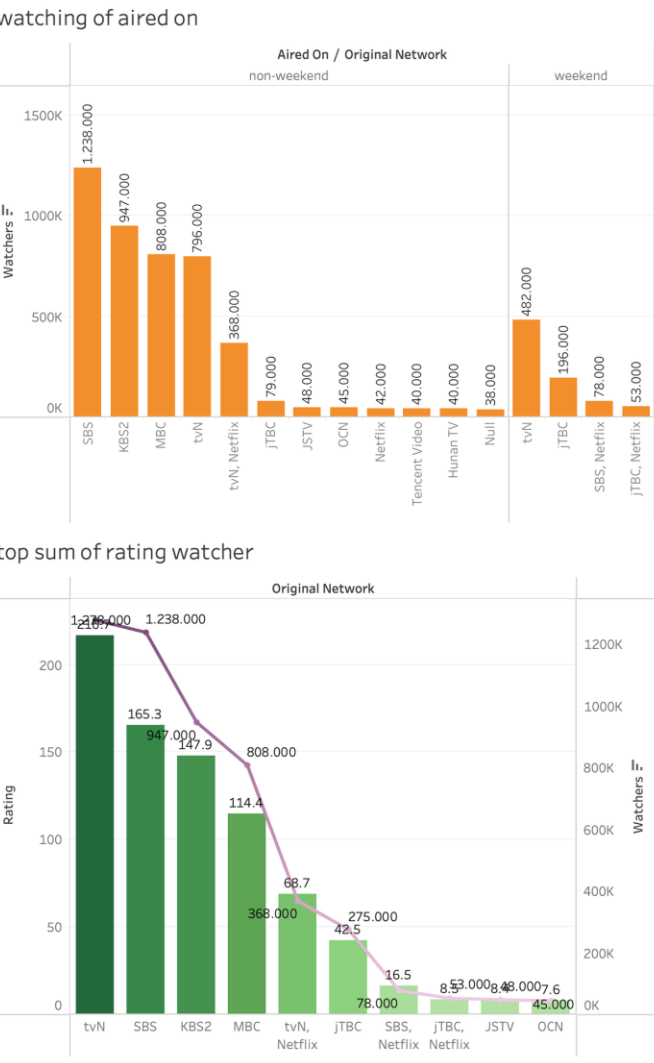
top sum of rating watcher

This is a chart of the top 10 watchers ranked according to the ratings of each TV station. The rating with the most viewers is on tvN, the lowest is on the OCN side

watching of aired on

Aired On / Original Network

This is the top 10 most watched watchers on television side and reviewed by weekends and not weekends. Based on the chart we see not at the weekend, SBS has the most viewers and the lowest is Hunan TV, and on the weekends, tvN has the most viewers and the lowest is jTBC Netflix.

# Dashboard Original network



The following table will perform data analysis. Combining the 3 panel analysis of viewers, ratings of the TV side, we will see the ratings, viewers of each TV side and ratings of each TV side. Conclusion: The purpose of the 3 charts is to find out which television company has the most viewers and to look at the weekly views chart, which weekday and weekends have more views so that we can determine to sell to Which TV stations for the company to develop and at what time of the week to let their movies be watched by the company to promote the best development of the company

# EVALUATE:

❖ Benefits that BI brings to businesses:

• In the film production construction project, we used BI to assist in monitoring during operation. This helps us capture accurate and specific information (No longer subjective estimates of information and data).

• BI is a cross-platform application capable of providing reports and dashboards through not only computers, laptops but also mobile devices, it only needs an Internet connection. Therefore, making smart reports will save us a lot of time and effort.

❖ Benefits that businesses bring to BI: Previously, BI did not apply to popular projects, but now businesses choose to use it, it brings many benefits (by analyzing passenger behavior Sales, measurement, tracking and prediction of sales and financial performance ...) This will not only help your business grow, but when the business has successfully applied BI. BI will be known more widely, not only in the field of film production management but also in many other large fields such as: business, construction

# BUSINESS INTELLIGENCE AND SECURITY

- As much as we admit that Analytics applications are extremely powerful, (being that they can process vast amounts of information quickly, extract data with ad hoc queries, and present them in a format that can be easily understood,) we should also be wary of the fact that these same business intelligence software advantages can be potentially subjective to data security vulnerabilities, if the right safeguards are not in place.

- When it comes to Business Intelligence, security considerations can be categorised into four. They are:

➢ Process level Security

➢ System level Security

➢ Object Level Security

➢ Data Level Security

# PROCESS-LEVEL SECURITY

- This refers to the overall set of controls, tests, and procedures a system uses to safeguard data. New data frontiers like social media, mobile e-commerce, and web content performance represent new challenges and opportunities for insight for companies of all sizes. Therefore, any business intelligence vendor you consider should follow all the major standards which include checking for weaknesses using the DREAD methodology, setting up a Secure Development Life Cycle (SDLC) methodology, and running standard audits and penetration tests, in line with the OWASP testing guide. It is recommended that the last security check should be conducted externally, to be certain that all protocols are duly observed and there are no stones unturned

# SYSTEM-LEVEL SECURITY

- The system-level security covers the aspect of individuals who have access to where and what. Security Information and Event Management systems are strong AI analytics solutions in the fore of security tools. The latest security analytics systems are situated as more advanced than SIEM could offer. Threat Analytics/Intelligence solutions, delivered using the cloud are seen as the next generation of security intelligence. This includes authentication, permissions and user management for the application. At a fundamental level, your Business Intelligence platform should permit you to offer a diverse level of access, whether you want the user to view or create dashboards, or manage whole data projects, it is essential that you run encryption for data access, account credentials, and authorisation profiles.

# OBJECT-LEVEL SECURITY

- Object-level security is a tool that manages access to different components within a platform. For example, admin can control which users or groups can access or edit the dashboard and other minor segments. Also, at the interface level, users can have different access to certain features. The scheduler, alerts, ad-hoc analysis, and OLAP functionality can be turned on or off for specific individuals or groups. Additionally, each role or user can have a separate dashboard that can be customised without affecting others.

# DATA-LEVEL SECURITY

- This level of security determines precisely, which data can be viewed by a user inside each data source. Many data breaches are a result of mistakes and improper patches or activities or from employees; therefore, it emphasises sophisticated solutions are needed for strict security protocols that would guide the staff. At the data level, some Business Intelligence vendors offer Virtual Private Models. VPMs are attached to different arms of your security protocol. The VPMs can filter the rows returned by a query, and hide columns or tables. With this level of control, the same report can return different data, depending on the user who runs it. Permissions can also be set on pre-defined queries.

# SURVEY AND FEEDBACK USERS