Video Game Sales Analysis

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Problem Definition:

To analysis trends and variations in video games sales on several platforms and to estimate it.

Abstract:

This Exploratory Data Analysis consist of analysing the trend in annual video game sales and to predict it, to find the factor which results in the hype of videogame industry, to estimate the sales in different regions.

Techniques Used:

- **Stack Plot –** To visualise genre in different platforms.
- **ANOVA –** To verify hypothesis.
- **Forecasting –** Linear Regression.
- **TukeyHSD –** Multi-pairwise comparison.

Data Set Description:

```
  X            Name Platform Year      Genre  Publisher NA_Sales EU_Sales
1 1       Asteroids     2600 1980    Shooter      Atari     4.00     0.26
2 2 Missile Command     2600 1980    Shooter      Atari     2.56     0.17
3 3         Kaboom!     2600 1980       Misc Activision     1.07     0.07
4 4        Defender     2600 1980       Misc      Atari     0.99     0.05
5 5          Boxing     2600 1980   Fighting Activision     0.72     0.04
6 6       Ice Hockey     2600 1980     Sports Activision     0.46     0.03
  JP_Sales Other_Sales Global_Sales
1        0        0.05         4.31
2        0        0.03         2.76
3        0        0.01         1.15
4        0        0.01         1.05
5        0        0.01         0.77
6        0        0.01         0.49
> []
```
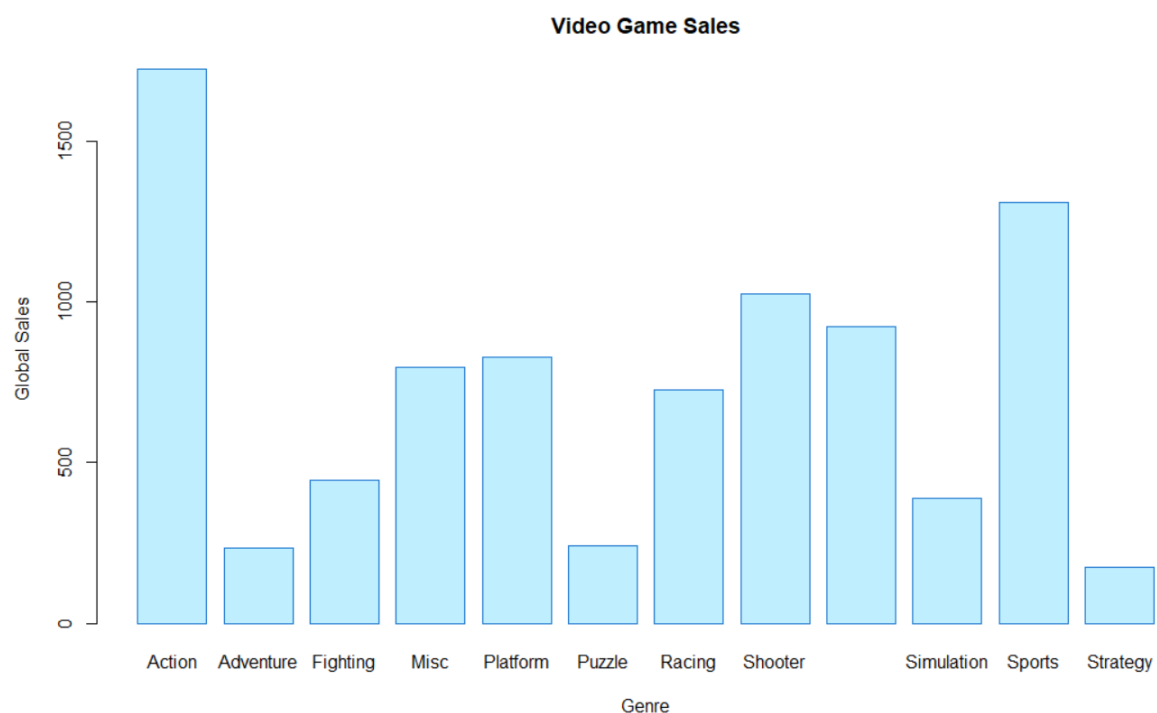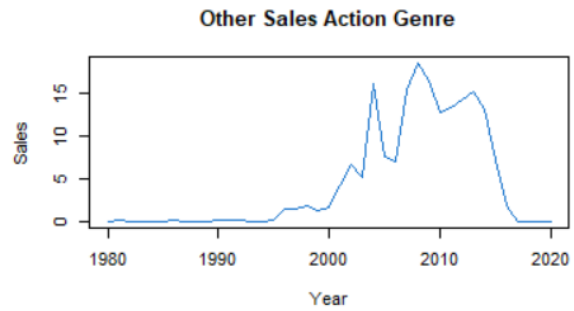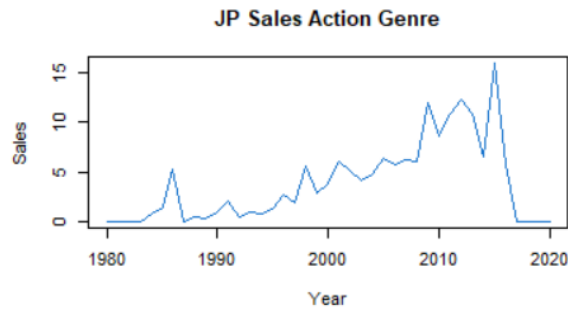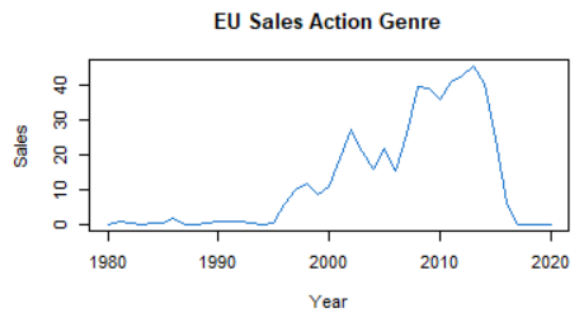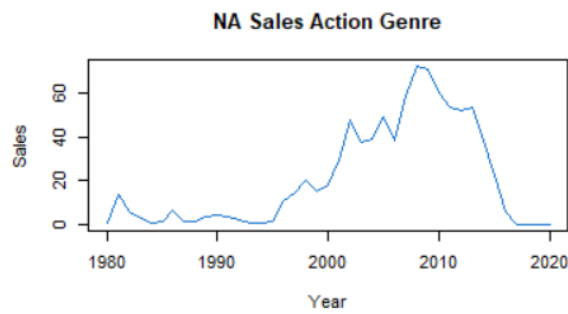
Reference:

Data set Link: https://www.kaggle.com/gregorut/videogamesales
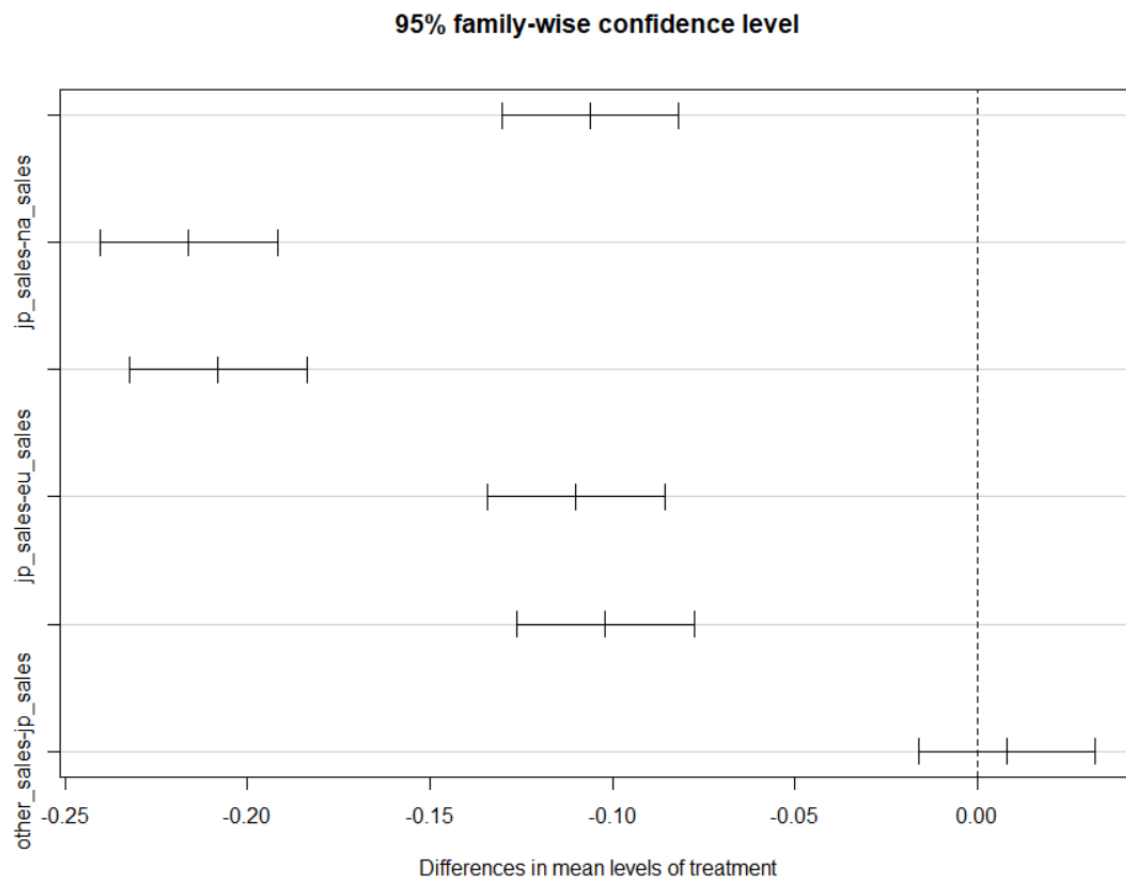
Inferences:

- From the above graph it is clear that action genre is one of the main reasons for the increase in video game sales compared to other genres.

- It is clearly defined that people like action type of game rather than a strategy or a puzzle one.

- There are several lot of action games found in various platform.

NA Sales Action Genre

EU Sales Action Genre

JP Sales Action Genre

Other Sales Action Genre

Global Sales Action Genre

Global Sales Action Genre

- In the above graph in the field of global sales of action genre the sales of the video games have been dull until 2000.

- From the year 2000 we can clearly see a rise in sales.

- The reason for this is trend effect, launch of next generation consoles which attracted people to buy.

- PS-2 launch in 2000, PS-3 launch in 2006.

- The sudden decrease from 2012 is due to the mobile game addiction which led to the drastic downfall in video games.

```
ANOVA ~ ANALYSIS
              Df Sum Sq Mean Sq F value Pr(>F)
treatment      3  100.7   33.57   231.6 <2e-16 ***
Residuals  13008 1885.7    0.14
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

95% family-wise confidence level

Differences in mean levels of treatment

- In the above **ANOVA** analysis, the hypothesis assumed is that the average sales in different region is equal.

- But the hypothesis is rejected and to check pair wise TukeyHSD test is done.

- From the above graph it is clear that all sales except Other Sales and Japan sales are similar.

- It is significant that the trend in North America, Europe are same in video game sales, which implies there are equal amount of video game lovers.

Sales by Platfrom
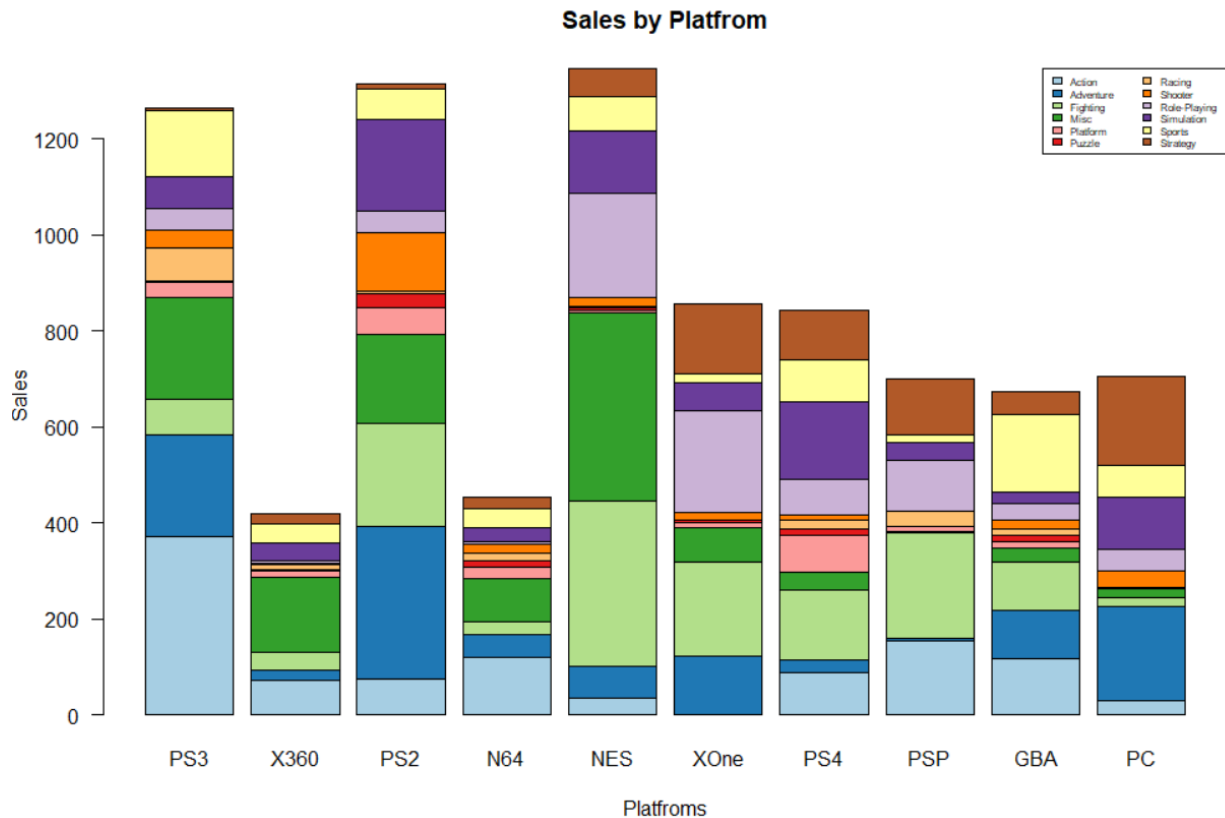
- From the above plot we can visualise the sales of different genre in different platforms.

- It is evident there are a wide variant of games found in PS-2, PS-3 and Nintendo NES.

- Therefore, among other platforms the most sold one are PS-2, PS-3 and Nintendo NES.

Sales & Years Regression
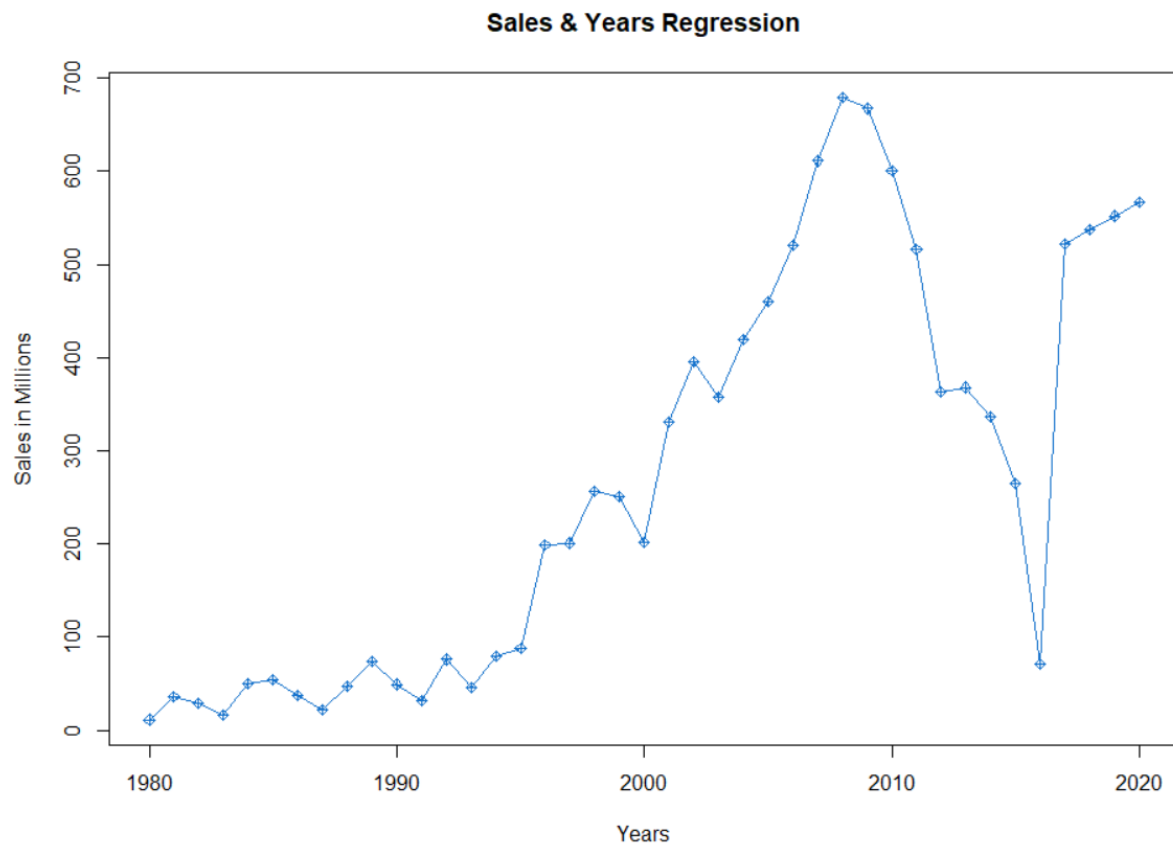
- From the above prediction in the upcoming years the chances for reduce in sales are very less.

- There are numerous factors to increase the sales such as next generation console, new hardware's etc.