

Big Data Analytics Symposium - Summer 2019

Analytics Project: Review Analysis on Game genres when Migrated to Mobile Platform from PC

Team:

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Abstract: This analytics presents an analysis on the reviews of games on Steam, App Store and Google Play Store. The games are grouped into different genres and the ratings are analyzed individually and as a genre group. The goal of the analysis is to figure out what genres of games are better received when migrated to mobile platforms.

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Motivation

- **Who are the users of this analytic?**

Video game developers, video game designers, mobile game designers and developers

- **Who will benefit from this analytic?**

Mobile game designers

- **Why is this analytic important?**

Some games, when migrated to the mobile end, receive worse reviews and ratings than their PC counterparts. Despite of all the adaptations for the mobile version of the games, some game genres still get worse reviews and ratings when compared to their PC counterparts. It is possible that, even with the adaptations, some game genres are still hard to play when it is on the mobile platform. This project presents an analysis over the game reviews and ratings to figure out what game genres are less well received when migrated to mobile platform.

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Goodness

What steps were taken to assess the ‘goodness’ of the analytic?

- Compare our result with online public reports from game journal or website , such as [The best Android games currently available \(July 2019\)](#) from *digitaltrends.com*.
 - Mobile game industry reports
 - PC game industry reports
- Compare our result with top lists for different platforms

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Data Sources

Name: 42 Matters API (Mobile Platform)

Description: Access rating and review data for given apps in Apple itunes(ios)

Size of data: 793MB

Name: SteamSpy, Steam DB (PC Platform)

Description: A database for retrieval of game review data of PC game

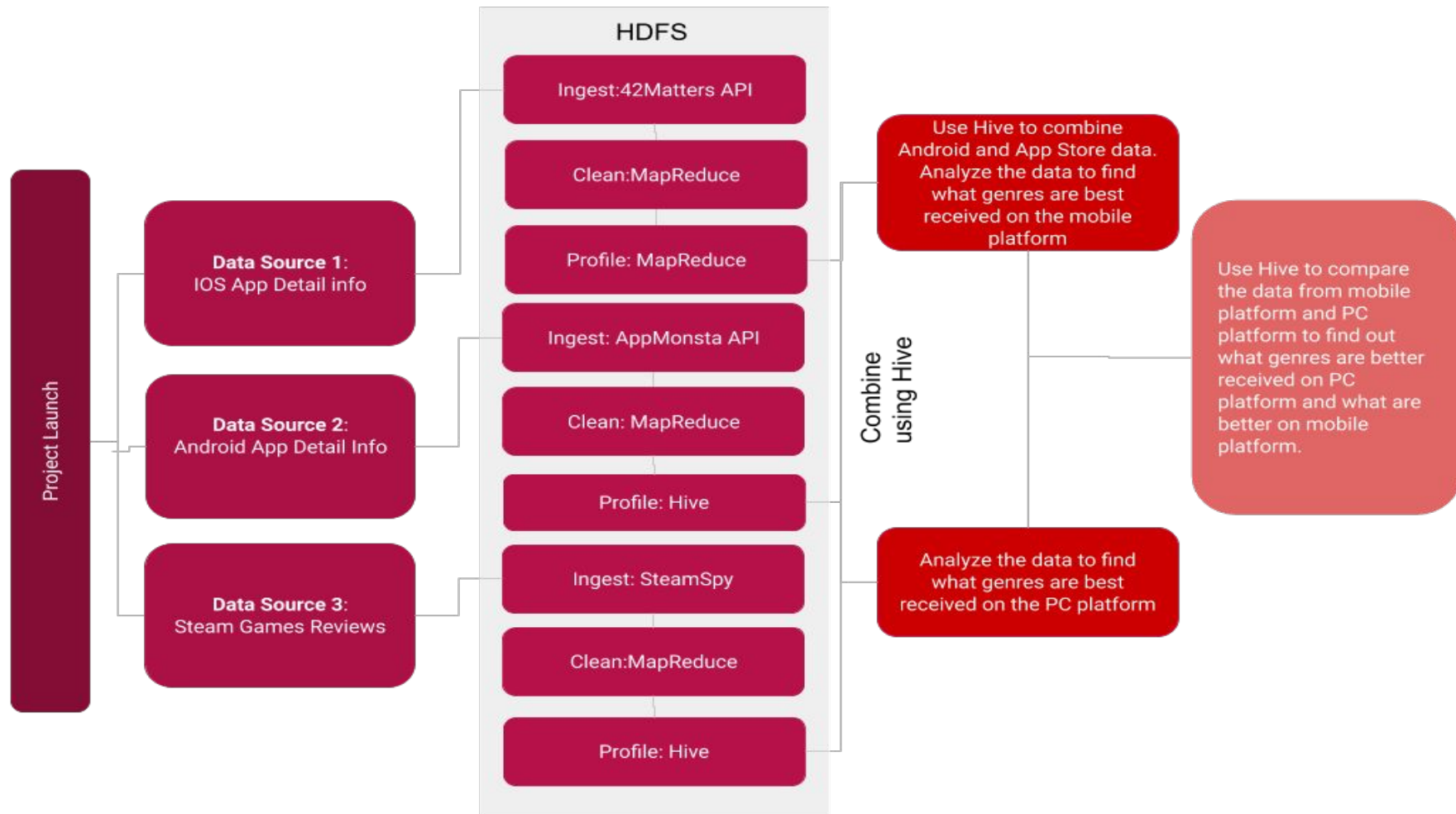
Size of data: 10 MB

Name: AppMonstar API(Mobile Platform)

Description: Access reviews and ratings data for given apps in Google play

Size of data: 682MB

Design Diagram



Platform(s) on which the analytic ran:

- NYU-HPC Dumbo

Processed Data with Big Data Tool

Review Analysis Sample on one App

(game, positive, topic_name, negative, reviews number, average rating, topic id, review percentage)

```
Candy Crush Saga,0.70543280059493,General Feedback,0.29456719940507,21137,4.7373326394474,general_feedback,0.5669491980044
Candy Crush Saga,0.36383763450347,Update,0.63616236549653,5032,2.206279809221,update,0.13497129982297
Candy Crush Saga,0.40746873168991,Stability,0.59253126831009,3320,2.1807228915663,stability,0.089051016576364
Candy Crush Saga,0.39383070301226,Pricing & Payments,0.60616929698774,2430,3.1534979423868,pricing_payments,0.065178906711013
Candy Crush Saga,0.26505877337087,User Interface & UX,0.73494122662913,1740,3.3011494252874,user_interface,0.046671315916528
Candy Crush Saga,0.50317113323968,Resource Usage,0.49682886676032,717,3.4560669456067,resource_usage,0.019231800869052
Candy Crush Saga,0.56586826347234,Signup & Login,0.43413173652766,583,3.0600343053173,signup_experience,0.015637573091572
Candy Crush Saga,0.49462200368428,Uninstall,0.50537799631572,563,2.4351687388988,uninstall,0.015101121184486
Candy Crush Saga,0.65502183406077,Advertising,0.34497816593923,373,3.254691689008,advertising,0.010004828067164
Candy Crush Saga,0.59944153179719,Connectivity,0.40055846820281,357,3.4985994397759,connectivity,0.0095756665414946
Candy Crush Saga,0.44680851063694,Notifications & Alerts,0.55319148936306,351,2.9373219373219,notification_alerts,0.0094147309693686
Candy Crush Saga,0.40184866050394,Audio,0.59815133949606,212,3.311320754717,audio,0.0056863902151172
Candy Crush Saga,0.57403189065989,Device Compatibility,0.42596810934011,172,3.5174418604651,device_compatibility,0.0046134864009442
Candy Crush Saga,0.43885770075585,Video,0.56114229924415,172,3.1744186046512,video,0.0046134864009442
Candy Crush Saga,0.46696832579003,Translation & Internationalization,0.53303167420997,67,3.955223880597,translation_internationalization,0.0017971138887399
Candy Crush Saga,0.54794520547868,Privacy,0.45205479452132,38,3.3947368421053,privacy,0.0010192586234644
Candy Crush Saga,0.44615384615323,Tutorial,0.55384615384677,18,3.1666666666667,tutorial,0.00048280671637788
```

Update

Stability

Pricing

User
Interface

Resourc
e Usage

Sample Processed Data with MapReduce

```

1980s,0.825
1990's,0.9
2.5D,0.83
2D,0.86
2D Fighter,0.84
360 Video,0.66
3D Platformer,0.82
3D Vision,0.85
4 Player Local,0.84
4X,0.805
6DOF,0.75
Abstract,0.845
Action,0.79
Action RPG,0.805
Action-Adventure,0.83
Adventure,0.79
Agriculture,0.745
Aliens,0.84
Alternate History,0.83
America,0.735
Animation & Modeling,0.81
Anime,0.86
Arcade,0.83
Arena Shooter,0.84
Artificial Intelligence,0.76
Assassin,0.835
Asynchronous Multiplayer,0.69
Atmospheric,0.83
Audio Production,0.75
Base-Building,0.78
Based On A Novel,0.81
Basketball,0.715
Batman,0.83
Beat 'em up,0.83

```

Faith	0.975
Movie	0.935
Cartoon	0.93
Episodic	0.935
Documentary	0.92
Drama	0.92
Gaming	0.92
Thriller	0.92
Diplomacy	0.91
Logic	0.91
Moddable	0.91
Multiple End	0.91

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Results

1. Genre **Faith, Movie, Cartoon and Episodic** perform the best in PC Game platform with the top 3 rating score **4.8, 4.675 and 4.65 out of 5**, while Genre **D, E, F** is best in Mobile platform, of which average ratings are **___, ___, ___**.
2. Genre **G** shows the biggest difference in rating between mobile and PC platform of which the average rating is **___ and ___**(**High in Computer but low in mobile platform**)
3. The Review Analysis for genre G:
The most review topic of G is **“ ”, “ ” and “ ”**
Player's attitude towards the topic is **___, ___ and ___**.

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Obstacles

1. Steam Web API does not provide the data we wanted to use and we had to search for different data sources to get the game ratings and genres information.
2. IOS Database and Android Database provide different detailed information or data format about one app. For example, the genre is available only for IOS app not for Android app. When aggregating individual game to genre group, a small name divergence for one game on two platform will cause data merging error.

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Summary

From our analysis, we are supposed to figure out what genres of games perform the best when migrated to mobile platform and which ones are the worst. For the ones that perform worse on mobile platform than PC end, we were to do review analysis to figure out what is exactly the cause. This analysis could be extended such that we look at the reviews for all games on both platforms and figure out what would be a main obstacle when the games are migrated to the mobile platform. Another improvement we could make is to apply weighted ratings.

Acknowledgements

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Thank you!