Video Game Sales
Exploratory Analysis

Aldy Budhi Iskandar

ALDY BUDHI ISKANDAR
Data Scientist & Machine Learning

Projects

Customers Loan Status **Predicting** •
E-Commerce General Customers **Clustering** •
Video Game Sales **Exploratory Data Analysis** •
Shipping Data **Exploratory Data Analysis** •
Python **Data Cleansing** •

Educational

Data Science
May – Sept 2022 at **Dibimbing.id**

Mechanical Engineering
2012 - 2016 at **Polman Bandung**

I'm a Data Scientist who interest in Math Logic and Statistics with a background as an Engineer in several manufacturing companies.

For programming skills, I prefer to use Python programming language, SQL query, & Tableau for visualization, because that's related to the software I always use for my projects.

Data Collecting

Features

Consists of **11** columns that represent the name, genre, platform, publisher, year, and total video game sales by region.

Duration

The data in this dataset consists of video games released from **1980 - 2016**

Quantity

This dataset consists of **16,598** rows, meaning that there are more than 16 thousand video game names sold

Content

All data used is obtained from the Video Game Chart (**https://www.vgchartz.com/**)
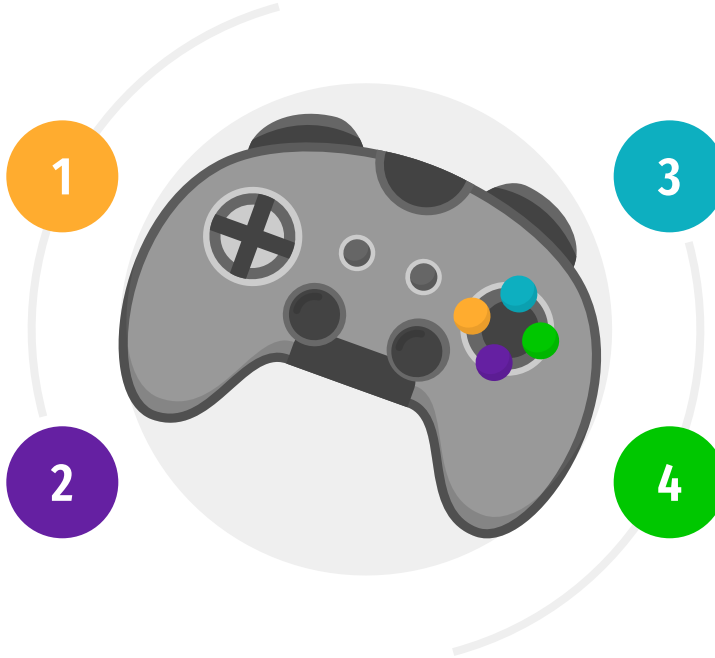
Regional Sales

North America

Total of number video game sales in **North American** region.

1

Europe

Total of number video game sales in **Europe** region.

2

3

Japan

Total of number video game sales in **Japan** region.

4

Global

Total of number video game sales in **the rest of the World**.

Exploratory Data Analysis

A Distribution of quantitative variables.

B Distribution of qualitative variables.

C Analysis of the world's best-selling games.

D Global sales number per game release year.

Distribution of Quantitative Variables
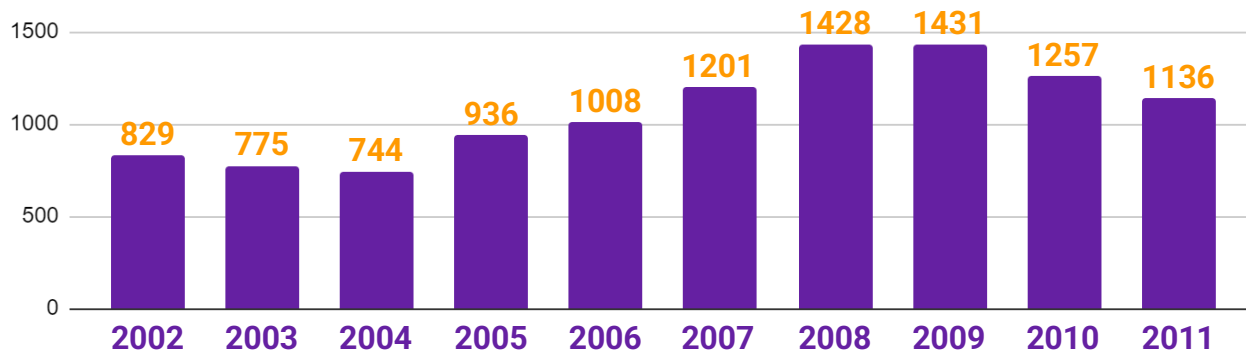
The 10 **most frequent years** in the dataset?
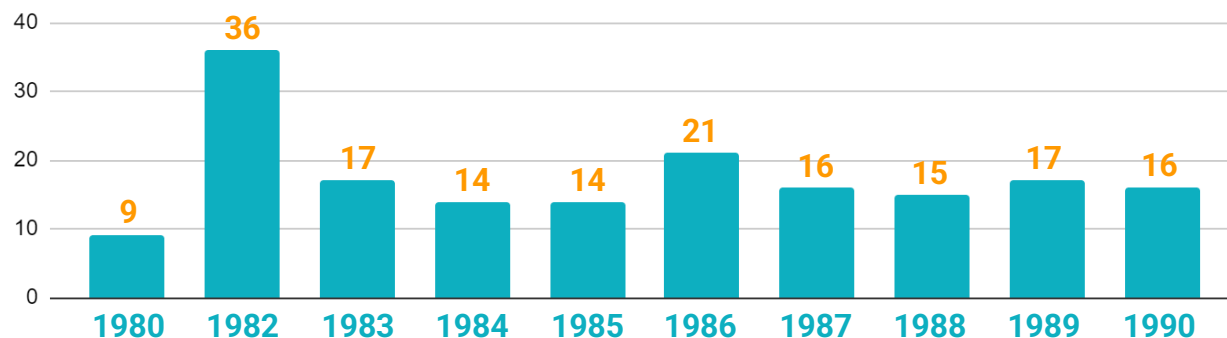
The 10 **least frequent years** in the dataset?

Sales distribution in each region?

The 10 Most Frequent Years in Dataset

The most frequent year release of the game in the dataset was in **2009**, which was **1431** games.
And the average game release in **2002-2011** is **1074.5** games per year.

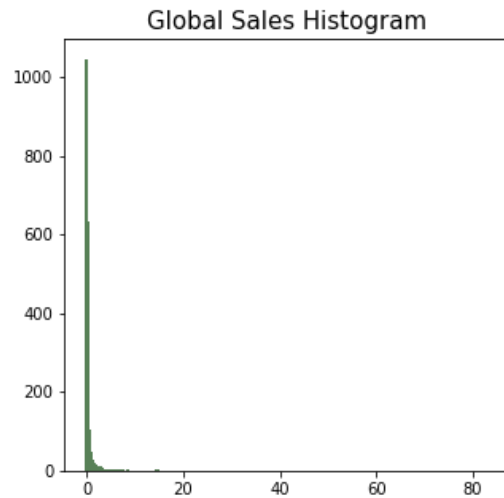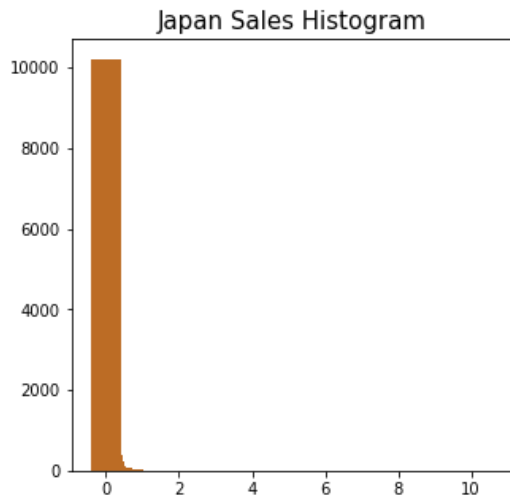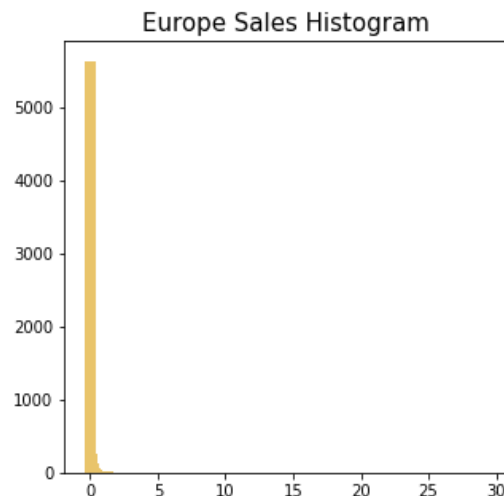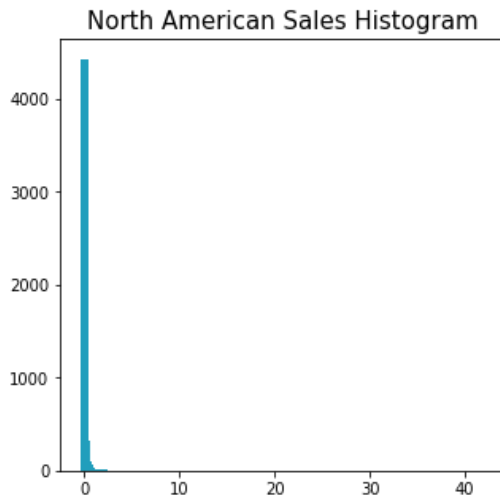# The 10 Least Frequent Years in Dataset

The least frequent year release of the game in the dataset was in **1980**, which was only just **9** games.
And the average game release in **1980-1990** is **17.5** games per year.

Sales Distribution in Each Region

From the sales data per region, it's concluded that sales in each region average between **100K-500K** units per video game.

The type of each video game sold in each region is different, In **North America,** there are **11.8K** types of video games that have sold more than **1M** units/game. In **Europe,** there are **10.4K** types of video games that have sold more than **1M** units/game. And in **Japan**, there are **5.7K** types of video games that have sold more than **1M** units/game.

North American Sales Histogram

Europe Sales Histogram

Japan Sales Histogram

Global Sales Histogram

Distribution of Qualitative Variables

The 5 most frequent **games** in the dataset?

Genre distribution?

The 5 most frequent **gaming platforms** in the dataset?

The 10 most frequent **Publishers** in the dataset?

The 5 Most Frequent Games in The Dataset
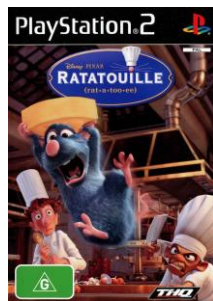

Game	Count
Need For Speed: Most Wanted	12
FIFA 14	9
Ratatouille	9
LEGO Marvel Super Heroes	9
The LEGO Movie Videogame	8

Need For Speed: Most Wanted

FIFA 14

Ratatouille

LEGO Marvel Super Heroes

The LEGO Movie Videogame

The most frequent game in the dataset is **Need For Speed: Most Wanted**, where this game was produced for **10** different platforms and has been remade **2** times in different years.

The 5 Most Frequent Gaming Platforms in The Dataset

The most frequent gaming platform in the dataset is **Nintendo DS**, which means there are **2130** types of video games that use the platform.

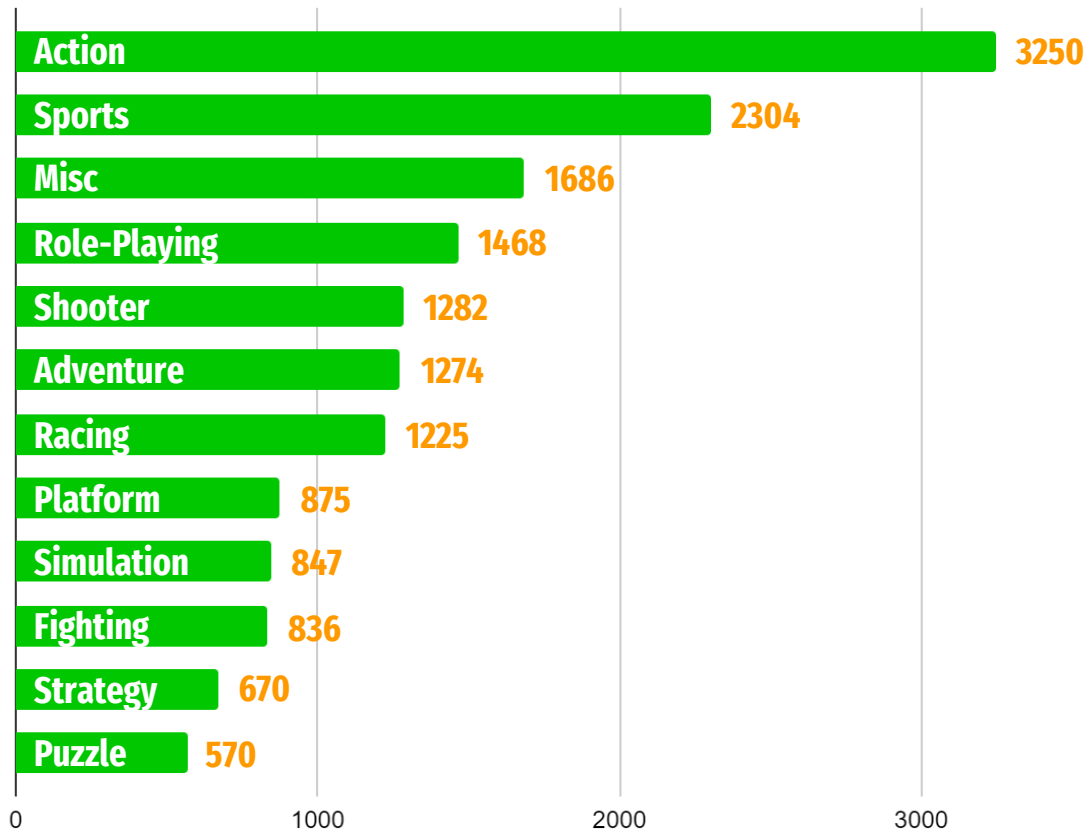| DS	PS2	PS3	Wii	X360
2130	2127	1304	1290	1234

Genre Distribution in Dataset

Genre	Count
Action	3250
Sports	2304
Misc	1686
Role-Playing	1468
Shooter	1282
Adventure	1274
Racing	1225
Platform	875
Simulation	847
Fighting	836
Strategy	670
Puzzle	570

Action

There are a total of **3250** games with the **Action** genre in this dataset
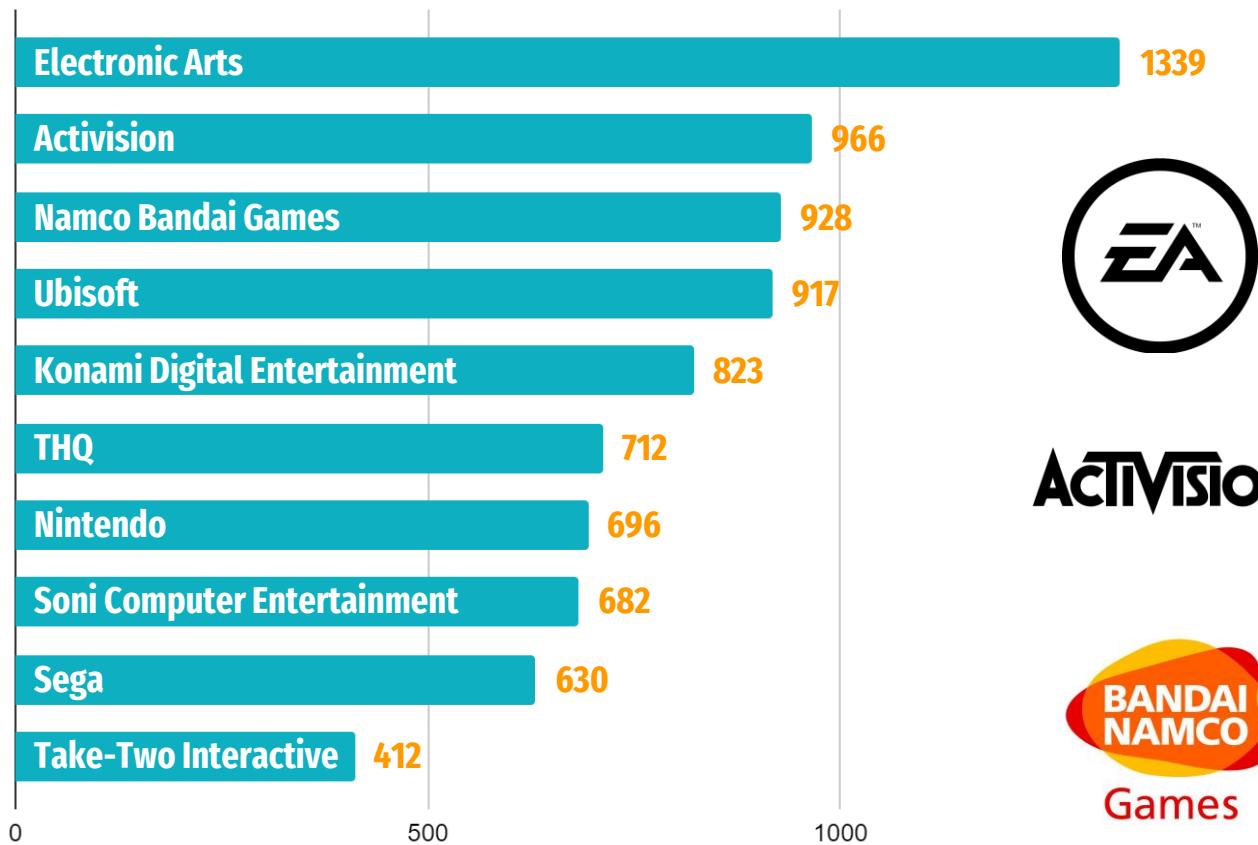
Sports

There are a total of **2304** games with the **Sports** genre in this dataset

Misc

There are a total of **1686** games with the **Misc** genre in this dataset

The 10 Most Frequent Publishers in The Dataset

Publisher	Count
Electronic Arts	1339
Activision	966
Namco Bandai Games	928
Ubisoft	917
Konami Digital Entertainment	823
THQ	712
Nintendo	696
Soni Computer Entertainment	682
Sega	630
Take-Two Interactive	412

There are a total of **1339** video games published by **Electronic Arts** publisher.

There are a total of **966** video games published by **Activision** publisher.

There are a total of **928** video games published by **Namco Bandai Games** publisher.

Analysis of The World's Best-Selling Games

1 The 5 best-selling games in each region?

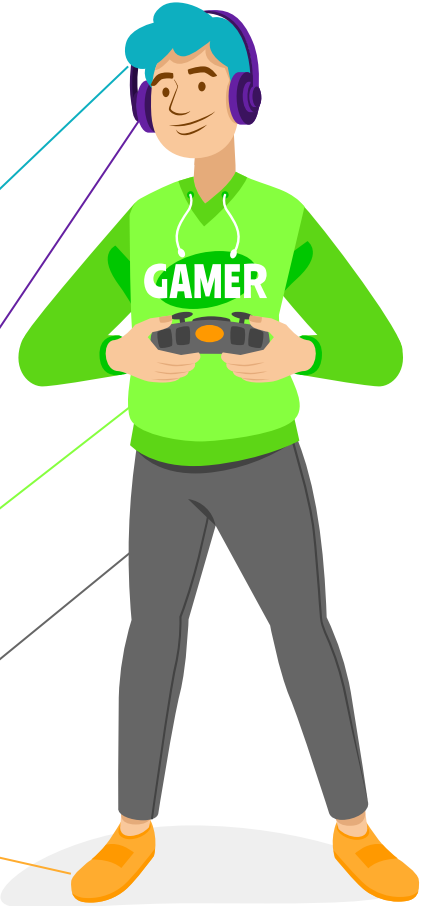**2** The 5 best-selling games in the world were released from 1990 to 2000?

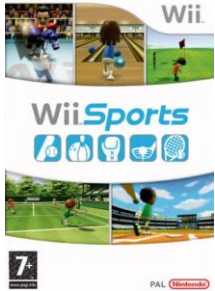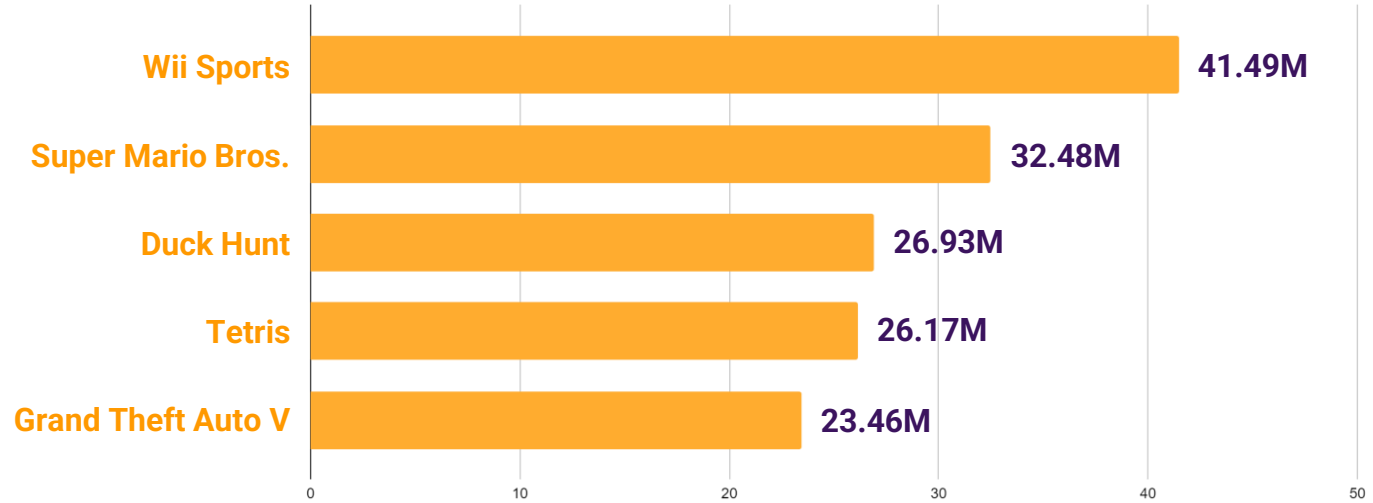**3** The 5 platforms with the highest number of game sales in the world?

4 Best selling genres in the world?

5 The 5 publishers with the most sales?

The 5 Best-Selling Games in North America

Game	Sales
Wii Sports	41.49M
Super Mario Bros.	32.48M
Duck Hunt	26.93M
Tetris	26.17M
Grand Theft Auto V	23.46M

0   10   20   30   40   50
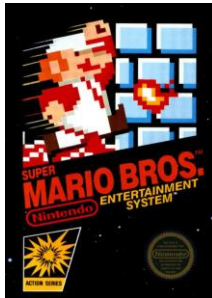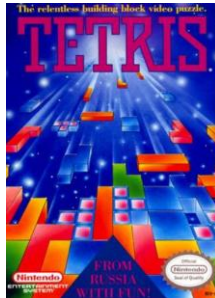
Wii Sports

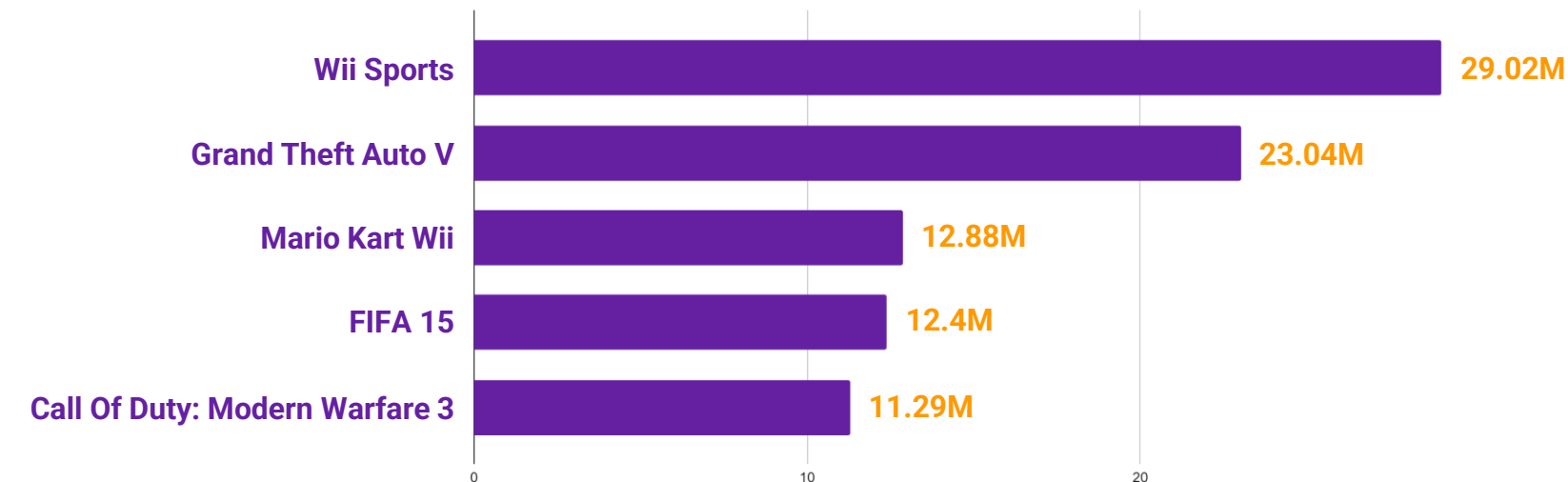**Super Mario Bros.**

Duck Hunt

Tetris

Grand Theft Auto V

In **North America**, people rather play **Wii Sports**, where this game has sold **41.49 Million** items in that region.

The 5 Best-Selling Games in Europe

Game	Sales
Wii Sports	29.02M
Grand Theft Auto V	23.04M
Mario Kart Wii	12.88M
FIFA 15	12.4M
Call Of Duty: Modern Warfare 3	11.29M

Wii Sports
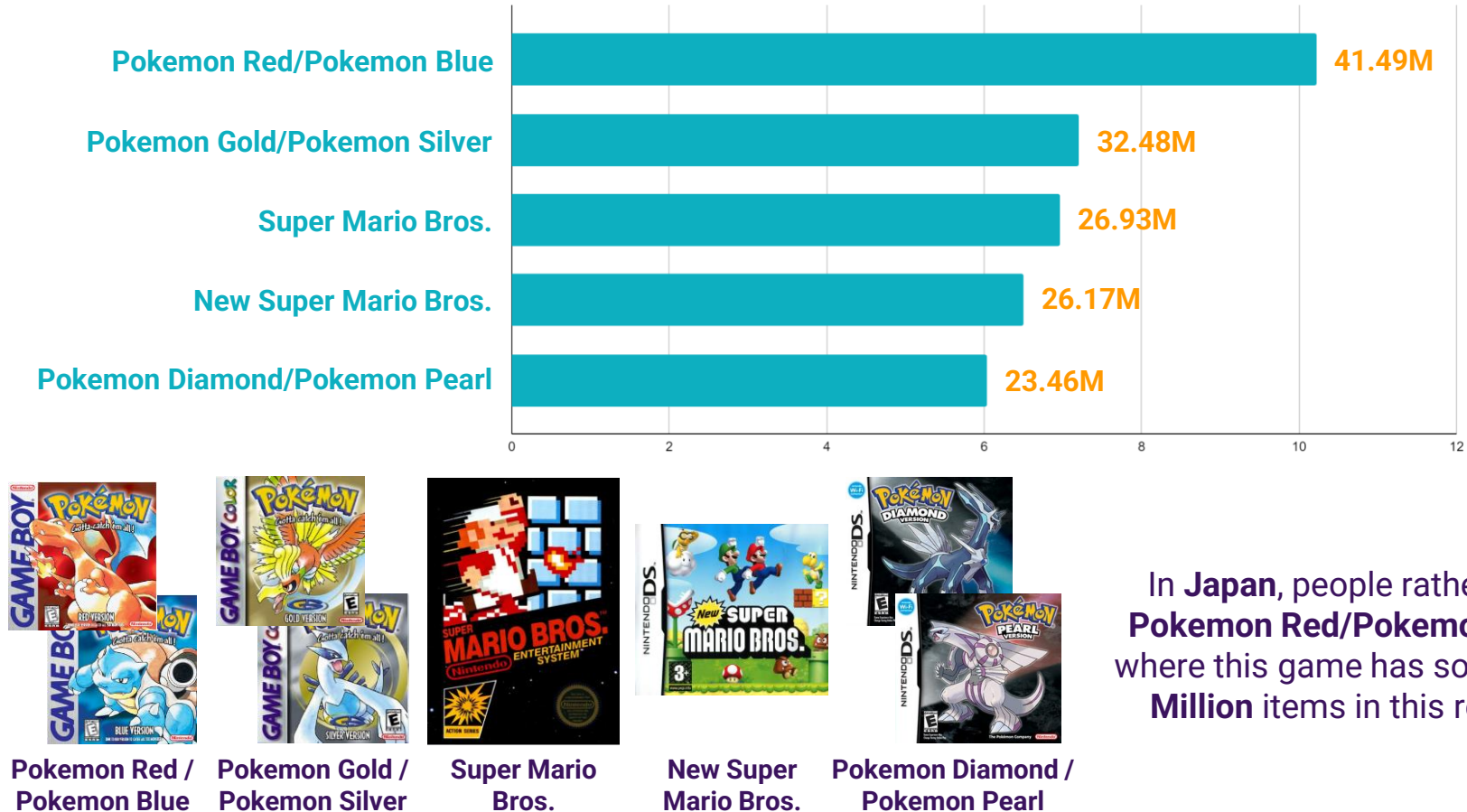
Grand Theft Auto V

Mario Kart Wii

FIFA 15

Call Of Duty: Modern Warfare 3

In **Europe**, people rather play **Wii Sports**, where this game has sold **29.02 Million** items in this region.

The 5 Best-Selling Games in Japan

Game	Sales
Pokemon Red/Pokemon Blue	41.49M
Pokemon Gold/Pokemon Silver	32.48M
Super Mario Bros.	26.93M
New Super Mario Bros.	26.17M
Pokemon Diamond/Pokemon Pearl	23.46M

Pokemon Red / Pokemon Blue

Pokemon Gold / Pokemon Silver

Super Mario Bros.

New Super Mario Bros.

Pokemon Diamond / Pokemon Pearl

In **Japan**, people rather play **Pokemon Red/Pokemon Blue**, where this game has sold **41.49 Million** items in this region.

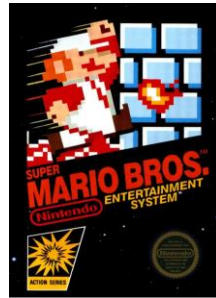# The 5 Best-Selling Games in The Rest of The World

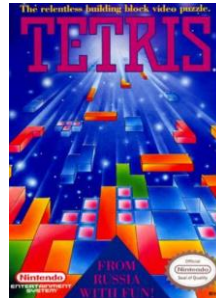| Game	Sales
Wii Sports	82.74M
Grand Theft Auto V	55.92M
Super Mario Bros.	45.31M
Tetris	35.84M
Mario Kart Wii	35.82M
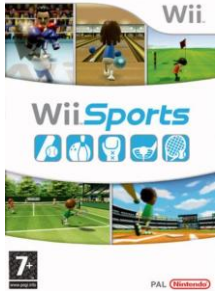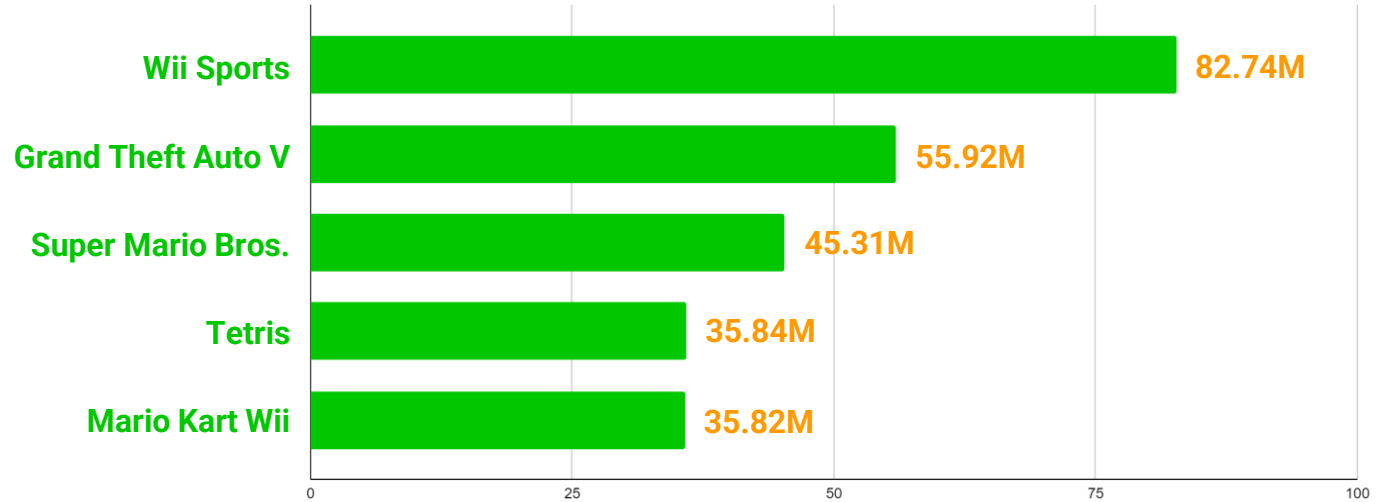
Wii Sports
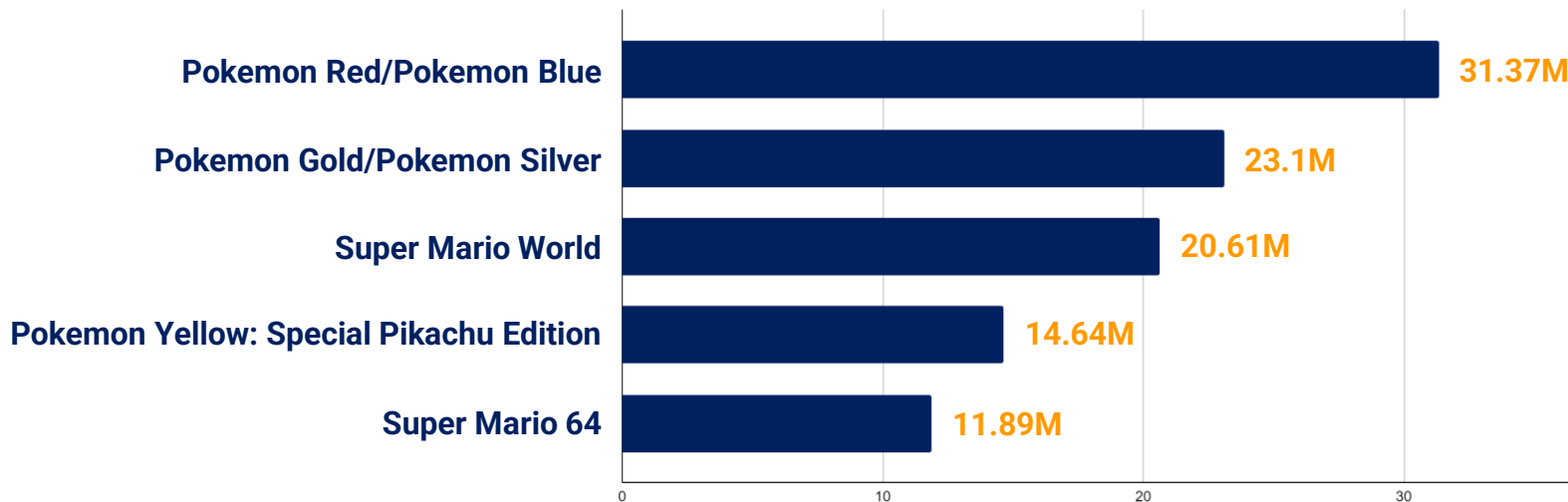
Grand Theft Auto V

Super Mario Bros.

Tetris

Mario Kart Wii

The best-selling game in **The Rest of The World** is **Wii Sports**, where this game has sold **82.74 Million** items.
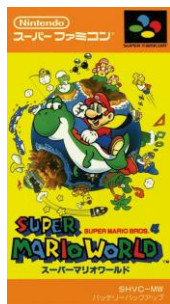
The 5 Best-Selling Games in The World were Released from 1990 to 2000

Game	Sales
Pokemon Red/Pokemon Blue	31.37M
Pokemon Gold/Pokemon Silver	23.1M
Super Mario World	20.61M
Pokemon Yellow: Special Pikachu Edition	14.64M
Super Mario 64	11.89M

Pokemon Red /
Pokemon Blue

Pokemon Gold /
Pokemon Silver

Super Mario
World

Pokemon
Yellow

Super Mario 64

The best-selling game **Released from 1990 to 2000** in **The Rest of The World** is **Pokemon Red / Pokemon Blue**, where this game has sold **31.37 Million** items.

The 5 Platforms with The Highest Number of Game Sales in The World

The gaming platform with the highest number of global game sales is **Playstation 2**, which is **1.23 Billion** items sold.
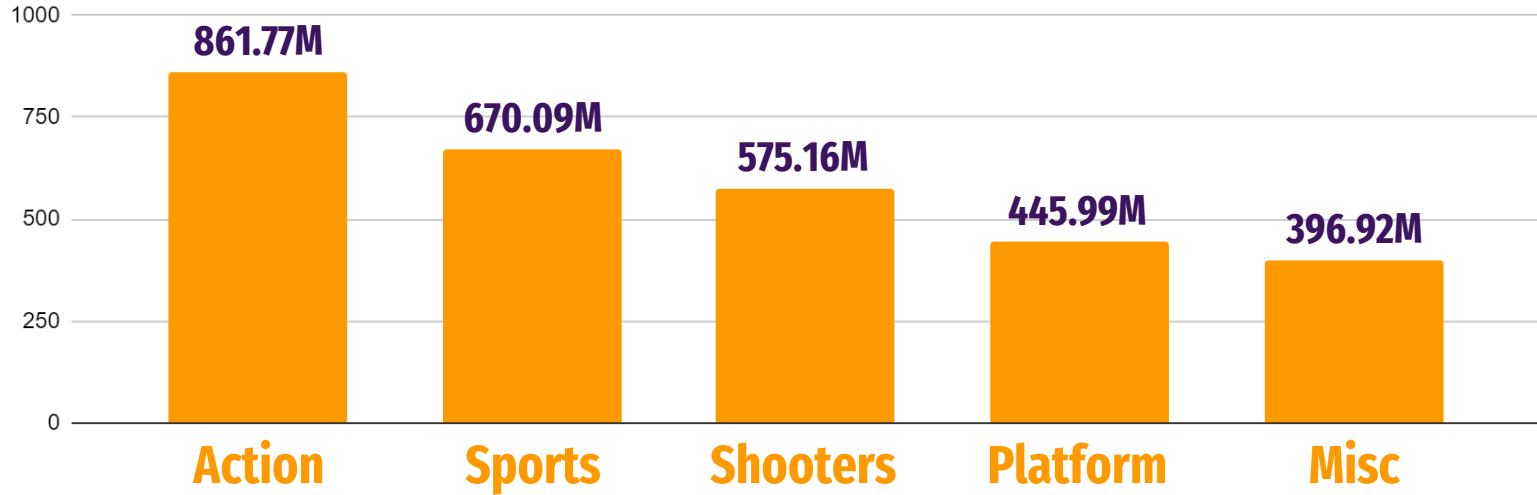
PS2
1,233.46M

X360
969.6M

PS3
949.35M

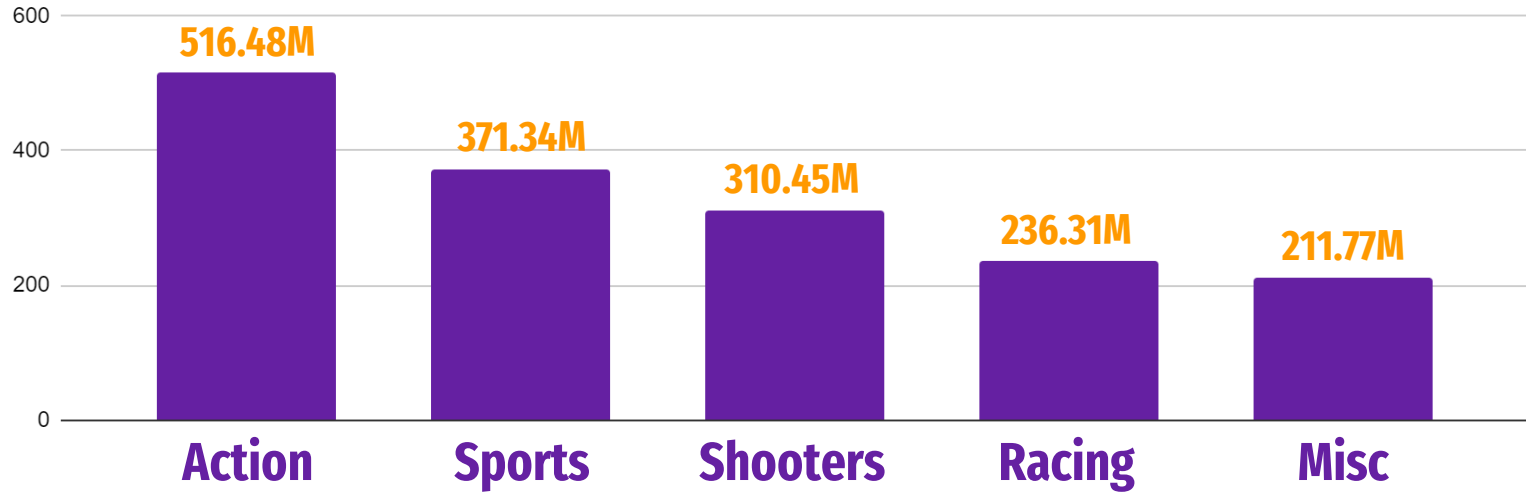## Wii
909.81M

DS
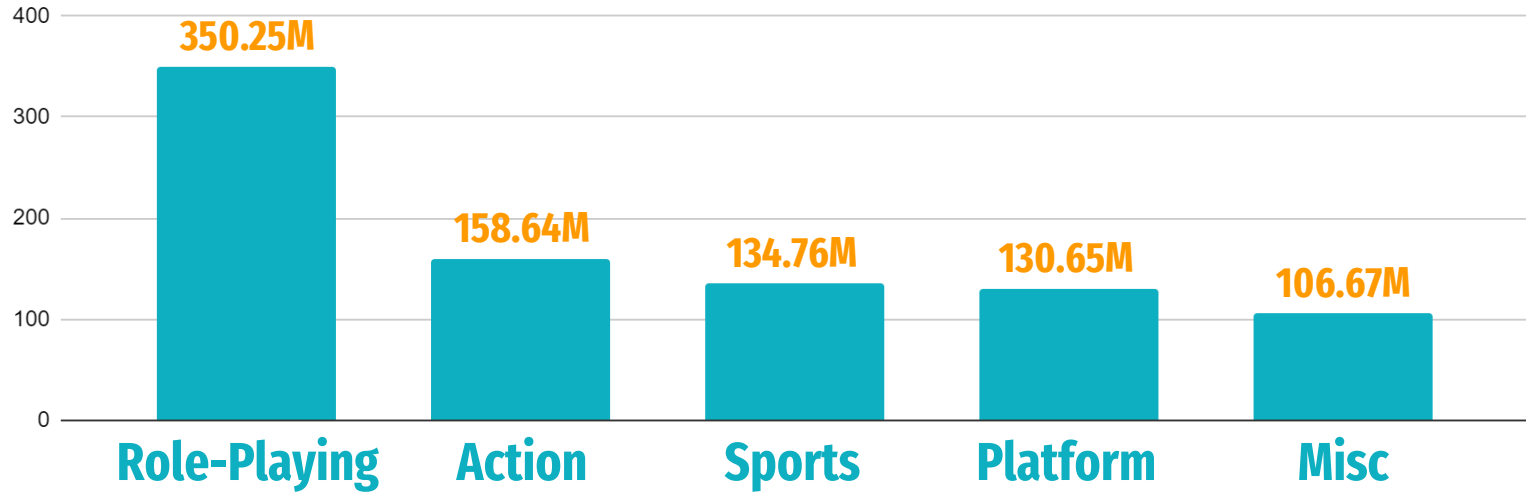**818.62M**

Best-Selling Genre in North America

People in **North America** like action genre games, and the sales of this kind of game are very high in this region, having sold **861.77 Million** action game items.

Best-Selling Genre in Japan

People in **Europe** are almost the same as people in **North America**, who like action genre games, and the sales of this game are very high in this region, having sold **516.48 Million** action game items.
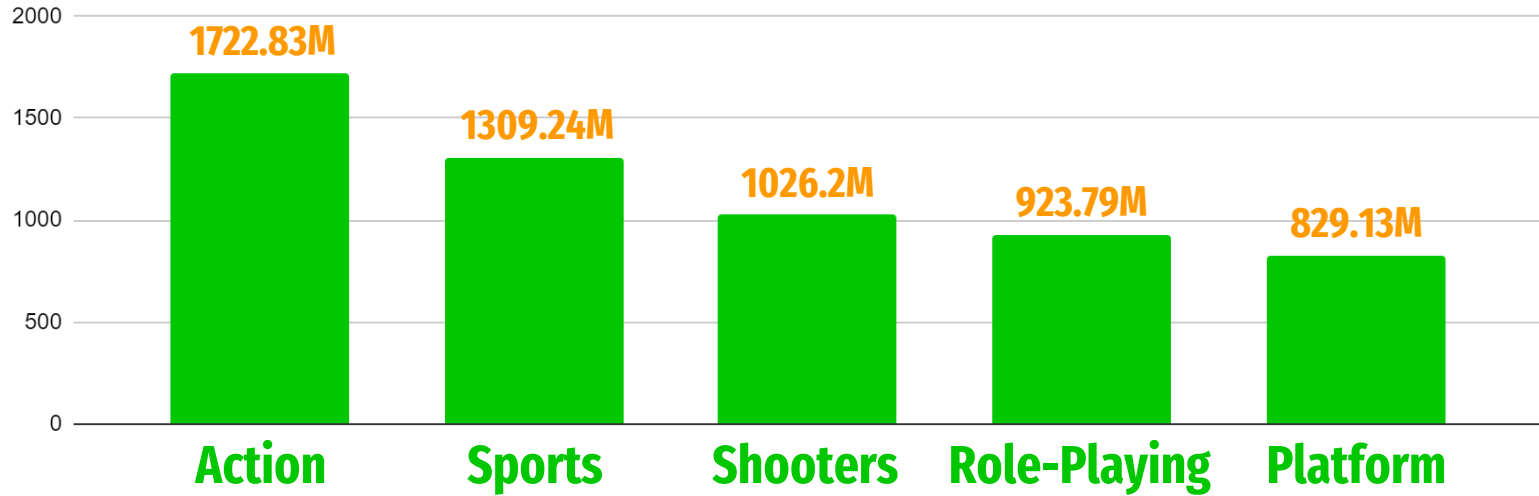
Best-Selling Genre in Europe
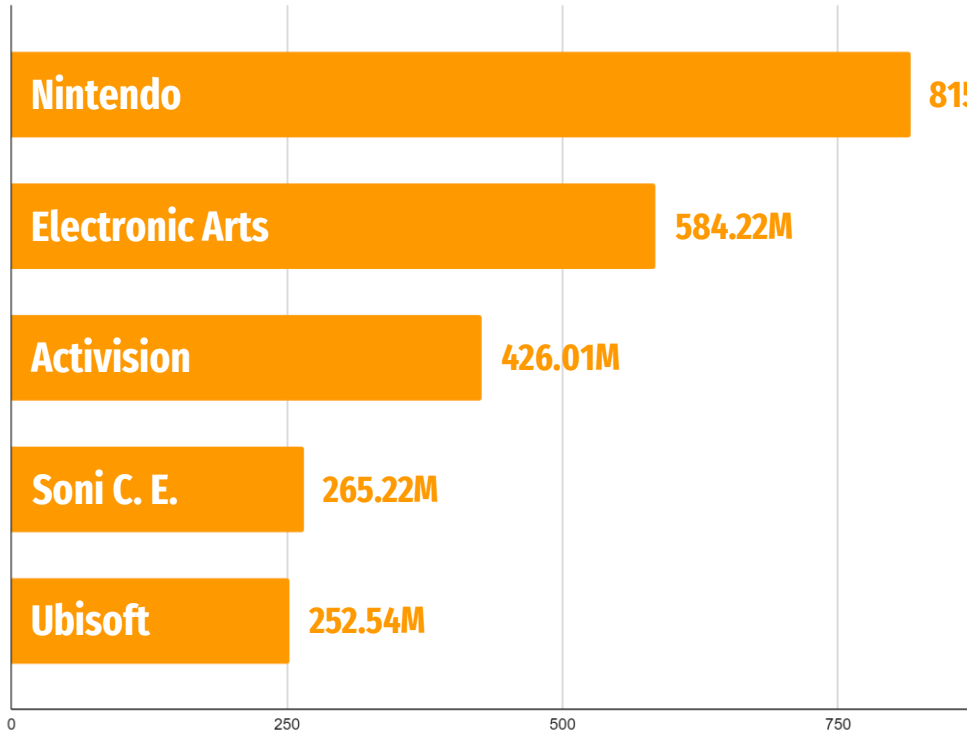

People in **Japan** like **Role-Playing** genre games, and the sales of this kind of game are very high in this region, having sold **350.25 Million** Role-Playing game items.
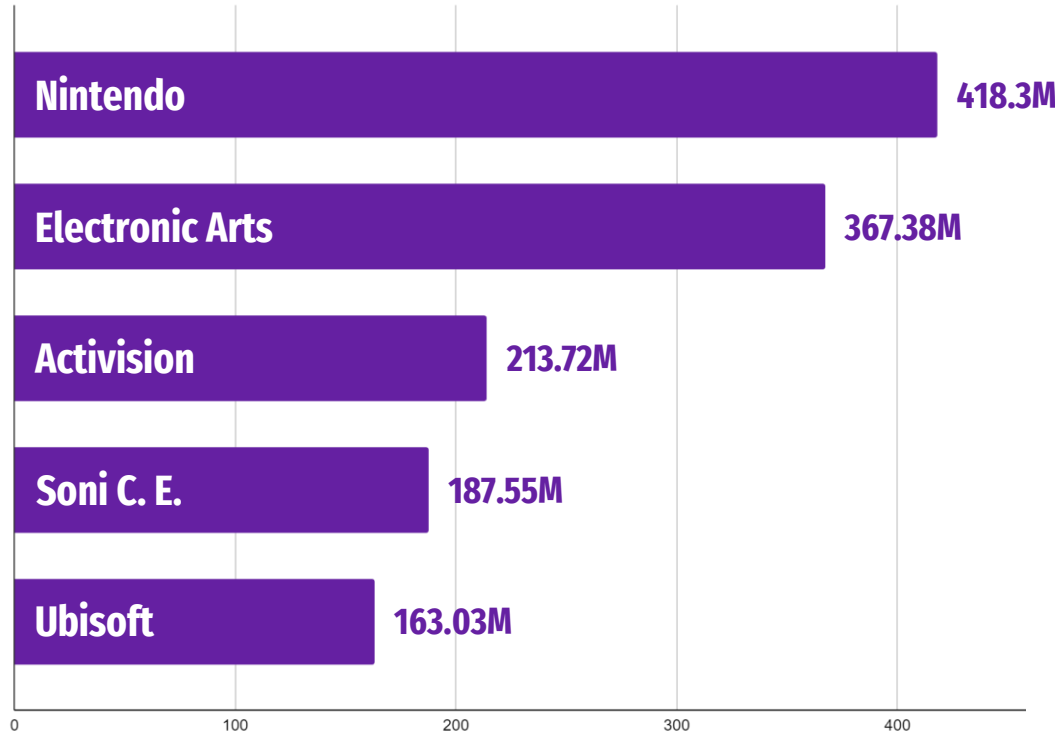
Best-Selling Genre in The Rest of The World

People in **The World** like action genre games, and the sales of this kind of game are very high in the world, having sold **1.72 Billion** action game items.

Best-Selling Publishers in North America

Publisher	Sales
Nintendo	815.75M
Electronic Arts	584.22M
Activision	426.01M
Soni C. E.	265.22M
Ubisoft	252.54M

Nintendo®

EA™ ACTIVISION®

People in **North America** buy more video game products published by **Nintendo**, and the total number of Nintendo products that have been sold in these region has reached **815.75 Million** items. Followed by **EA Games** and **Activision**.
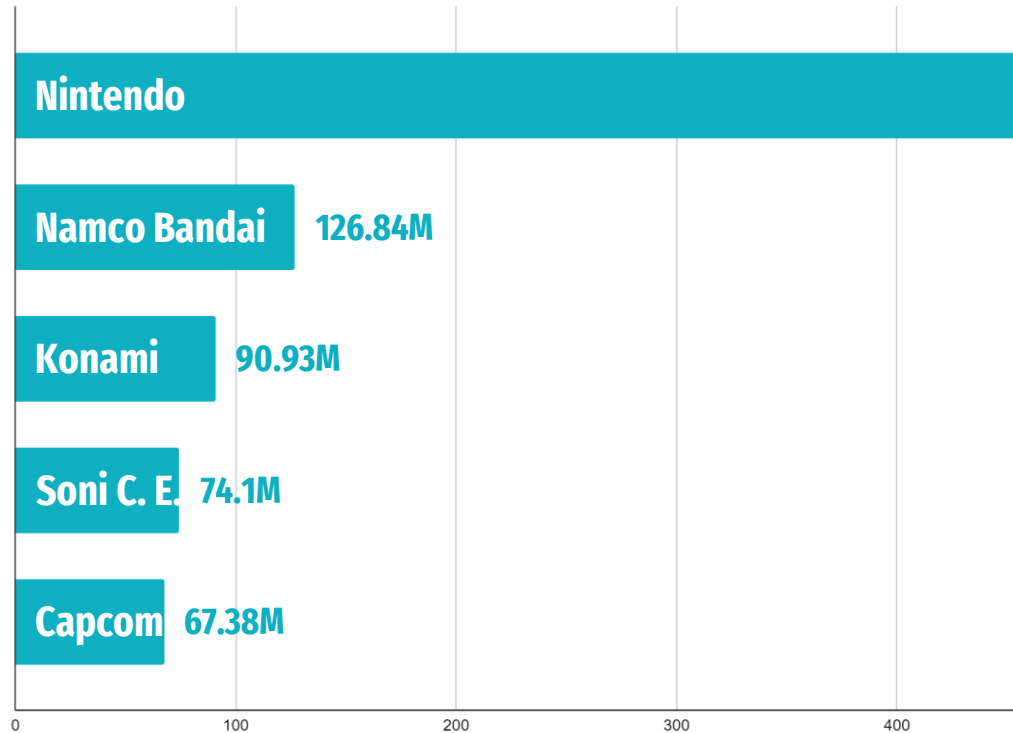
Best-Selling Publishers in Europe

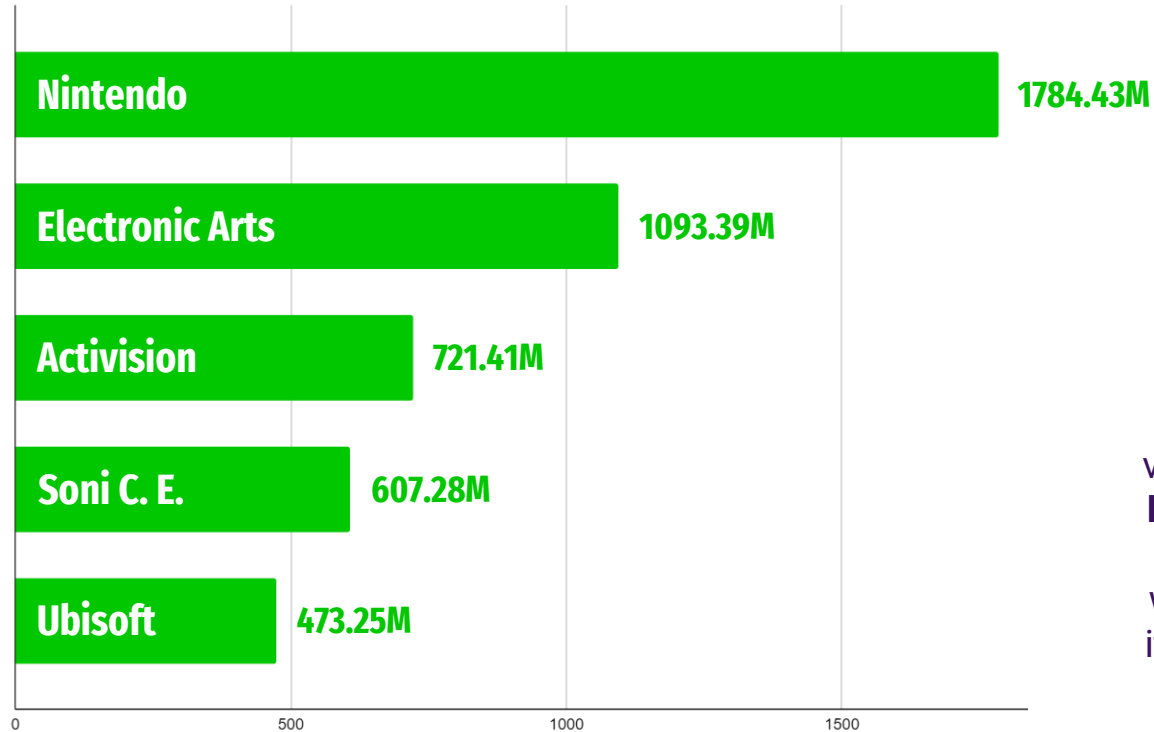| Publisher	Sales
Nintendo	418.3M
Electronic Arts	367.38M
Activision	213.72M
Soni C. E.	187.55M
Ubisoft	163.03M

People in **Europe** as same like **North American** people, buy more video game products published by **Nintendo**, and the total number of Nintendo products that have been sold in Europe has reached **418.3 Million** items. Followed by **EA Games** and **Activision**.

Best-Selling Publishers in North America

| Publisher	Sales
Nintendo	454.99M
Namco Bandai	126.84M
Konami	90.93M
Soni C. E.	74.1M
Capcom	67.38M

People in **Japan** buy more video game products published by **Nintendo**, and the total number of Nintendo products that have been sold in these region has reached **454.99 Million** items. Followed by **Namco Bandai** and **Konami**.

Best-Selling Publishers in North America

Publisher	Sales
Nintendo	1784.43M
Electronic Arts	1093.39M
Activision	721.41M
Soni C. E.	607.28M
Ubisoft	473.25M

People in **The World** buy more video game products published by **Nintendo**, and the total number of Nintendo products sold in the world has reached **815.75 Million** items. Followed by **EA Games** and **Activision**.

Global Sales Number per Game Release Year
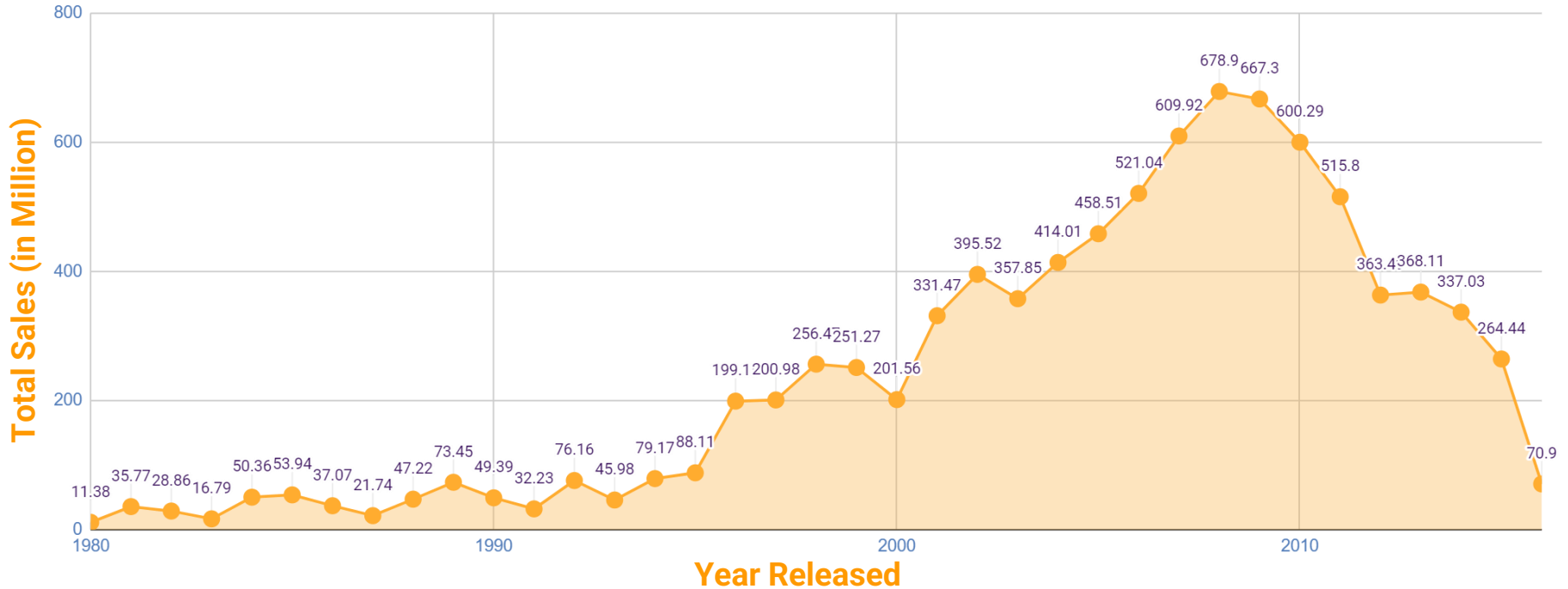
The highest total sales globally is **678.9 M** items of video games **released in 2008**.

The lowest total sales globally are only sold **11.38 M** items of video games **released in 1980**.

Business Insight
(Games Genre)

North America

To get a high profit from selling games in this region, it's better to sell the **Action genre**.
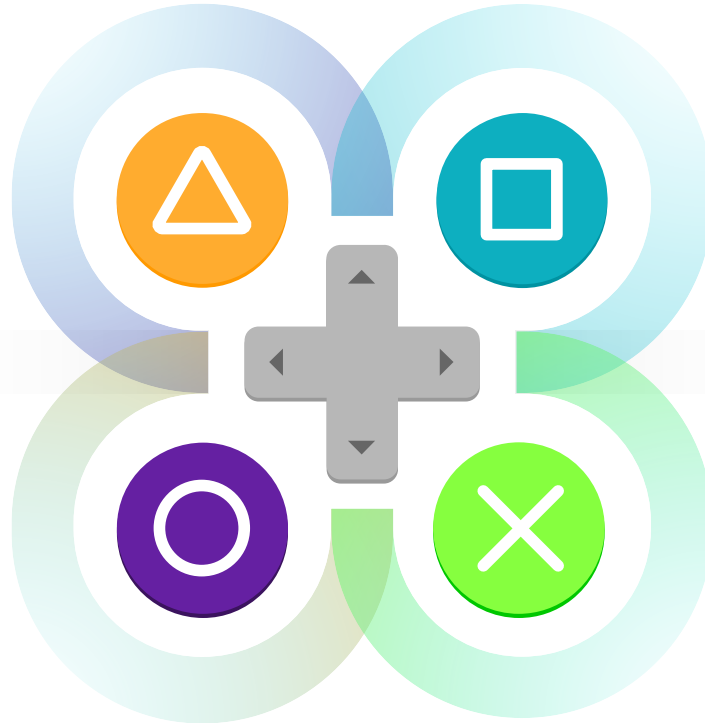
Europe

To get a high profit from selling games in this region, it's better to sell the **Action genre**.

Japan

To get a high profit from selling games in this region, it's better to sell the **Role-Playing genre**.

Global

In fact, games with the **action genre** are more in demand by **gamers around the world**.

Business Insight
(Games Genre)

In other words, the **more selling games in the Action genre**, the **more chance that the game will sell well** worldwide because of Dominant gamers around the world like games in the **Action genre**, especially gamers in North America and Europe.

As a company engaged in the business of selling video games, it's better to stock up on **Action games** than other genres, the **chances of selling them are higher** than games with other genres.

REFERENCES

- https://www.vgchartz.com/
- https://www.geeksforgeeks.org/bar-plot-in-matplotlib/
- https://slidesgo.com/theme/gaming-infographics#search-game&position-1&results-199&rs=search

THANK YOU!

Have any questions?
aldybudhi003@gmail.com
+62 896 5729 1021
www.linkedin.com/in/aldybudhi/
www.github.com/qodym

Let's Check out my python code Jupyter notebook!
Don't hesitate to contact me if you want to do
some corrections or discuss!

#DataAnalyst #ExploratoryDataAnalysis