Video Games Analysis Dashboard Report

Foundations Of Data Science
(UCS548)

ODD Semester 2022-2023
B.E. Third Year
Thapar Institute of Engineering and Technology, Patiala

Submitted By:
Radhika Aggarwal (102003313)
COE-13

Submitted To:
Sushma Jain

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About Dataset

https://www.kaggle.com/datasets/gregorut/videogamesales

This dataset contains a list of video games with sales greater than 100,000 copies.
Fields include

- • Rank - Ranking of overall sales
- • Name - The games name
- Platform - Platform of the game’s release (i.e., PC, PS4, etc.)
- • Year - Year of the game's release
- • Genre - Genre of the game
- • Publisher - Publisher of the game
- • NA_Sales - Sales in North America (in millions)
- • EU_Sales - Sales in Europe (in millions)
- • JP_Sales - Sales in Japan (in millions)
- • Other_Sales - Sales in the rest of the world (in millions)
- • Global_Sales - Total worldwide sales.

There are 16,598 records. 2 records were dropped due to incomplete information.

Data Pre-Processing in R Studio

Dataset Used

The following Datasets are used for the analysis shown in the Dashboard. Dataset is pre-Processed before the analysis, such as Checking and Removing NA Values, dropping non-essential columns, shortening long string values, flooring of age column, etc.

- Dataset1 used contains 16599 Rows and 6 Columns.

	A	B	C	D	E	F	G	H
1	Rank	Name	Platform	Year	Genre	Publisher		
2	1	Wii Sports	Wii	2006	Sports	Nintendo		
3	2	Super Mar	NES	1985	Platform	Nintendo		
4	3	Mario Kar	Wii	2008	Racing	Nintendo		
5	4	Wii Sports	Wii	2009	Sports	Nintendo		
6	5	Pokemon	GB	1996	Role-Playi	Nintendo		
7	6	Tetris	GB	1989	Puzzle	Nintendo		
8	7	New Supe	DS	2006	Platform	Nintendo		
9	8	Wii Play	Wii	2006	Misc	Nintendo		
10	9	New Supe	Wii	2009	Platform	Nintendo		
11	10	Duck Hunt	NES	1984	Shooter	Nintendo		
12	11	Nintendog	DS	2005	Simulatior	Nintendo		
13	12	Mario Kar	DS	2005	Racing	Nintendo		
14	13	Pokemon	GB	1999	Role-Playi	Nintendo		
15	14	Wii Fit	Wii	2007	Sports	Nintendo		
16	15	Wii Fit Plu	Wii	2009	Sports	Nintendo		
17	16	Kinect Adv	X360	2010	Misc	Microsoft Game Studios		
18	17	Grand The	PS3	2013	Action	Take-Two Interactive		
19	18	Grand The	PS2	2004	Action	Take-Two Interactive		
20	19	Super Mar	SNES	1990	Platform	Nintendo		
21	20	Brain Age:	DS	2005	Misc	Nintendo		
22	21	Pokemon	DS	2006	Role-Playi	Nintendo		

- Dataset 2 used contains 16599 Rows and 1 Column.

	A	B	C
1	NA_Sales		
2	41.49		
3	29.08		
4	15.85		
5	15.75		
6	11.27		
7	23.2		
8	11.38		
9	14.03		
10	14.59		
11	26.93		
12	9.07		
13	9.81		
14	9		
15	8.94		
16	9.09		
17	14.97		
18	7.01		
19	9.43		
20	12.78		
21	4.75		

- Dataset 3 used contains 16599 Rows and 2 Column

EU_Sales
29.02
3.58
12.88
11.01
8.89
2.26
9.23
9.2
7.06
0.63
11
7.57
6.18
8.03
8.59
4.94
9.27
0.4
3.75
9.26
4.52

- Dataset 4 used contains 16599 Rows and 1 Column.

A	B
JP_Sales	
3.77	
6.81	
3.79	
3.28	
10.22	
4.22	
6.5	
2.93	
4.7	
0.28	
1.93	
4.13	
7.2	
3.6	
2.53	
0.24	
0.97	
0.41	
3.54	
4.16	

- Dataset 5 used contains 16599 Rows and 1 Column.

Other_Sales
8.46
0.77
3.31
2.96
1
0.58
2.9
2.85
2.26
0.47
2.75
1.92
0.71
2.15
1.79
1.67
4.14
10.57
0.55
2.05

Importing the dplyr:

```
> #Importing a library
> library(dplyr)
>
```

Importing the Dataset

Dataset 1

```
> dataset<-read.csv("vgsales.csv")
> head(dataset)
  Rank                     Name Platform Year         Genre Publisher
1    1               Wii Sports      Wii 2006        Sports  Nintendo
2    2        Super Mario Bros.      NES 1985      Platform  Nintendo
3    3           Mario Kart Wii      Wii 2008        Racing  Nintendo
4    4        Wii Sports Resort      Wii 2009        Sports  Nintendo
5    5 Pokemon Red/Pokemon Blue       GB 1996  Role-Playing  Nintendo
6    6                   Tetris       GB 1989        Puzzle  Nintendo
>
```

Dataset 2

```
> NASales<-read.csv("nasales.csv")
> head(NASales)
  NA_Sales
1    41.49
2    29.08
3    15.85
4    15.75
5    11.27
6    23.20
```

Dataset 3

```
> JPSales<-read.csv("jpsales.csv")
> head(JPSales)
  JP_Sales
1     3.77
2     6.81
3     3.79
4     3.28
5    10.22
6     4.22
```

Dataset 4

```
> EUSales<-read.csv("eusales.csv")
> head(EUSales)
  EU_Sales
1    29.02
2     3.58
3    12.88
4    11.01
5     8.89
6     2.26
```

Dataset 5

```
> OtherSales<-read.csv("other.csv")
> head(OtherSales)
  Other_Sales
1        8.46
2        0.77
3        3.31
4        2.96
5        1.00
6        0.58
```

Combine data from multiple CSV files into single dataframe

```
> #Binding different csv files in 1
> data<-cbind(dataset, NASales, JPSales, EUSales, OtherSales)
> head(data)
  Rank                     Name Platform Year         Genre Publisher
1    1               Wii Sports      Wii 2006        Sports  Nintendo
2    2        Super Mario Bros.      NES 1985      Platform  Nintendo
3    3           Mario Kart Wii      Wii 2008        Racing  Nintendo
4    4        Wii Sports Resort      Wii 2009        Sports  Nintendo
5    5 Pokemon Red/Pokemon Blue       GB 1996 Role-Playing  Nintendo
6    6                   Tetris       GB 1989        Puzzle  Nintendo
  NA_Sales JP_Sales EU_Sales Other_Sales
1    41.49     3.77    29.02        8.46
2    29.08     6.81     3.58        0.77
3    15.85     3.79    12.88        3.31
4    15.75     3.28    11.01        2.96
5    11.27    10.22     8.89        1.00
6    23.20     4.22     2.26        0.58
```

Adding a new column, 'GlobalSales' containing total worldwide sales Replacing

```
> #Adding a coloum of total sales
> finalData <- mutate(data, Global_Sales = (NA_Sales+JP_Sales+EU_Sales+Othe
r_Sales))
> head(finalData)
  Rank                     Name Platform Year         Genre Publisher
1    1               Wii Sports      Wii 2006        Sports  Nintendo
2    2        Super Mario Bros.      NES 1985      Platform  Nintendo
3    3           Mario Kart Wii      Wii 2008        Racing  Nintendo
4    4        Wii Sports Resort      Wii 2009        Sports  Nintendo
5    5 Pokemon Red/Pokemon Blue       GB 1996 Role-Playing  Nintendo
6    6                   Tetris       GB 1989        Puzzle  Nintendo
  NA_Sales JP_Sales EU_Sales Other_Sales Global_Sales
1    41.49     3.77    29.02        8.46        82.74
2    29.08     6.81     3.58        0.77        40.24
3    15.85     3.79    12.88        3.31        35.83
4    15.75     3.28    11.01        2.96        33.00
5    11.27    10.22     8.89        1.00        31.38
6    23.20     4.22     2.26        0.58        30.26
```

Replacing “N/A” with NA

```
> #Replacing “N/A” with NA
> finalData[finalData== "N/A"] = NA
> sum(is.na(finalData))
[1] 329
```

Removing NA values

```
> # Removing NA values
> # Removing NA values
> library("tidyr")
> finalData<- finalData%>% drop_na()
> sum(is.na(finalData))
[1] 0
```

Structure of final dataframe

```
> #Structure of final dataframe
> str(finalData)
'data.frame':   16291 obs. of  11 variables:
 $ Rank        : int  1 2 3 4 5 6 7 8 9 10 ...
 $ Name        : chr  "Wii Sports" "Super Mario Bros." "Mario Kart Wii" "Wii Sports Resort" ...
 $ Platform    : chr  "Wii" "NES" "Wii" "Wii" ...
 $ Year        : chr  "2006" "1985" "2008" "2009" ...
 $ Genre       : chr  "Sports" "Platform" "Racing" "Sports" ...
 $ Publisher   : chr  "Nintendo" "Nintendo" "Nintendo" "Nintendo" ...
 $ NA_Sales    : num  41.5 29.1 15.8 15.8 11.3 ...
 $ JP_Sales    : num  3.77 6.81 3.79 3.28 10.22 ...
 $ EU_Sales    : num  29.02 3.58 12.88 11.01 8.89 ...
 $ Other_Sales : num  8.46 0.77 3.31 2.96 1 0.58 2.9 2.85 2.26 0.47 ...
 $ Global_Sales: num  82.7 40.2 35.8 33 31.4 ...
```

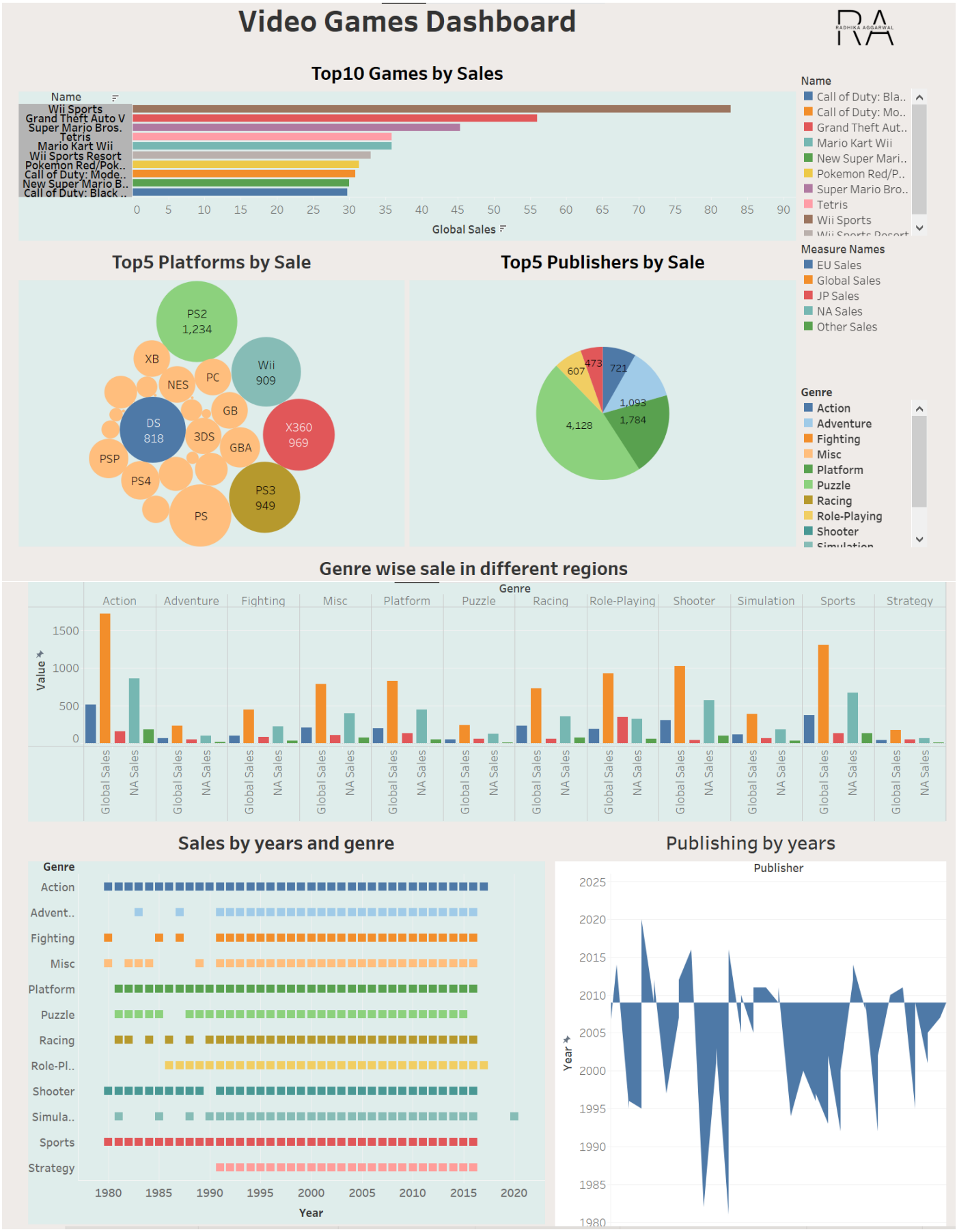
Summary of final Dataframe

```
> #Summary of final Dataframe
> summary(finalData)
      Rank           Name              Platform             Year              Genre          
 Min.   :    1   Length:16291       Length:16291       Length:16291       Length:16291      
 1st Qu.: 4132   Class :character   Class :character   Class :character   Class :character  
 Median : 8292   Mode  :character   Mode  :character   Mode  :character   Mode  :character  
 Mean   : 8290                                                                             
 3rd Qu.:12440                                                                             
 Max.   :16600                                                                             
  Publisher            NA_Sales          JP_Sales          EU_Sales       
 Length:16291       Min.   : 0.0000   Min.   : 0.00000   Min.   : 0.0000  
 Class :character   1st Qu.: 0.0000   1st Qu.: 0.00000   1st Qu.: 0.0000  
 Mode  :character   Median : 0.0800   Median : 0.00000   Median : 0.0200  
                    Mean   : 0.2656   Mean   : 0.07883   Mean   : 0.1477  
                    3rd Qu.: 0.2400   3rd Qu.: 0.04000   3rd Qu.: 0.1100  
                    Max.   :41.4900   Max.   :10.22000   Max.   :29.0200  
  Other_Sales        Global_Sales    
 Min.   : 0.00000   Min.   : 0.0000  
 1st Qu.: 0.00000   1st Qu.: 0.0600  
 Median : 0.01000   Median : 0.1700  
 Mean   : 0.04843   Mean   : 0.5406  
 3rd Qu.: 0.04000   3rd Qu.: 0.4800  
 Max.   :10.57000   Max.   :82.7400  
```

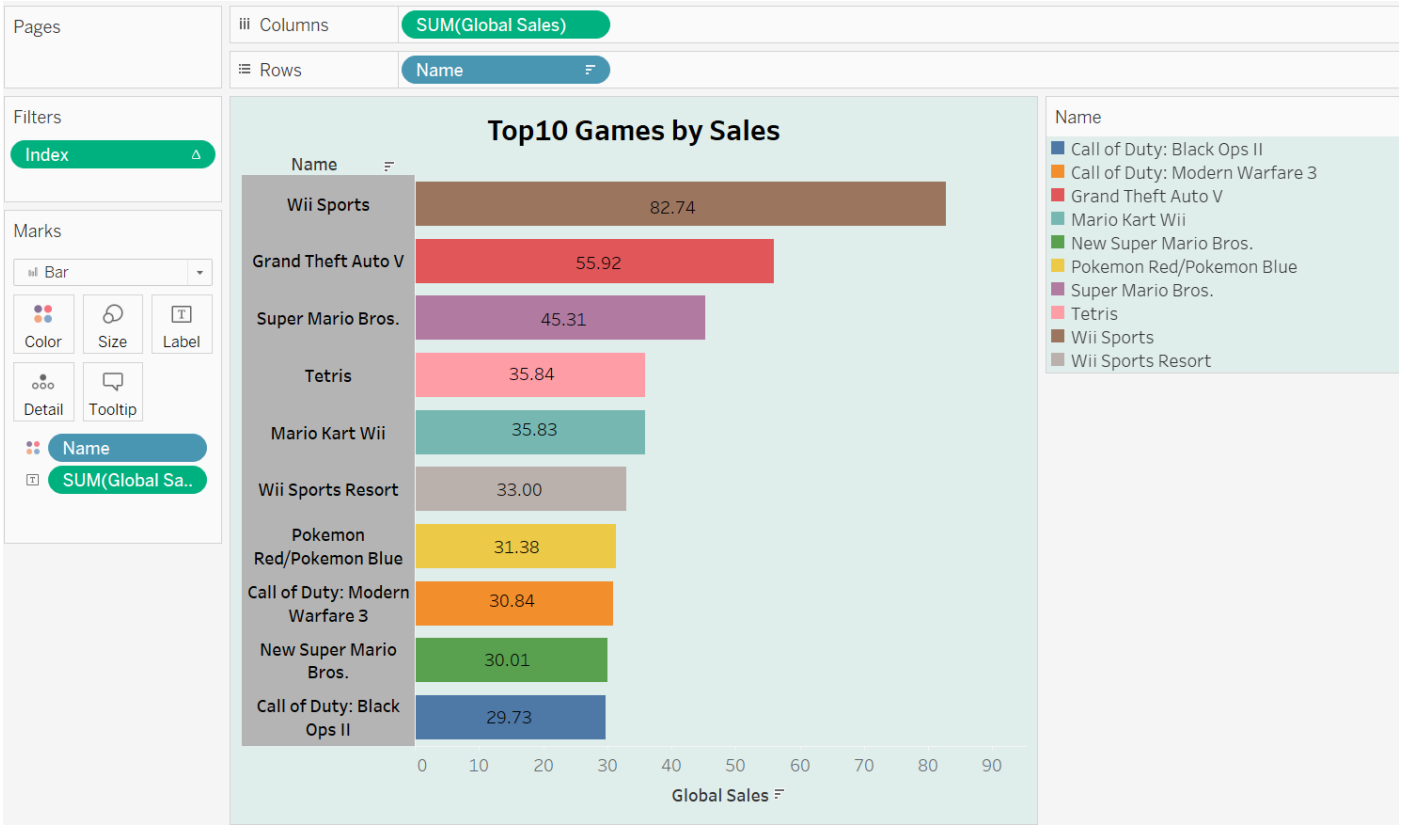
Saving the data in a new CSV file

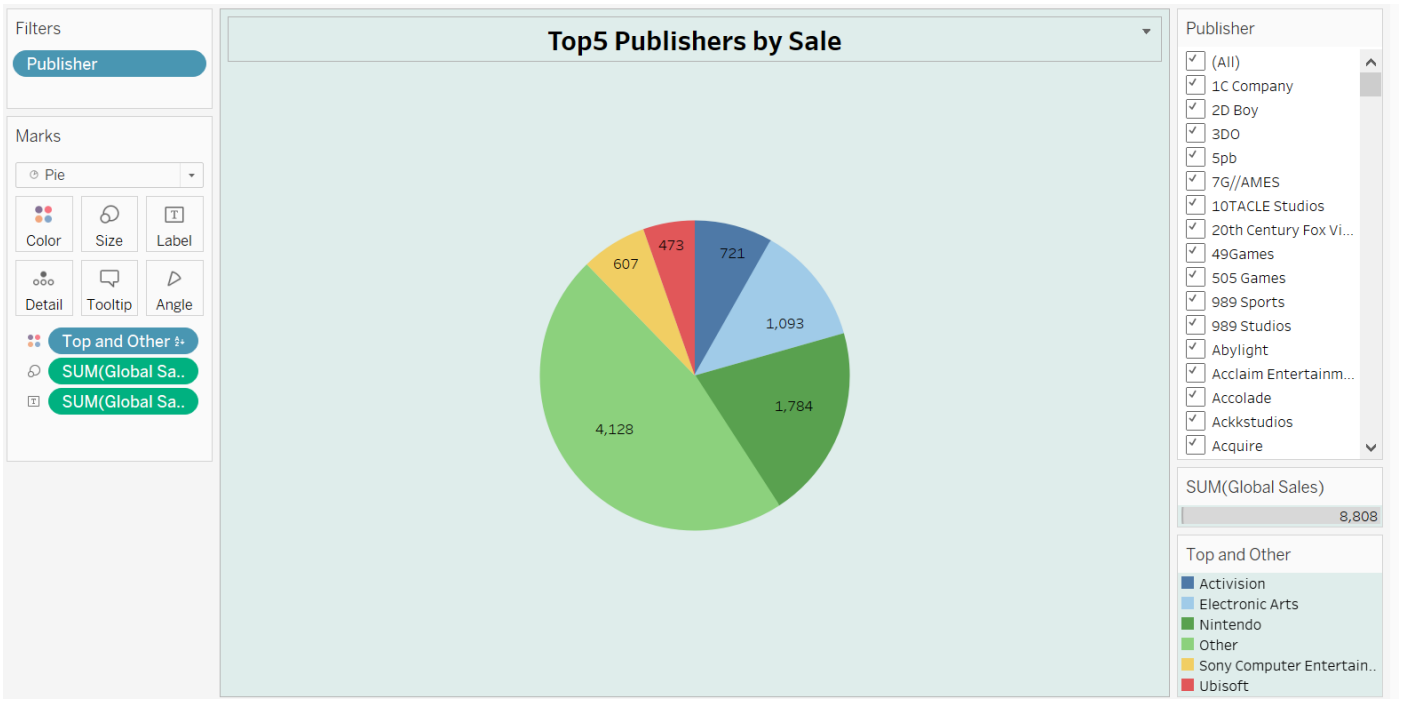
```
> #Saving the data in a new CSV file
> write.table(finalData, file="Final.csv", row.names = F, sep = ",")
```

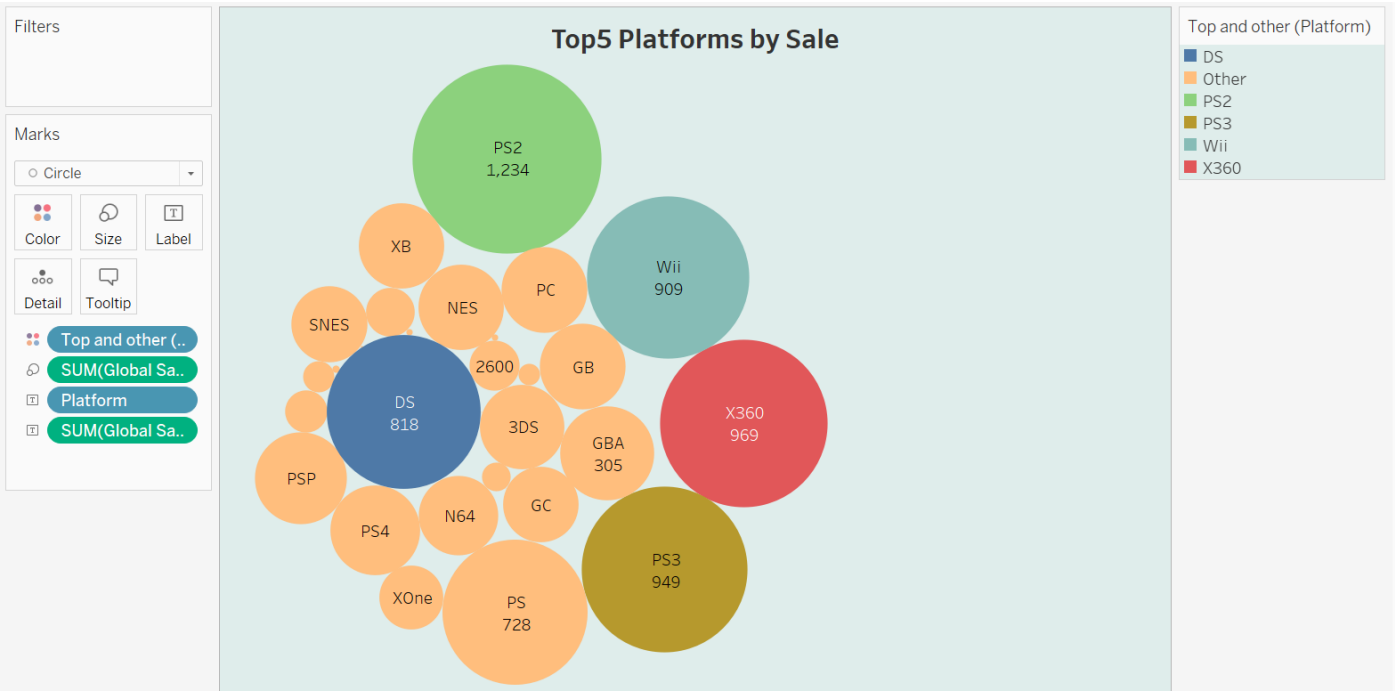
Dashboard

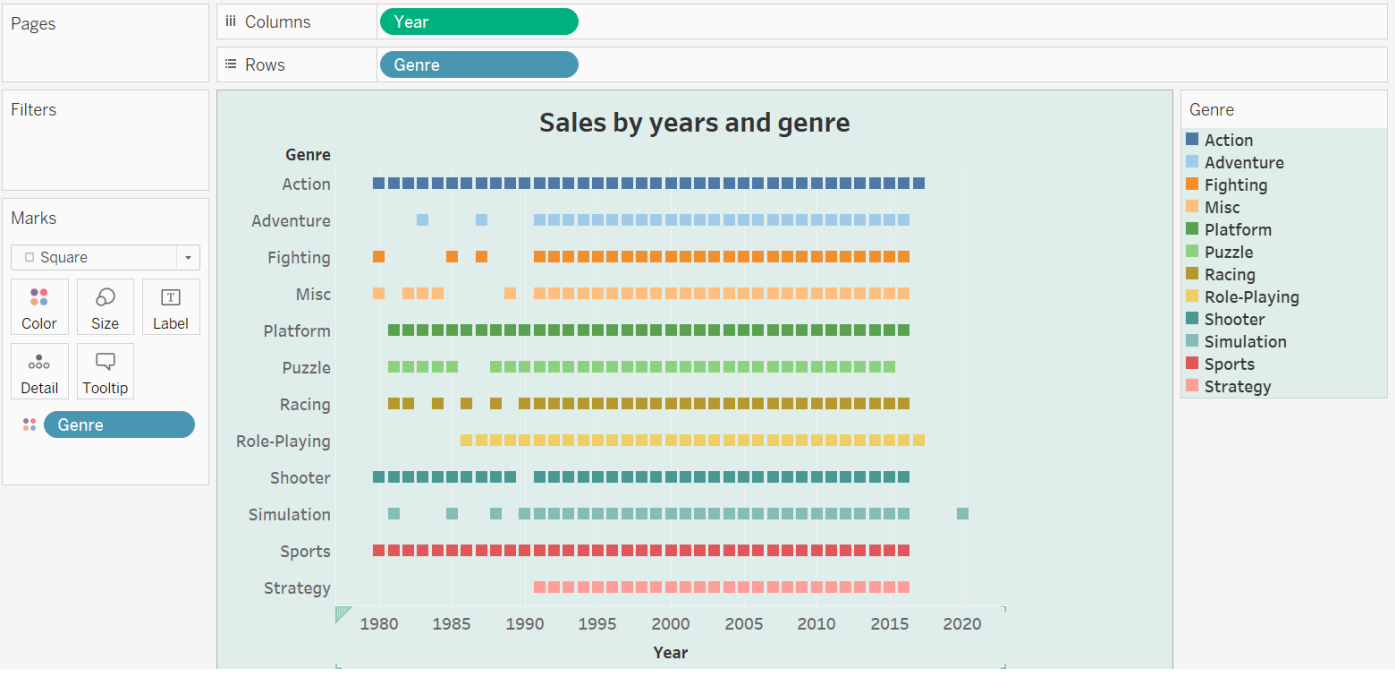

Video Games Dashboard
RADHIKA AGGARWAL
Top10 Games by Sales
Name
Wii Sports
Grand Theft Auto V
Super Mario Bros.
Tetris
Mario Kart Wii
Wii Sports Resort
Pokemon Red/Pok..
Call of Duty: Mode..
New Super Mario B..
Call of Duty: Black ..
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
Global Sales
Name
Call of Duty: Bla..
Call of Duty: Mo..
Grand Theft Aut..
Mario Kart Wii
New Super Mari..
Pokemon Red/P..
Super Mario Bro..
Tetris
Wii Sports
Top5 Platforms by Sale
PS2 1,234
XB
NES
PC
Wii 909
GB
DS 818
3DS
GBA
X360 969
PSP
PS4
PS3 949
PS
Top5 Publishers by Sale
607
473
721
1,093
1,784
4,128
Measure Names
EU Sales
Global Sales
JP Sales
NA Sales
Other Sales
Genre
Action
Adventure
Fighting
Misc
Platform
Puzzle
Racing
Role-Playing
Shooter
Genre wise sale in different regions
Genre
Action Adventure Fighting Misc Platform Puzzle Racing Role-Playing Shooter Simulation Sports Strategy
Value
1500
1000
500
0
Global Sales NA Sales
Sales by years and genre
Genre
Action
Advent..
Fighting
Misc
Platform
Puzzle
Racing
Role-Pl..
Shooter
Simula..
Sports
Strategy
1980 1985 1990 1995 2000 2005 2010 2015 2020
Year
Publishing by years
Publisher
2025
2020
2015
2010
2005
2000
1995
1990
1985
1980
Year

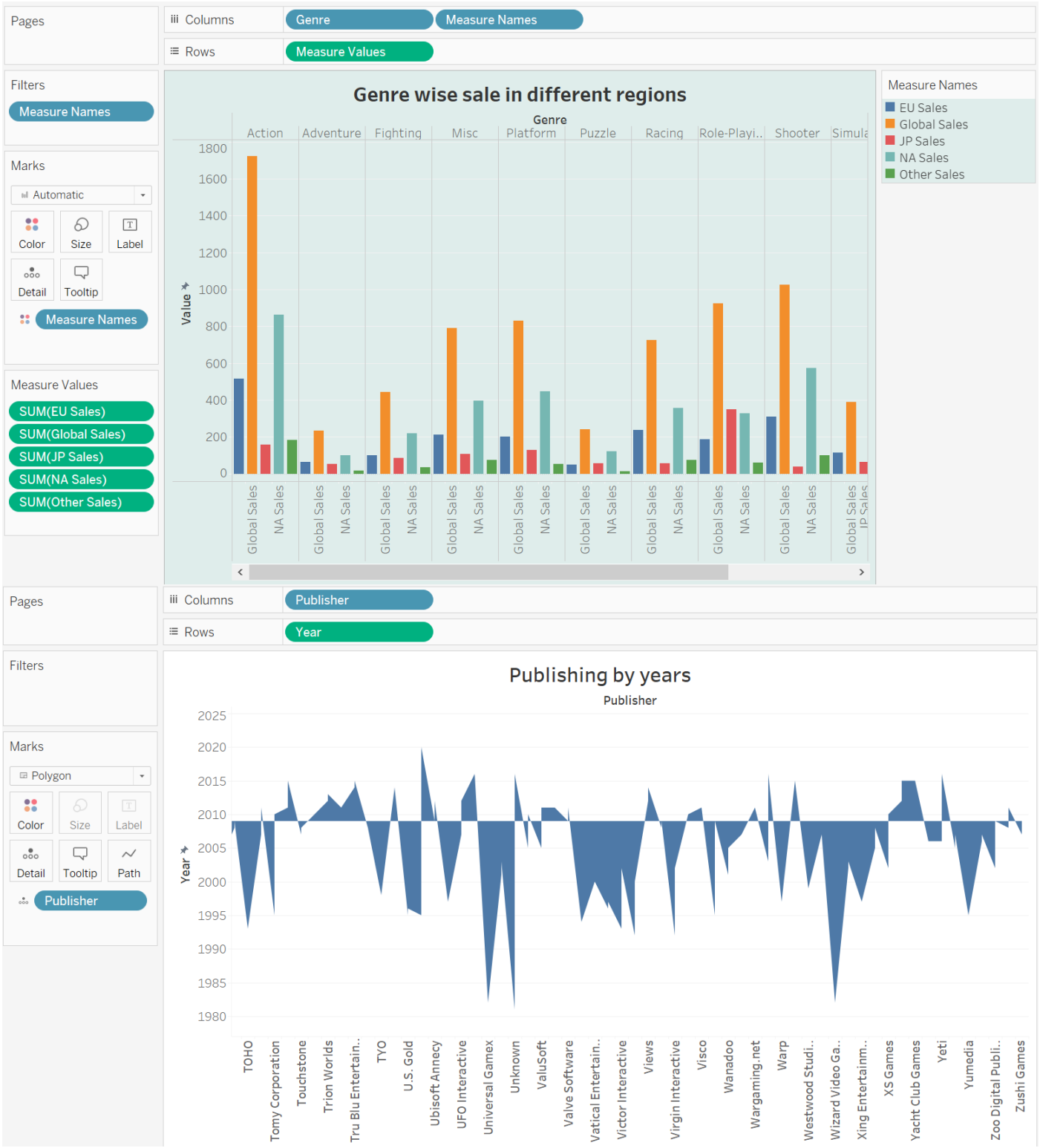
Graphs


Pages
Columns
SUM(Global Sales)
Rows
Name
Filters
Index
Marks
Bar
Color
Size
Label
Detail
Tooltip
Name
SUM(Global Sa..
Top10 Games by Sales
Name
Wii Sports
Grand Theft Auto V
Super Mario Bros.
Tetris
Mario Kart Wii
Wii Sports Resort
Pokemon Red/Pokemon Blue
Call of Duty: Modern Warfare 3
New Super Mario Bros.
Call of Duty: Black Ops II
82.74
55.92
45.31
35.84
35.83
33.00
31.38
30.84
30.01
29.73
0
10
20
30
40
50
60
70
80
90
Global Sales
Name
Call of Duty: Black Ops II
Call of Duty: Modern Warfare 3
Grand Theft Auto V
Mario Kart Wii
New Super Mario Bros.
Pokemon Red/Pokemon Blue
Super Mario Bros.
Tetris
Wii Sports
Wii Sports Resort


Filters
Publisher
Marks
Pie
Color
Size
Label
Detail
Tooltip
Angle
Top and Other
SUM(Global Sa..
SUM(Global Sa..
Top5 Publishers by Sale
721
1,093
1,784
4,128
607
473
Publisher
(All)
1C Company
2D Boy
3DO
5pb
7G//AMES
10TACLE Studios
20th Century Fox Vi...
49Games
505 Games
989 Sports
989 Studios
Abylight
Acclaim Entertainm...
Accolade
Ackkstudios
Acquire
SUM(Global Sales)
8,808
Top and Other
Activision
Electronic Arts
Nintendo
Other
Sony Computer Entertain..
Ubisoft


Filters
Marks
Circle
Color
Size
Label
Detail
Tooltip
Top and other (..
SUM(Global Sa..
Platform
SUM(Global Sa..
Top5 Platforms by Sale
PS2
1,234
XB
Wii
909
PC
NES
SNES
2600
GB
DS
818
3DS
X360
969
GBA
305
PSP
N64
GC
PS4
PS3
949
XOne
PS
728
Top and other (Platform)
DS
Other
PS2
PS3
Wii
X360


Pages
Columns
Year
Rows
Genre
Filters
Marks
Square
Color
Size
Label
Detail
Tooltip
Genre
Sales by years and genre
Genre
Action
Adventure
Fighting
Misc
Platform
Puzzle
Racing
Role-Playing
Shooter
Simulation
Sports
Strategy
1980
1985
1990
1995
2000
2005
2010
2015
2020
Year
Genre
Action
Adventure
Fighting
Misc
Platform
Puzzle
Racing
Role-Playing
Shooter
Simulation
Sports
Strategy


Pages
Columns
Genre
Measure Names
Rows
Measure Values
Filters
Measure Names
Marks
Automatic
Color
Size
Label
Detail
Tooltip
Measure Names
Measure Values
SUM(EU Sales)
SUM(Global Sales)
SUM(JP Sales)
SUM(NA Sales)
SUM(Other Sales)
Genre wise sale in different regions
Genre
Action
Adventure
Fighting
Misc
Platform
Puzzle
Racing
Role-Playi..
Shooter
Simula
Value
1800
1600
1400
1200
1000
800
600
400
200
0
Global Sales
NA Sales
Measure Names
EU Sales
Global Sales
JP Sales
NA Sales
Other Sales
Pages
Columns
Publisher
Rows
Year
Filters
Marks
Polygon
Color
Size
Label
Detail
Tooltip
Path
Publisher
Publishing by years
Publisher
Year
2025
2020
2015
2010
2005
2000
1995
1990
1985
1980
TOHO
Tomy Corporation
Touchstone
Trion Worlds
Tru Blu Entertain..
TYO
U.S. Gold
Ubisoft Annecy
UFO Interactive
Universal Gamex
Unknown
ValuSoft
Valve Software
Vatical Entertain..
Victor Interactive
Views
Virgin Interactive
Visco
Wanadoo
Wargaming.net
Warp
Westwood Studi..
Wizard Video Ga..
Xing Entertainm..
XS Games
Yacht Club Games
Yeti
Yumedia
Zoo Digital Publi..
Zushi Games