Tableau Data Analysis on Steam Game Data

Savithri B Chaturvedi

This is a brief summary of how the Tableau Visualization is arrived at from the raw data of Steam Games CSV files
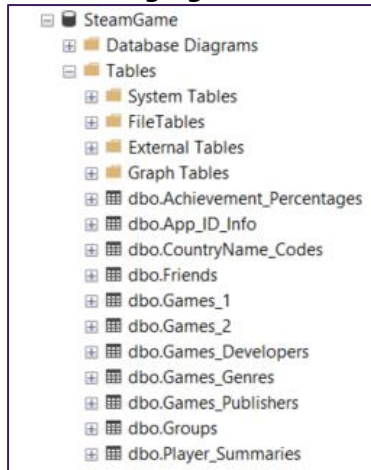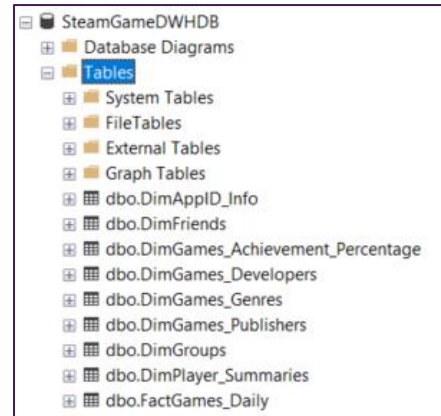
Raw Data Transformation

The flat files (CSV) of Steam Game Data (Small Dataset) are first loaded into MSSQL Server as Staging Tables.

Staging DB	**DataWarehouse DB**

After that DataWarehouse DB is created with Dimensions, Facts and identified Primary, ForeignKey constraints. And the data is then cleansed, transformed and loaded as Dimensions & Fact Tables of Data Warehouse DB called - "***SteamGame DWH DB***" using ETL Package Script

(Attached ETL Mapping Document & ETL Package for detailed description of how each field is mapped in Appendix)
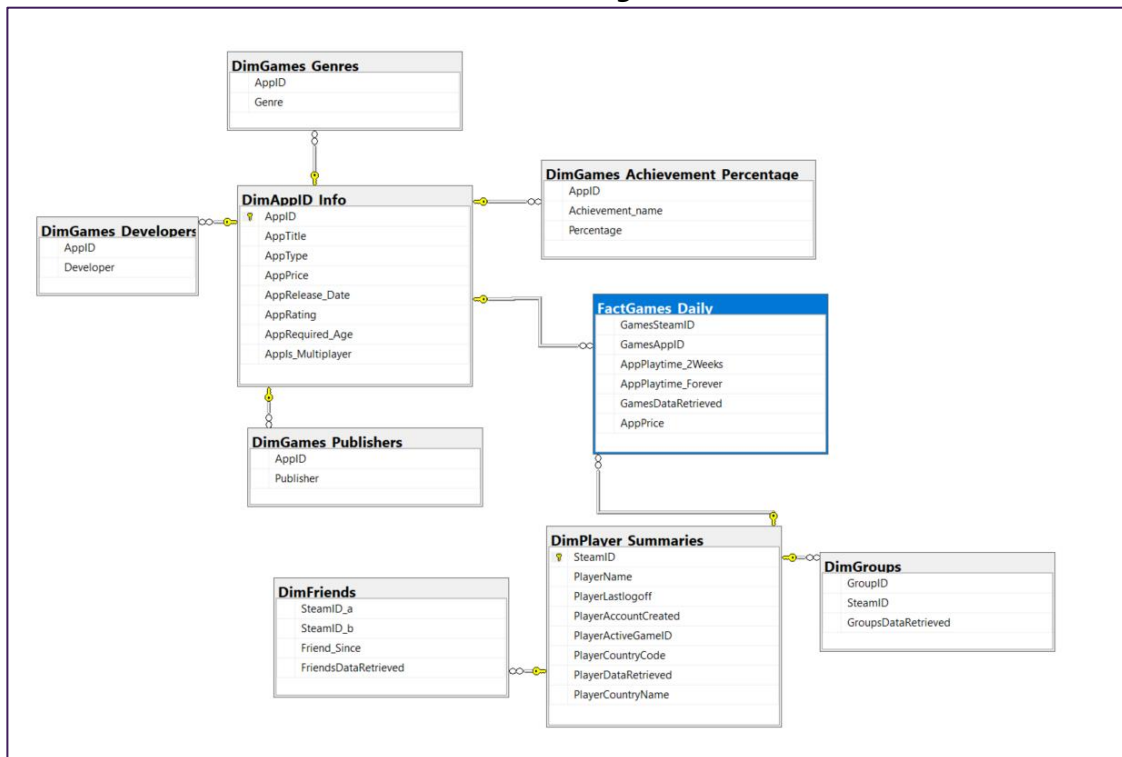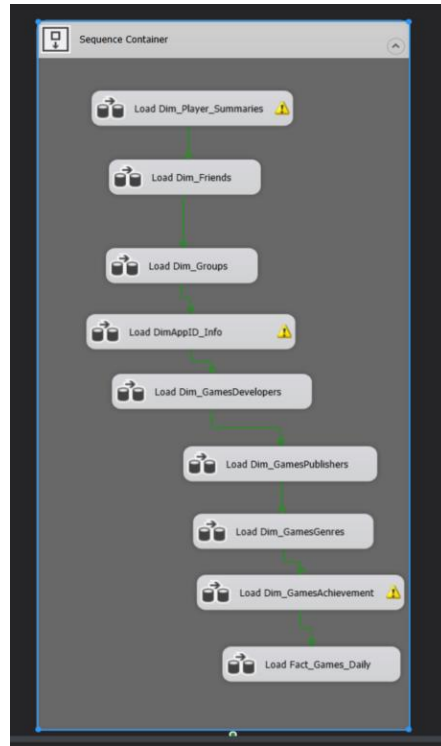
Database Diagram

ETL Package to load Datawarehouse Dimensions & Fact Tables from Staging tables

Important Note on Data selection

1) Small dataset is used for the entire analysis & visualizations in Tableau as my laptop was freezing with the large dataset
2) Considering the data size and my laptop configuration, I have considered Games_2 follow up data as FactGames table which is having all the players' information as that of Game_1.
3) Since some of the apps had release date, friendship start date etc, among others set to default unix timestamp year1970 and some with 1997 and some with 2002, to get meaningful visualizations only data between *01-Jan-2003 12-Dec-2012* has been filtered out and all the visualizations have been created on the same dates.

Tableau Desktop settings

Connected Tableaue Desktop with MS SQL Datawarehouse DB and then established joins between Dimensions & Fact tables.

Later I have created Tableau Extract with Physical Table Storage Option.

After the tables are joined, an Extract is made with Physical Tables Storage because the given data is static in nature and does not require Live Refresh option.

Reasons for choosing Physical Table Storage:

1) Considerable gain in Performance as the joins are performed on locally available date at query time compared to Live data source.
2) Size of extract is smaller hence it helps in improving
3) Reduced the size of extract file as there are multiple joins involved

Joins between Dimensions & Fact Tables

Tableau Visualizations

Brief Summary: The Tableau Work created as part of this data challenge consists of rich data visualizations with multiple story points which give deep insights into how the Games are consumed on Steam and what kind of games are highly popular and liked by the gamers worldwide, how much time is being spent on these games at various levels of filtering, how the game downloads trends are varying with time, further dissected at country, genre, app type, achievements, publishers & developers, avg play time, number of players, top games by downloads and sales,

This dashboard is designed to help various top management executives

1) **Executive Management Team**: In understanding how Steam is giving revenues and what genres of games are highly profitable

2) **Sales Team:** In evaluating how best to improve their selling abilities by understanding patterns of sales across various geographies and filtered with various genres of top performing, highly engaging, highly downloaded games which brings players back to Steam platform and for more content

I also wanted to delve deeper into the Friendships, Groups and their impact on how the games are consumed across various geographies and how that is affecting the sales and downloads but due to time and resource constraints I am forced to limit to Smaller Dataset and visualizations related to key aspects such as Sales Revenue, Download patterns, Player engagement with Steam Platform (playtime) etc.

An overview of Tableau features covered in the Challenge:
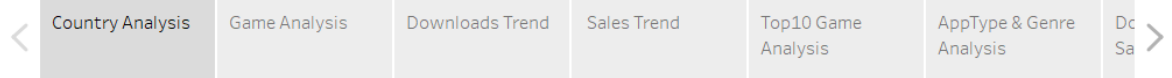
- 💡 Used LoDs, Running Total Trend, Dynamic Parameters, Sets, Maps, Dashboard Actions, Context Filters,

- 💡 Charts Used: Motion Chart, Bubble Chart, Heat Map, Tree Map, Stacked barchart, Bar Chart, Story Points

The Story for the entire workbook is available at the end.

Tableau Data Analysis on Steam Game Data

● ● ●

Steam Game Data Analysis (Small DataSet)

Country Analysis	Game Analysis	Downloads Trend	Sales Trend	Top10 Game Analysis	AppType & Genre Analysis	D... Sa...

Top 5 Countries by Downloads (Select a Country to get details of that)

AppType
`game`

Genre
`Action`

Top 20 Countries by
`5`

© 2020 Mapbox © OpenStreetMap

1 unknown

Top 10 Downloads by Game in United States of America

AppTitle	
Team Fortress 2	
Half-Life 2: Lost Coast	
Counter-Strike: Source	
Half-Life 2	
Half-Life 2: Deathmatch	
Left 4 Dead 2	
Portal	
Counter-Strike: Condition Zero	
Counter-Strike: Global Offensive	
Call of Duty®: Modern Warfare® 2	

Top 10 Sales by Game United States of America

AppTitle	
Serious Sam 3: BFE	$41,395.86
Counter-Strike: Source	$30,624.68
Left 4 Dead 2	$25,327.33
Sid Meier's Civilization® V	$22,882.37
Call of Duty®: Black Ops	$18,155.46
Call of Duty®: Black Ops II	$17,277.12
Half-Life 2	$13,856.13
Call of Duty®: Modern Warfare® 2	$12,513.74
Call of Duty®: Modern Warfare® 3	$10,477.38
Counter-Strike: Condition Zero	$8,131.86

Steam Game Data Analysis (Small DataSet)

Country Analysis	Game Analysis	Downloads Trend	Sales Trend	Top10 Game Analysis	AppType & Genre Analysis	Do Tre

Top 10 Downloads by Game for Action
(Select a Game to get trend of that)

AppType

game ▼

Select Genre

Action ▼

Half-Life 2: Lost Coast	Team Fortress 2		Dota 2	Half-Life 2

Half-Life 2: Deathmatch

Counter-Strike: Source

Counter-Strike: Condition Zero

Counter-Strike

Left 4 Dead 2

Call of Duty®: Modern Warfare® 2

Game Info

NoOfPlayers by Game	20,626
Sales	$0.00
AvgPlaytime ForEver(Minutes)	97,938,725
AvgPlaytime 2Weeks(Minutes)	591,167
Price	$0.00

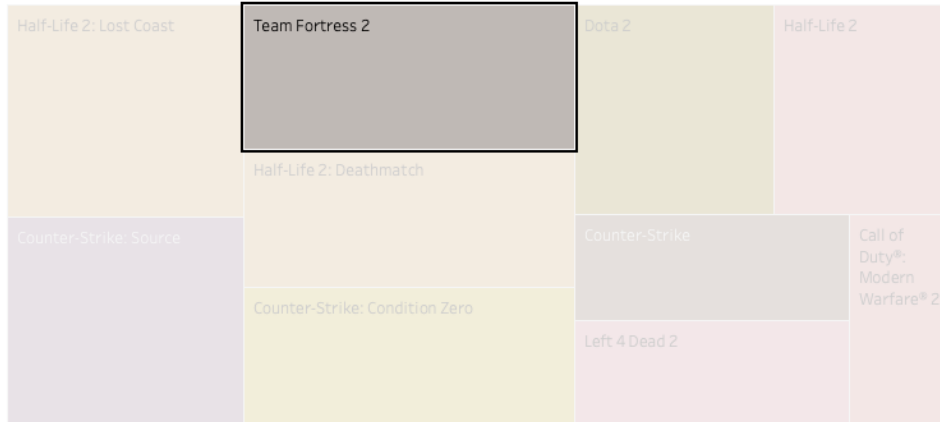| Achievement name ⇟	
TF_SCOUT_LONG_DISTANCE_R..	54.36
TF_HEAVY_DAMAGE_TAKEN	46.88
TF_GET_CONSECUTIVEKILLS_N..	44.49
TF_PYRO_CAMP_POSITION	36.34
TF_KILL_NEMESIS	34.29
TF_BURN_PLAYERSINMINIMU..	33.46
TF_PYRO_BURN_MEDICPAIR	32.62
TF_HEAVY_KILL_MIDAIR_MINI..	32.59
TF_SNIPER_KILL_MIDAIR_SCO..	31.71
TF_PYRO_KILL_TEAMWORK	31.10
TF_DEMOMAN_BOUNCE_AND_..	30.96
TF_PYRO_DOUBLE_KO	30.64
TF_HEAVY_TAKE_MULTI_DAM..	30.37
TF_ENGINEER_DISPENSER_HE..	30.25
TF_HALLOWEEN_DOMINATE_F..	30.12
TF_SNIPER_RIFLE_NO_MISSING	29.73
TF_SNIPER_HEADSHOT_DEMO..	29.07
TF_ENGINEER_FREEZECAM_SE..	27.61

Publisher

Valve   20,626

Developer

Valve	20,626

Steam Game Data Analysis (Small DataSet)

Top 10 Downloads by Game for Action
(Select a Game to get trend of that)

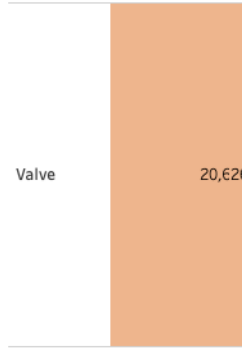|			
Half-Life 2: Lost Coast	Team Fortress 2	Dota 2	Half-Life 2
	Half-Life 2: Deathmatch		
Counter-Strike: Source		Counter-Strike	Call of Duty®: Modern Warfare® 2
	Counter-Strike: Condition Zero	Left 4 Dead 2	

AppType

game ▼

Select Genre

Action ▼

AppTitle

- Call of Duty®: Moder..
- Counter-Strike
- Counter-Strike: Cond..
- Counter-Strike: Sour..
- Dota 2
- Half-Life 2
- Half-Life 2: Deathma..
- Half-Life 2: Lost Coast
- Left 4 Dead 2
- Team Fortress 2
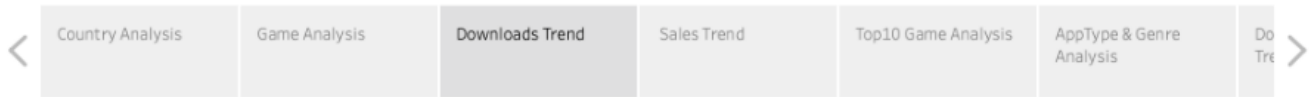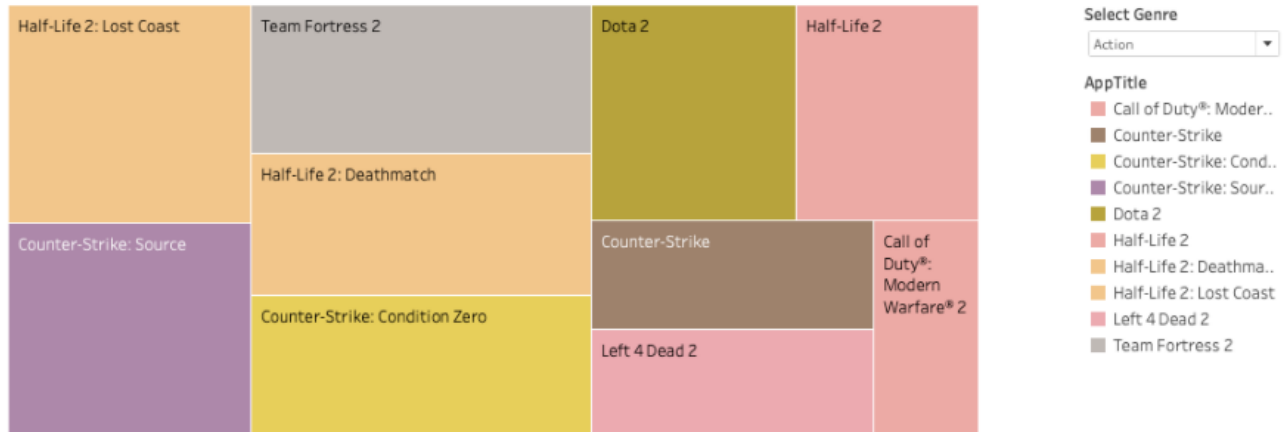
Cumulative Downloads for All App (From Created 1/1/2003 till This data is fetched 12/31/2012)
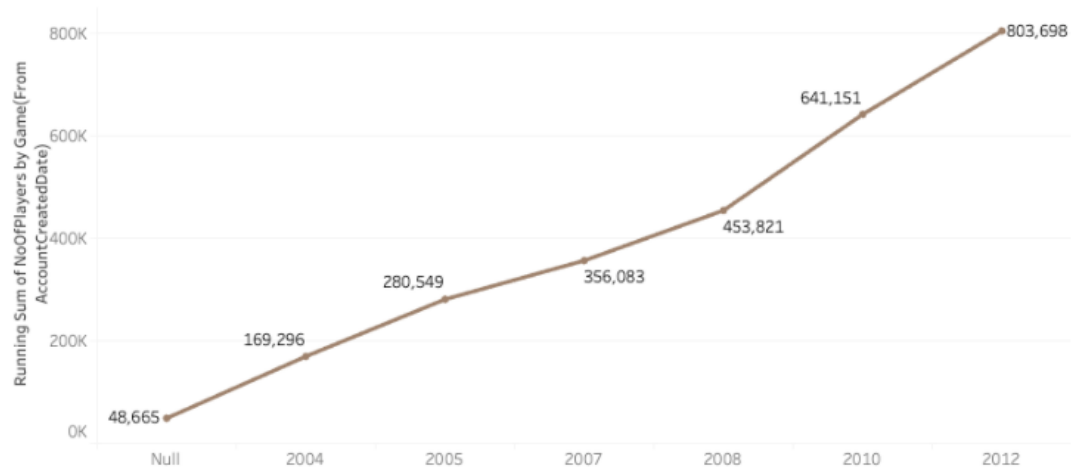
Running Sum of NoOfPlayers by Game(From AccountCreatedDate)

- 48,665 (Null)
- 169,296 (2004)
- 280,549 (2005)
- 356,083 (2007)
- 453,821 (2008)
- 641,151 (2010)
- 803,698 (2012)

Steam Game Data Analysis (Small DataSet)

| Country Analysis | Game Analysis | Downloads Trend | Sales Trend | Top10 Game Analysis | AppType & Genre Analysis | Do... Tre... |
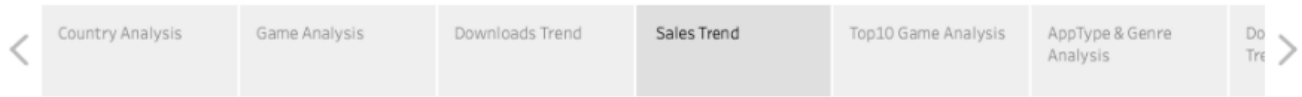
Top 10 Sales by Game for Action (Select a Game to get related trend)

AppTitle	
Counter-Strike: Source	$419,070.36
Call of Duty®: Black Ops II	$293,591.06
Call of Duty®: Black Ops	$244,178.94
Left 4 Dead 2	$240,319.78
Call of Duty®: Modern Warfare® 3	$209,947.50
Counter-Strike: Condition Zero	$191,947.86
Call of Duty®: Modern Warfare® 2	$184,627.64
Serious Sam 3: BFE	$170,582.94
Half-Life 2	$159,710.13
Borderlands 2	$136,231.85

AppType

game ▼

Select Genre

Action ▼

Sales by Game(From Acco..

136K ▭ 419K

Cumulative Sales for All App (From CreatedDate 1/1/2003 till this data is fetched 12/31/2012)

Running Sum of Sales by Game(From AccountCreatedDate)

$11,019,458.65

$8,622,021.70

$5,972,681.46

$4,669,815.79

$3,717,135.64

$2,272,126.52

$676,292.92

| | Null | 2004 | 2005 | 2007 | 2008 | 2010 | 2012 |

Steam Game Data Analysis (Small DataSet)

Overall Top 10 Sales by Games

AppTitle	
Counter-Strike: Source	419,070
Call of Duty®: Black Ops II	293,591
Call of Duty®: Black Ops	244,179
Left 4 Dead 2	240,320
Call of Duty®: Modern Warfare® 3	209,947
Sid Meier's Civilization® V	195,835
Counter-Strike: Condition Zero	191,948
Call of Duty®: Modern Warfare® 2	184,628
Serious Sam 3: BFE	170,583
Half-Life 2	159,710

Top 10 Games by Avg Playtime ForEver

AppTitle	
Counter-Strike: Source	112,563,491
Team Fortress 2	97,938,725
The Elder Scrolls V: Skyrim	46,146,168
Counter-Strike: Global Offensive	45,674,998
Call of Duty®: Modern Warfare® 2	41,221,232
Sid Meier's Civilization® V	41,026,296
Garry's Mod	32,783,320
Left 4 Dead 2	21,712,860
Borderlands 2	16,541,608
Call of Duty®: Modern Warfare® 3	15,367,663

Top 10 Games by Avg Playtime2Weeks

AppTitle	
Counter-Strike: Global Offensive	2,356,156
Sid Meier's Civilization® V	708,927
Team Fortress 2	591,167
The Elder Scrolls V: Skyrim	539,948
Garry's Mod	419,964
Borderlands 2	288,999
Counter-Strike: Source	283,119
Arma 2: Operation Arrowhead	162,989
XCOM: Enemy Unknown	143,623
Terraria	118,828

Top 10 Downloads by Games for Action

Half-Life 2: Deathmatch 19,639
Counter-Strike: Condition Zero 19,214
Half-Life 2: Lost Coast 21,555
Counter-Strike: Source 20,964
Half-Life 2 15,987
Counter-Strike: Global
Left 4 Dead 2 12,022
Portal 8,889
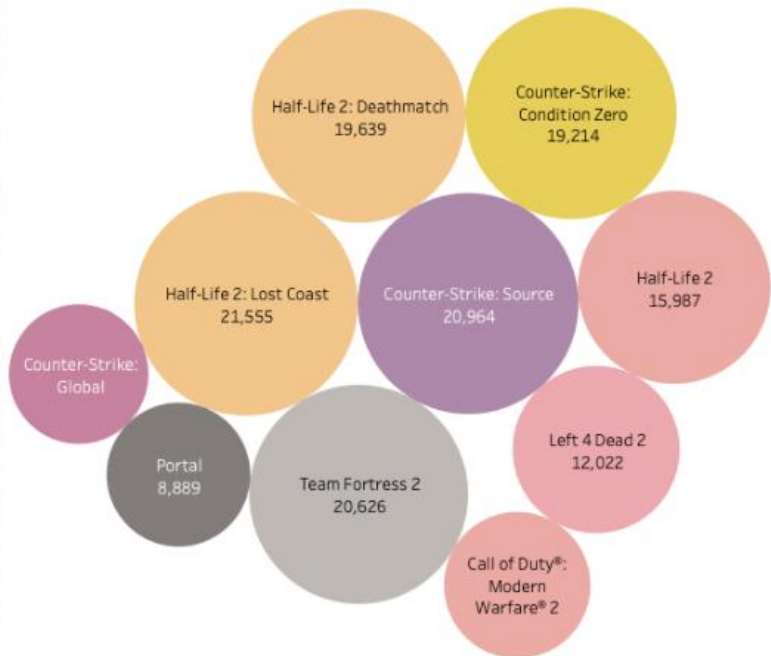Team Fortress 2 20,626
Call of Duty®: Modern Warfare® 2

Steam Game Data Analysis (Small DataSet)

Country Analysis	Game Analysis	Downloads Trend	Sales Trend	Top10 Game Analysis	AppType & Genre Analysis	Do Tre

Total Sales for all Games by Genre

Genre	
Action	$7,695,992.23
Indie	$1,899,658.98
Strategy	$2,226,681.40
Adventure	$1,837,031.19
RPG	$1,735,470.22
Simulation	$658,302.81
Casual	$359,610.99
Racing	$187,666.74
Early Access	$0.00
Massively Multiplayer	$35,213.88
Sports	$64,922.02
Web Publishing	$23,936.58
Design & Illustration	$23,936.58
Utilities	$10,138.13
Miscelleneous	$6,590.07
Accounting	$9,358.44
Animation & Modeling	$599.93
Education	$0.00
Software Training	$0.00
Video Production	$0.00
Photo Editing	$579.82
Free to Play	$0.00
Grand Total	$16,775,690.01

Total Downloads for all Games by Genre

Genre	
Action	574,196
Indie	157,180
Strategy	142,120
Adventure	127,916
RPG	122,723
Simulation	45,624
Casual	37,698
Free to Play	34,483
Racing	13,676
Massively Multiplayer	9,721
Sports	5,712
Animation & Modeling	957
Miscelleneous	893
Video Production	668
Design & Illustration	624
Web Publishing	624
Utilities	469
Education	282
Software Training	282
Early Access	165
Accounting	156
Photo Editing	18
Grand Total	1,276,187

Total Sales by AppType

AppType	
game	16,706,406
demo	0
dlc	69,284
mod	0
Grand Total	16,775,690

Total Downloads by AppType

AppType	
game	1,252,094
mod	14,823
dlc	7,942
demo	1,328
Grand Total	1,276,187

Steam Game Data Analysis (Small DataSet)

| ame Analysis | Downloads Trend | Sales Trend | Top10 Game Analysis | AppType & Genre Analysis | Downloads and Sales Trend for all Games | Motio |

Total Downloads by Genre

Genre	
Action	65,874
Indie	154,307
Strategy	140,243
Adventure	127,809
RPG	122,710
Simulation	43,578
Casual	37,559
Free to Play	32,218
Racing	12,015
Massively Multiplayer	9,721
Sports	5,472
Animation & Modeling	957
Miscellaneous	893
Video Production	668
Design & Illustration	624
Web Publishing	624
Utilities	469
Education	282
Software Training	282
Early Access	165
Accounting	156
Photo Editing	18
Grand Total	1,252,094

Total Downloads Trend for Games (Select a Genre to see relavent trend)

StartDate(AppRelease_D..
1/1/2003

EndDate (PlayerDataRetr..
12/31/2012

AppType
game

NoOfPlayers by Genre (Fr..
18 — 561,324

Appendix

Data WareHouse DB Creation Script:

SteamGame_DWHDB_Schema.txt

Data WareHouse DB ETL Mapping Document:

SteamGame_DWHDB_
ETLMappingDocumer