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CPSC 4805 – Capstone Project II
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Software Requirement Specifications

**IVGDB: International Videogames Database, a community-based multilingual videogame
database**

Abstract

This project seeks to create a videogame website where one can easily access up-to-date information, discuss with other users, and discover new videogames. The website will allow the user to search for videogames using a variety of parameters and filters in multiple languages. The information on the website will be kept up-to-date via and accurate via a system that allows users to submit edits to information that will be checked before the edits are applied. The website will have a forum system where users can discuss with one another. On each individual videogame page will be a recommendation section that will show other games similar to the videogame of that page.

Problem Statement

The videogame industry is a multibillion-dollar industry that continues to grow to this day producing a vast array of videogames that has grown throughout the years. As the list of videogames continues to grow so does the amount of information about videogames. Several websites in the industry have taken it upon themselves to store this information and make it easily accessible to the general public. However, these websites while excellent most of the time, are sometimes lacking as pieces of information are missing or as some games are missing in their entirety.

Currently websites that serve as ways for people to search and look for videogames are lacking in few aspects but those few aspects are somewhat large. For example, several websites are often lacking the content rating for videogame releases for regions outside of North America and Europe. Most websites also lack information on the termination date of an online game if websites even provide information on the online game's status in the first place. Searching for games in another language may prove to be difficult when using most of these websites as these websites often use the romanized version of the language. These websites are also often completely missing information on games with most of those games being indie games, mobile games, and games that are just obscure with most of them also being foreign.

As it is currently, while one may be able to find information on whatever game they are searching for, this information may be spread out through various websites. This project aims to remedy this by compiling all this information into a single location so that users may easily access this information. In order to combat misinformation and absence of information, the app this project aims to create will allow the user to make edits to the information on a game that will then be moderated before the edits are finalized in the app. For the community around games to

grow especially for more obscure games, there needs to be a place where people can discuss the game and interact with one another. In order to satisfy this condition, this app will also serve as a platform in which users can interact and discuss with other users via discussion boards that users can create in this app. An often-asked question with many variations throughout gaming communities is “What are some similar games?” To help users get an answer to this question without having to ask it, this app will also feature a recommendation system that will show the user some videogames that might catch their interest based on their favorites if they have a profile registered with the app. Overall, this project aims to create an app that will allow ease of access to information on games that is updated with moderated user inputted information, discussion of games on game based discussion boards, and the discovery of games that align with the user’s interests.

SMART Objective

Specific

The objective of this project is to achieve in creating a website where one can easily query a database of videogames for information on the games, communicate with other people that are interested in the same games, and find new games that may interest users depending on their interests.

The project will be done once the website has a working search engine to query the database of videogames, a wiki-like system where users can submit a form of edits to a videogame's information that will be made once the information is confirmed, a discussion board type feature where a person can create a thread that others can join and discuss the topic said thread, and a recommendation system where the user will find other games that may interest the user when looking a game based on similarities in the information of the game or on data on other users.

Measurable w/Measurement

The project will meet expectations once several things are achieved:

1. Search engine can take in several parameters and filters to narrow or broaden the user's search results.
2. Search engine can support non-Latin characters as input.
3. Up to date and accurate information on the videogames.
4. Recommendation system is optimized to provide accurate recommendations.

Achievable

The skills required for this project are website building skills such as a proficiency in CSS and HTML. Knowledge of what information is important when searching for videogames is needed.

There is also the need to know how to create an interactive queryable database that can apply parameters and filters. Some other bits of knowledge needed are how a search engine works and how to create one, how to create a discussion board feature, and how to create a recommendation system.

Resources needed are information on videogames, web development software, database development software, and a method of publishing the website.

Relevant

The relevancy of the project is that the videogame industry is growing, and the number of videogames is increasing thus there is a need to be able find information on videogames but as it is the information is spread amongst several different websites. This project aims to remedy this situation as being a hub where the information is gathered in one spot thus bringing the community in one spot as well.

Time-oriented

The project should be done by the end of next semester before May 2020.

Timeline

Scope Statement

The project will produce a website that provides information on videogames, a place for discussion of videogames, and recommended videogames.

Work Breakdown Structure

- Main page
- Search results page

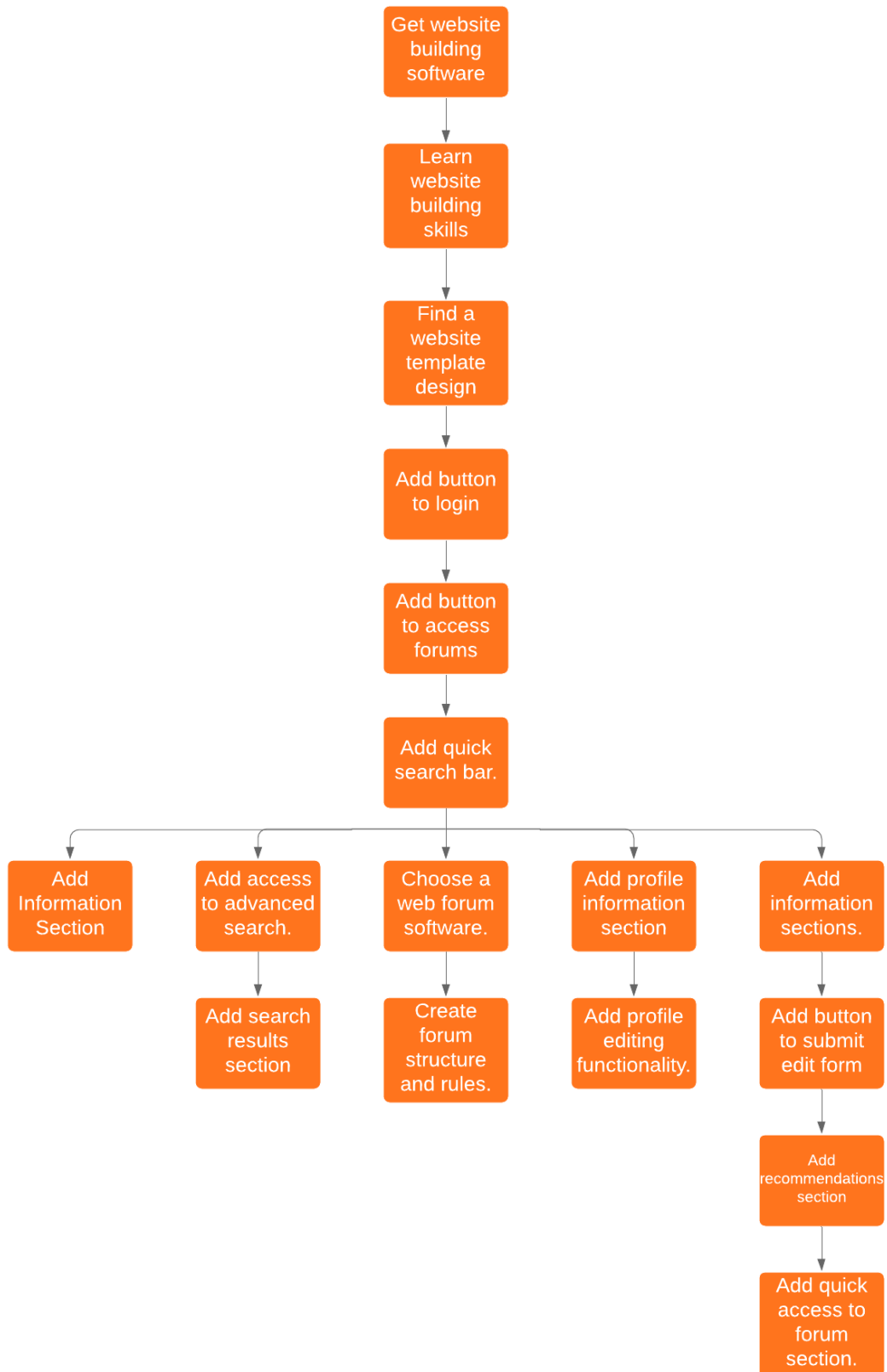
- Forums
- Profile page
- Template page for individual videogames

Task List

Main Page	Search Results Page	Forums	Profile Page	Template Page for Individual Videogames
<ul style="list-style-type: none"> • Research and Get website building software • Learn website building skills • Find a website template design • Add button to login. • Add quick search bar. • Add button to access forums • Add sections 	<ul style="list-style-type: none"> • Research and Get website building software • Learn website building skills • Find a website template design • Add button to login. • Add quick search bar. • Add button to access forums • Add button to access 	<ul style="list-style-type: none"> • Research and Get website building software • Learn website building skills • Find a website template design • Add button to login. • Add quick search bar. • Add button to access forums 	<ul style="list-style-type: none"> • Research and Get website building software • Learn website building skills • Find a website template design • Add button to login. • Add quick search bar. • Add button to access forums • Add profile information section 	<ul style="list-style-type: none"> • Research and Get website building software • Learn website building skills • Find a website template design • Add quick search bar. • Add button to login. • Add button to access forums • Add information sections. • Add button to submit edit form • Add recommendations section • Add button to quick access to

contain information on upcoming and newly released games.	advanced search. <ul style="list-style-type: none">• Add section that shows search results as titles of videogames and some brief information.	<ul style="list-style-type: none">• Choose a web forum software.• Create forum structure and rules.	<ul style="list-style-type: none">• Add profile editing functionality.	corresponding forum section.
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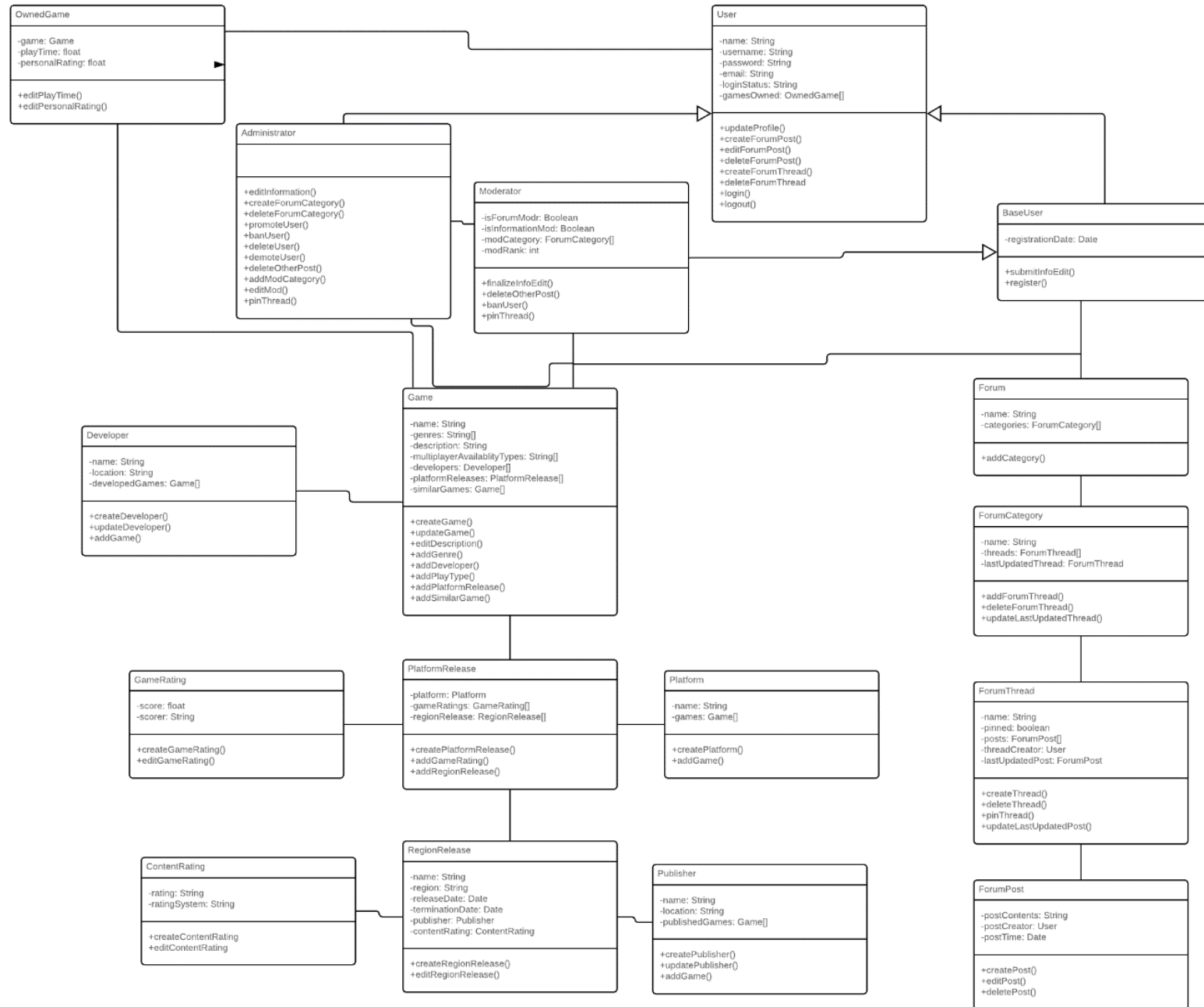
Project Dependencies



Timeline



Class Diagram



Literature Review

Videogame Information Websites: A Literature Review

Throughout the years, the videogame industry has grown considerably as it is now a multibillion-dollar industry that continues to grow to this day producing a vast array of videogames. With the number of videogames that are continually produced or announced each year, there is a large amount of information that is also generated. This information includes but is not limited to: title, genre, release date, producer, developer, platform, review score, content rating, translation status, and guides. As individuals become interested in certain videogames or videogame genres, those individuals may gather and begin to form communities as videogames are produced or announced. These communities will often discuss the videogame and share information and news on the videogame with each other. Currently, there are several websites and apps where one might go to in order to find this sort of information and/or where individuals interested in a videogame gather to form a community with some of them being: GameFAQs, Steam, QooApp, Reddit, and Wikipedia. The purpose of this literature review is to compare these websites and apps and review the strengths and shortcomings of each.

GameFAQs

GameFAQs is a website that hosts a wealth of information on videogames and is a website that is solely dedicated to the hosting of videogame information. GameFAQs holds a large catalogue of games and their information for a large selection of systems from consoles by Nintendo, Sony, and Microsoft to PC and Mac to Android and iOS to obscure modern consoles like Ouya or Zeebo to older consoles like those of Sega and Atari or the Amiga. In searching for videogames, GameFAQs has basic and advanced search options with basic search only using the keywords to search based on title with the most popular searches being listed first. Advanced

search on the other hand is used to narrow down one's search results with filters such as platform, categories, and company and/or to sort one's search result based on popularity, title, release date, score, or user reported statistics. The search engine does not support searching for non-latin characters.

Each videogame has their own page with several different tabs with each having different functions. The tabs, Home and Board, will always appear regardless of the status of the videogame while answers will always appear for released videogames with other tabs like FAQs, Cheats, Saves, Reviews, Images, and Videos appearing as they are added. The Home tab contains important information such as a brief description of the videogame and the release data but also may contain user statistics about the game such as score and play time, credits, and suggested games based on what other users that own or have played this game have. The Board tab houses user created message boards where users can share and discuss information. The Answers tabs is where users can post questions about the game in hopes that another user may have a suitable answer to the question. The FAQs tab holds user made FAQs, walkthroughs, and guides but also may contain other things such as maps, charts, or documents containing codes for cheating devices like GameShark or Action Replay. The Cheats tab usually holds information on in-game codes/cheats, secrets, glitches, and trophy/achievement objectives. The Saves tab will hold user uploaded save game directories that other users can download to use for themselves. The Reviews tab has user uploaded reviews of the videogame but also links to professional critic reviews. Both Images and Video are to upload media on the videogame whether it is official promotional material or user created screenshots/gameplay videos.

Steam

Steam is a digital distribution service where users can find and buy videogames on their PC through their services. All videogames distributed through Steam are only those that have a Windows, Mac, or Linux release. Users can use Steam's search engine to find games using a key word that will search through Steam's database of games to find games that contain that key word in either the title or description. Steam's search engine allows users to sort through games by relevance which is a combination of the key word and popularity, release date in a descending order, name in an ascending order, price in both ascending and descending order, and user rating in an descending order. The search results can also be narrowed by using filters to include only results that have certain tags, operating systems, features, number of players, language, or VR support. Users can also find games via Steam's recommendation system that will recommend users games that match with the user's preferences based on the user's videogame library, wish list, and play time on certain games. The search engine also supports searching for non-latin character matches.

On each individual page of a videogame in Steam's catalogue, users can find all sorts of useful information as well as a link to the Community Hub for the game. On the main page, users can find information on the description, producer, developer, content rating if provided, languages, genres, tags, system requirement, news, similar games, and customer reviews. The Community Hub acts as a place where users can discuss and share information about the videogame with users being able to create threads in the discussion board. The hub also allows users to share screenshots, videos, and artwork with others. One of the more exciting features of the Community Hub is the Steam Workshop which is where users can create, share, and download third-party content for the games that allow it.

QooApp

QooApp is a platform that allows users to find and download mobile apps in apk format without being blocked by region locked content with QooApp specializing in anime games and otaku related content. QooApp is also a platform where users can find information about news on new otaku related mobile apps and related events. To find apps the user can use QooApp's search engine which allows the user to input keywords or phrases and will search through game names, developer, tags, pre-registration phase games, or all the above. The search results can further be narrowed via the filters that can filter by status, region, genre and theme. The search engine also supports searching in non-latin characters.

On an app's individual page, the user can find information relating to the game. On this page the user can the game description, developer, and system requirements. On each page there are also some tabs that the user can switch to see different parts of the community. The Review(s) tab provides a space where users can write, view, and comment on reviews that other users have made about the app. The Article(s) tab contains all sort of news for the game including game updates, in-game events, and real-world events related to the game. The Notes tab acts as a place where users can talk with each other and share screenshots or fan works.

Reddit

Reddit is a huge social media message board where users can post content in user-created boards called "subreddits" that usually encompass some sort of subject. There exist many subreddits about gaming with many also being about just a single specific game or series. In Reddit, content is displayed in the form of a user-created post where other users can discuss the content in the post in the form of comments. Users can also search for specific post or for subreddits with Reddit's search engine that looks for a match in subreddits, posts, and comments to the provided keywords or phrases. In this search the user can sort the results by relevance to

the user's input, top posts, newest posts, posts with the most comments. Users can then narrow these results by checking with a certain time frame such as in the last 24 hours, week, month, year, or in all time. The search engine does not support searching for non-latin characters.

In individual subreddits, users can find the posts by other users, comment on others posts, or create their own post. The content of posts can range from news, discussion topics, questions, fan works, other people's fan works, screen shots, videos, guides, tips, and various other topics. Users can also use the search engine mentioned above to search for specific posts limited to those of the subreddit the user is searching from. Users can also just sort posts on the main page of the subreddit by different parameters: Hot, New, Controversial, Top, and Rising. Hot posts are described as posts that have been getting a lot of upvotes recently. New posts are bit self-explanatory as they are just posts that have been most recently posted. Controversial posts are those that have a lot of upvotes but also a lot of downvotes. Top posts are those that have obtained a large amount of upvotes with a certain amount of time. Rising posts are similar to hot posts but are much more recent.

Wikipedia

Wikipedia is an online encyclopedia that is created and maintained as an open collaboration project meaning that users can freely edit and make corrections to information in the pages in Wikipedia. Pages in Wikipedia can be searched for through Wikipedia's search engine that allows for searching a main key word or phrase with additional parameters if needed. The additional parameters are sectioned off two groups parameters about the page text and parameters about the page structure. Parameters about the page text are searching for pages with specific words, pages with exact sequences of words, pages without the specified words, and pages with at least one of the words in a list of words. Parameters about page structure include

searching for pages that contain a key word in the page title and for pages that are under a category that contains a key word in the category name. The search engine also supports searching for non-latin character matches.

Videogame pages often follow similar formats with an info box on the top right of a page that contains general information and the main bulk of the page providing additional information about videogame. The info box often contains credits for the game such as the developer, publisher, composer, director, producer, and artist as well as others that may have been involved in the videogame. The info box also often contains release information such as the platform and the release date. Some other information that may be included in the info box are the engine the game was made on, the series the game is from, the game's genre, and the game's play modes. The main bulk of the page provides much more information such as a description of the what the game is about. The page also often includes sections that describe the game play and the game play mechanics present with the videogame. There is also often a large section that usually summarizes the setting of the videogame but may also summarize the story in the videogame. Other sections that are often included in a videogame's page are development history, release history, and reception of the videogame.

Discussion

From reviewing these websites, it can be seen most of these websites support some sort of search engine that allows the user to more easily search for information. Most of the search engines used are quite excellent as they allow for searching with multiple parameters with GameFAQs's being perhaps the most thorough of them but GameFAQs's search engine is not without its flaws. GameFAQs sports a search engine that searches based solely on the title of the videogame while the others do so as well but also search within the contents such as with

QooApp and Steam that search descriptions as well. This can cause some problems as for example when one wants to search for a game about alchemists and the inputted key word is “Alchemist”, the results would only yield those with “Alchemist” in the title which would most likely leave out a lot of games involving alchemists. Another flaw that affects not only the GameFAQs search engine but also Reddit, English language Steam, and English language Wikipedia is the lack of accessibility using non-Latin characters. With the case of GameFAQs, non-latin characters are completely unsupported while the other three only search for exact matches to the characters. On the other hand, QooApp searches through its multilingual versions for results that might contain the key word.

In the literature review, it can also be seen that most of these websites provide well organized information about the game with the exception of Reddit which for the most part is not really where one would find information about the game but where one would discuss and share in-game information and news about the game. Although these websites often provide excellent information there is usually some bits of missing information with one of the most common pieces being content rating. GameFAQs is often diligent about content ratings especially ESRB ratings and to a lesser extent, PEGI ratings, but sometimes lacks ratings for foreign releases such as CERO and sometimes lacks the ESRB rating Google Play provides for mobile games. QooApp completely lacks any sort of content rating on apps in their catalogue. Steam only provides ESRB ratings and only if the game itself already had one. Wikipedia also lacks content rating information on a videogame’s page at least for the English versions.

The other thing that this literature reviewed looked at was the ability to form a community in these websites. GameFAQs, QooApp, Steam, and Reddit do it quite well but Wikipedia is purely an encyclopedia of information and not a hub for original thought as

Wikipedia puts it. Each one of the four that can form a community does so via some form of discussion board where a user starts a thread by posting something and thus others can come into the thread and discuss the topic at hand via comments and replies. Some minor flaws do appear though with these websites' discussion boards. GameFAQs is always sorted by most recent but you can search for a specific tag. QooApp is also always sorted by most recent but also has no way to search the discussion boards. Steam discussion boards have no tag system to attach to topics. Reddit while probably the best of the four as it has tags in the form of "flairs" and can be sorted, searching for flairs is not very intuitive as one has to search for flair by inputting, "flair_name:"*flair name*"," into the search bar.

Conclusion

There are plenty of websites and apps where one can find information about videogames or form a community around videogames. The purpose of this literature review is to compare these websites and apps and review the strengths and shortcomings of each. GameFAQs being probably the best of the five with its organized information, excellent search engine, and easily traversed discussion boards is not without its flaws though with its most glaring being the lack of accessibility for non-English using users. QooApp while also great is limited by the fact the focus of the apps available is narrowed to anime games and otaku related apps and by the inability to easily traverse discussion boards. Steam similar to QooApp also has a narrow catalogue of games except in this case it is limited to computers games and only those that steam hosts. Reddit, as stated earlier, is great for having a community form but not so much for looking up something like the content rating or release data. Wikipedia, also as stated earlier, is great for finding information like release data about a videogame but not so much for community activities as Wikipedia is not a discussion forum as Wikipedia has stated themselves. Overall, the

five websites described above are quite excellent for finding information about a game or for forming a community around games but there are also some flaws with some present in some but not the others.

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SWOT Analysis

	HELPFUL	HARMFUL
INTERNAL ORIGIN	Strengths <ul style="list-style-type: none"> • Experience in working on databases. • The project will take and combine some of the best features of other similar services such as a thorough search engine and a community section where one can discuss videogames. • Improvements on certain features such as multilingual accessibility and better search engine for community posts. • Potential addition of new features not present in other services such as the addition of a section that keeps track of fan-translation status. 	Weaknesses <ul style="list-style-type: none"> • Lack of experience in working on such a large-scale project thus potentially causing problems later on. • Lack of experience in working on certain features that are similar to those of this project to this one. • Compounding with the lack of experience is the lack of man power, • Lack of features on this project that some websites have that make them stand out such as Steam's digital distribution service or GameFAQ's walkthroughs/FAQ database. • Lack of experience in other languages thus potentially hindering attempts to make the project multilingual.
EXTERNAL ORIGIN	Opportunities <ul style="list-style-type: none"> • Growing videogame industry. • Growing demographic of people as newer generations 	Threats <ul style="list-style-type: none"> • The cost of gaming since as videogames become more advanced, better hardware is needed to play such videogames

	<p>grow up with easier access to videogames as the mobile games industry, as cloud gaming technology advances, and as gaming consoles become more portable as such with the Nintendo Switch.</p> <ul style="list-style-type: none"> • Growing demographic as videogames become more popular through social media. • Growing videogame industry as eSports becoming more popular and widespread and as eSports gain more recognition throughout the world. 	<p>thus resulting in the need to invest in buying better hardware which can put people behind a couple hundred dollars. This can potentially discourage people from gaming.</p> <ul style="list-style-type: none"> • The various quirks of cloud gaming services including the cost on regarding bandwidth and data, latency as there is a delay between user inputs and game response which varies in length depending on the user's internet connection, lack of user access to game files which means that things like modding can't be done, and the lack of permanency as services can become discontinued. These factors can also push people away from gaming. • Legislature like EU's Article 13 and the repealing of net neutrality policies can potentially lead to a decline in gaming community interaction online as these could potentially hinder user access to websites and services where gaming communities thrive such as
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		<p>what this project aims to become.</p> <ul style="list-style-type: none"> • The age and recognition of other websites as other websites are well trusted and have large communities due to their age while also providing good, well-informed information thus gaining wide-spread recognition. This can lead to lack of interest in something that will provide a similar service to existing ones like this project. • The addition of fan-translation promotion on the website may put the website at odds with official publishing companies and developers who may be against fan-translations.
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