



Srs hotstar - srs

Software Engineering (Lovely Professional University)

SOFTWARE REQUIREMENT SPECIFICATION

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Submitted

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INTRODUCTION TO HOTSTAR STREAMING

The word "to stream" refers to the process of delivering or obtaining media in this manner, the term refers to the delivery method of the medium, rather than the medium itself, and is an alternative to file downloading, a process in which the end-user obtains the entire file for the content before watching or listening to it. We can also live streams some of the top-tics channels if we get the subscriptions.

Actually movie means a large file with lot of data, A client end user can use their media player to begin to play the movie file before the entire file has been transmitted. Distinguishing delivery method from the media distributed applies specifically to telecommunications network, as most of the delivery systems are either inherently streaming or inherently non-streaming. Nowadays Internet, Televisions (TV streaming) is a common form of streamed media. The term "streaming media" can apply to media other than video and audio such as live closed captioning, tickers tape and real time text, which all are considered as

"streaming text". The term "streaming" was first used in the early 1990s as a better description for video on demand on IP networks. but at the same time such video was usually referred to as "store and forward video", which was misleading nomenclature.

With streaming content, the user does not have to download the entire video or audio file before they start to watch/listen to it. There are challenges with streaming content on the Internet. If the user does not have enough bandwidth in their Internet connection, they may experience stops in the content and some users may not be able to stream certain content due to not having the compatible compilers or software systems. Hotstar is a platform which streams movies and TV shows.

1.1

PURPOSE OF HOTSTAR

- Saves on bandwidth cost, often eliminating cost entirely and watch movies and online tv through Internet.
- Creating a common place for various languages movies.
- Make a hassle free experience, where we can stream movies.

KEY FEATURE :- depends on the end-to-end available bandwidth.

1.2

HOTSTAR STREAMING STRATEGIES

We now detail the buffering phase and the steady state phase of the three streaming strategies used by Hotstar.

→ SHORT ON-OFF cycles.

We observe short ON-OFF cycles for Flash videos regardless the browser used, and for HTML5 videos when Internet explorer is used. We present a representative trace observed while streaming one Flash video and one HTML 5 video; the videos were streamed using Internet Explorer (IE) in the Research network. For both the videos, we observe a

buffering phase followed by a steady state phase. During the steady state phase the download amount increments in short steps. We present the evolution of the TCP receive window for the two streaming sessions in. This implies that Internet Explorer throttles the download rate of HTML5 video by periodically pulling data from the TCP buffers.

This implies that, for the Flash video, the YouTube servers throttle the rate of data transfer by periodically pushing the video content. We observe this behaviour for Flash videos regardless of the browser. We don't present the supporting figures due to space constraints. We now detail the buffering phase and the steady state phase when YouTube videos are streamed using the strategy of short ON-OFF cycles. We use the videos in the YouFlash and YouHTML dataset for these measurements.

i) Buffering Phase :

We observe that for most of the videos in the YouFlash dataset, YouTube sends approximately 40 seconds worth of playback data during the

③ buffering phase. The playback time is calculated by dividing the amount downloaded during the buffering phase by the video encoding rate. We present the cumulative distribution (CDF) of the playback time. The steep slope for the distribution of the playback time because of the strong correlation (correlation coefficient = 0.85) between the video encoding rate and the amount downloaded during the buffering phase. For the residence and the Academic networks, we observe a smaller amount of buffering. The smaller amount would be an artifact of our technique used to measure the amount downloaded during the buffering phase, we consider the start time of the first OFF period as the end of the buffering phase. This technique is sensitive to packet losses and we observed higher packet retransmissions, medians of 1.02% and 0.76% respectively in the Residence network and the Academic network.

ii) Steady State Phase

We now show that YouTube servers periodically transfer 64 kB blocks during the steady state phase design to attain an accumulation ratio of 1.25 for Flash videos. In this we present the distribution of the block sizes observed while streaming videos in the YouFlash dataset. We observe that 64 kB is the dominant block size in each network. The smaller block sizes observed in the Residence and Academic networks are because of packet losses that cause TCP retransmission timeouts. We observe block sizes larger than 64 kB when retransmission due to packet losses merge multiple short ON-OFF cycles to form a larger ON-OFF cycle. Now, we observe an accumulation ratio of approximately 1.25 for the majority of the streaming sessions in each network. For HTML5 on Internet Explorer, in Figure 7 we observe an accumulation ratio of approximately 1.25 for the majority of the streaming sessions in each network. For HTML5 on Internet Explorer, in Figure 8 we observe that

256 kB is the dominant block size in each network. As in the case of Flash videos, packet losses cause the block sizes to increase or decrease when Internet Explorer is used to stream HTML5 videos.

We present the distribution of the accumulation ratios when Internet Explorer is used to stream HTML5 video. In this, we observe a wide range of accumulation ratios. We believe this wide range is an artifact of our technique or the technique used.

1.3 REFERENCES

Wikipedia, YouTube.

2 OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

The program is a new self-contained product. It has come about due to the demand for such a product being identified in a series of studies. From these studies we saw that the main activity people used movies found online. These people would regularly spend periods of time searching websites to try and find the movies they wanted to watch, either somewhere to stream the video from or the files to download the video. Our system will aim to speed up this process and also

the main problem is watching interesting programmes in tv. if we miss or we are somewhere else we need to watch tv through internet.

2.2 PRODUCT FEATURES

The main feature is to search the movies from the internet and to collect all the channels broadcasting under one roof and streaming on the internet. The user can specify which of the 2 or both to look for. The results will be divided into the types that were specified using different tabs, and then the results will be orderable by different categories such as name, size, site etc. The user will have the option to filter out undesirable movies or channels containing certain content depending on user's want and taste. In addition the user will have the option to filter out or only certain movies or language can be selected by the user. They will have the facility for users to store their favourite videos, so that they can comeback to the video at another time as offline in several sites nowadays.

USER CLASSES AND CHARACTERISTICS

There will be two levels of user for our system. The first will be the general user that will be using our software to find their Movies or streams television. They will only see the front end of the system. The second level will be the system developer. They will be able to edit which sites the system will search, depending on whether they think the site is safe, compatible with respective software, the speed at which the site can be searched, and how useful the site is to users i.e., how many results have comeback from that site.

GENERAL CONSTRAINTS

Server capacity is how many users can access or can be online at once. More is the number of users more will be the network traffic and hence the server come in a down state. Personal firewall and updating is a tough task, it should be such that it should not block the network traffic, making the system slower. Firewall of the server should not collide with firewall of the user system.

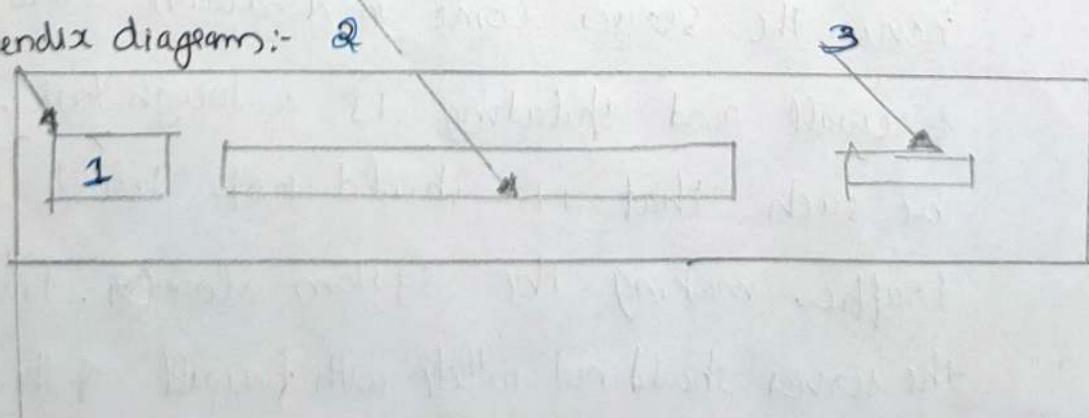
3 EXTERNAL INTERFACE REQUIREMENTS

3.1 USER INTERFACES

The user interface will consist of one main screen, allowing all functionality to come from this one screen. This allows the user to use the software with ease by not flicking through a number of different screens. In addition to this user can always see the vedios they are looking for.

The main screen will be laid out as in Appendix B Diagrams along with the description of the diagram. We decided on this type interface because we felt that it would be very simple for the user to all these features compiled into one screen it will give the software more flexibility and allows for easy and simple usage. This will appeal to both naieve computer users and experienced computer users with a higher selling market

Appendix diagrams:-



(6) 1. The first feature of the software is a menubar. This software includes the basic features used in similar products such as new search, close, load etc. However with our software there are two extra features. There being a filteroption which allows the user to set parental controls over the software. This enables the user to be able to search for videos without getting explicit content. In addition to this there is a favourite's option . This feature gives the user the option of being able to store links to their favourite videos in the software and be able to go back to these websites after restarting the software. And user also allowed to select the ~~set~~ region, language option which will ease their search .

2. This is the main engine behind the software. This is where the user enters the name of the movie or actor name to search and also the name of tv channel need to be streamed. Once the user has typed in the name of their desired video they can either press the enter key or the search button to run the query.

3. This is where the actual search results will be displayed. Within, there display field the user will be told the name of the video, the location of the video (which website the video is on), the size of the video so the user can decide if they wish to download the video or just to stream the video, the rating of the video with information on how safe the website is, and finally comments on the video (what other users think of the video)

3.2 SOFTWARE INTERFACE

The software will use hyperlinks to allow the user to open the websites in their default web browser when the user want to open any movie or streaming channel.

3.3 SERVICE SITE SYSTEM REQUIREMENT

- * Unix/Linux operating system with 32-bit or 64-bit support
- * SQL database. MySQL pre-compiled binaries are recommended
- * Apache2 (mpm-prefork) with SSL support
- * PHP5 with support for MySQL, OpenSSL, URL etc

③ 3.4

USER SITE SYSTEM REQUIREMENT

In order to watch movies or live tv on netflix sites, user make sure that his system has access to the following system requirements.

- * Flash Player 7.0+ plug-in.
- * Windows with latest update installed
- * Mac OS X 10.3 or higher
- * best browser
- * Broadband connection with high speed

3.5

HARDWARE INTERFACE

The external hardware interface used for accessing the video streaming sites is the personal computer of the users. The PCs may be laptops, netbooks with internet connection w/ a wireless connection, via modems or broadband.

a) Communication Interface

Communication standards that will be used through the software will be PHP or other such languages. These will be used to query the different servers that the website use and will give us back.

b) Performance Requirement

- * Query times will take no longer than 5 seconds to any website.
- * Sending the hyperlink to the default browser will take less than 1 second.
- * Loading the programs will take less than 10 seconds.
- * Any result with 0 seeds will not be displayed.
- * Sorting results should take less than 0.1 seconds.
- * A results page will be displayed 100 results.
- * Any result with a rating less than 1 will not be displayed.

4
4.1

SPECIFIC REQUIREMENTS

HOTSTAR STREAM SEARCH

→ Description and Priority

This feature will search a movie the user enters, through a database of ~~multiple~~ websites that are added by the development team as well as websites that show links to videos hosted on other sites such as surfthecchannel.com, alluc.org etc. The results will be displayed in a tab on the programs main window. This tab will be split horizontally into two sections, the top half for the video hosting sites and the

(8) bottom half for the video link sites. This is another of the main features of the software and also has a higher priority for development.

→ Stimulate responses Sequences

Usertracks streaming hot tickbox - system will now query the video hosting sites in its database when a search is started. Hosting sites will include the actual videos on their services. e.g:- YouTube. User ticks streaming links tickbox - system will now query the video link sites in its databases when a search is started. The link sites will include external video links to differentiate video hosting sites.

e.g:- surf the channel . com. User enters the search terms and starts search - systems sends queries to the video stream tab in the program. The hosting half of the tab displays the website and video name (e.g:- combinations of the shadow show's name and the episode and name). User sorts the search results by clicking once on the column header - system sorts all results by descending / ascending order. User filters websites they

they want to be shown in the results - system removes unselected websites from the results. User click on next page button - system displays the next set of results for the search.

4.2

→ FUNCTIONAL REQUIREMENT

- * Streaming search will share the same bar with the torrent search.
- * Database of video hosting and video linking sites can be updated via the Internet.
- * There will be a tick box to allow the user to choose to include video host searching in the search.
- * There will be a tickbox to allow the user to choose to include video link searching in the search.
- * Query to video hosting sites will retrieve full video name, length, date posted and a link searching in the search to the video itself.
- * Query to video link sites will retrieve the show's name, episode name and a link to webpage itself

- ⑨
- * If no results are found on a search it will display a message "No results were found for the search."
 - * Results will be arranged in length / date / alphabetical orders by clicking on the column header.
 - * There will be page button for the user to navigate the result.

4.3

NON FUNCTIONAL REQUIREMENT

→ Performance

The system must be interactive and the delays involved must be less. So in every action-response of the system, there are no immediate delays.

In case of opening databases, sorting questions and evaluations there are no delays and the operation is performed in less than 2 seconds for opening, sorting, computing, posting $> 95\%$ of the files.

Also when connecting to the server the delay is based editing on the distance of the 2 systems and the configurations between them so there is high probability that there will be or not a successful connection in less than 20 seconds for sake of good communication.

→ safety

Information transmissions should be securely transmitted to servers without any changes in information. It may leads to the hacking of accounts and illegal using of account.

→ Reliability

As the systems provide the right tools for discussions, problem solving it must be made sure that the system is reliable in its operations and for securing the sensitive details.

4.4 SOFTWARE QUALITY ATTRIBUTES

→ Availability

If the internet service gets disrupted while sending information to the server, the information can be send again for verifications.

→ Security

The main security concern is for users account hence proper login mechanism should be used to avoid hacking. The tablet id registration is way to spam check for increasing the security. Hence, security is provided from unwanted use of recognition software.

①

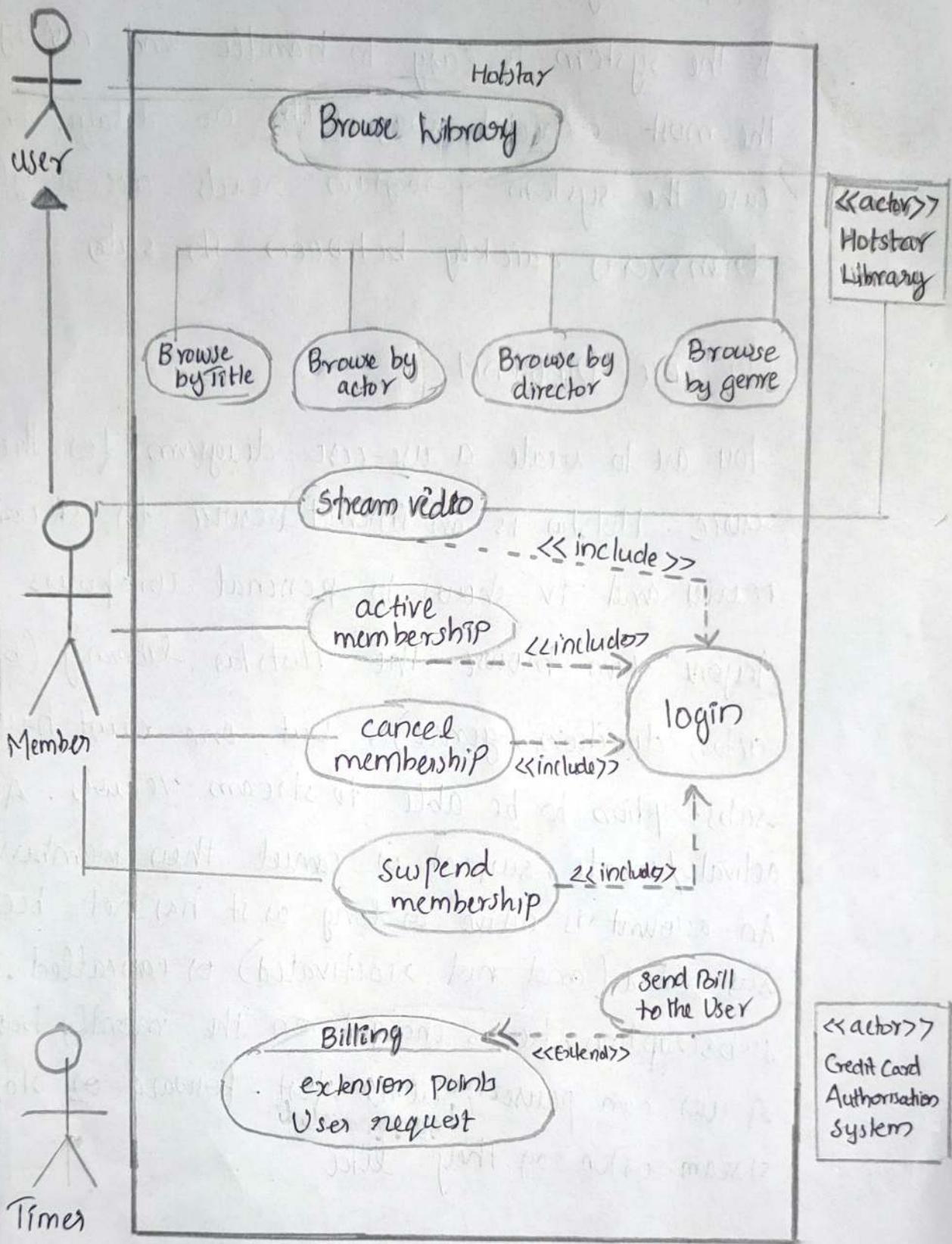
→ Usability

As the system is easy to handle and navigates in the most expected way with no delays. In that case the system program reacts accordingly and transverses quickly between its states.

5

USE-CASE DIAGRAM

You are to create a use-case diagram for the Hotstar service. Hotstar is an internet service for streaming movies and TV shows to personal computers and TVs. Anyone can browse the Hotstar library (by title, actor, directions, genre), but one must have a subscription to be able to stream videos. A user can activate/create, suspend or cancel their membership. An account is active as long as it has not been suspended (and not reactivated) or cancelled. The subscription fee is charged on the monthly basis. A user can pause, rewind, fast-forward or stop a stream often as they like.

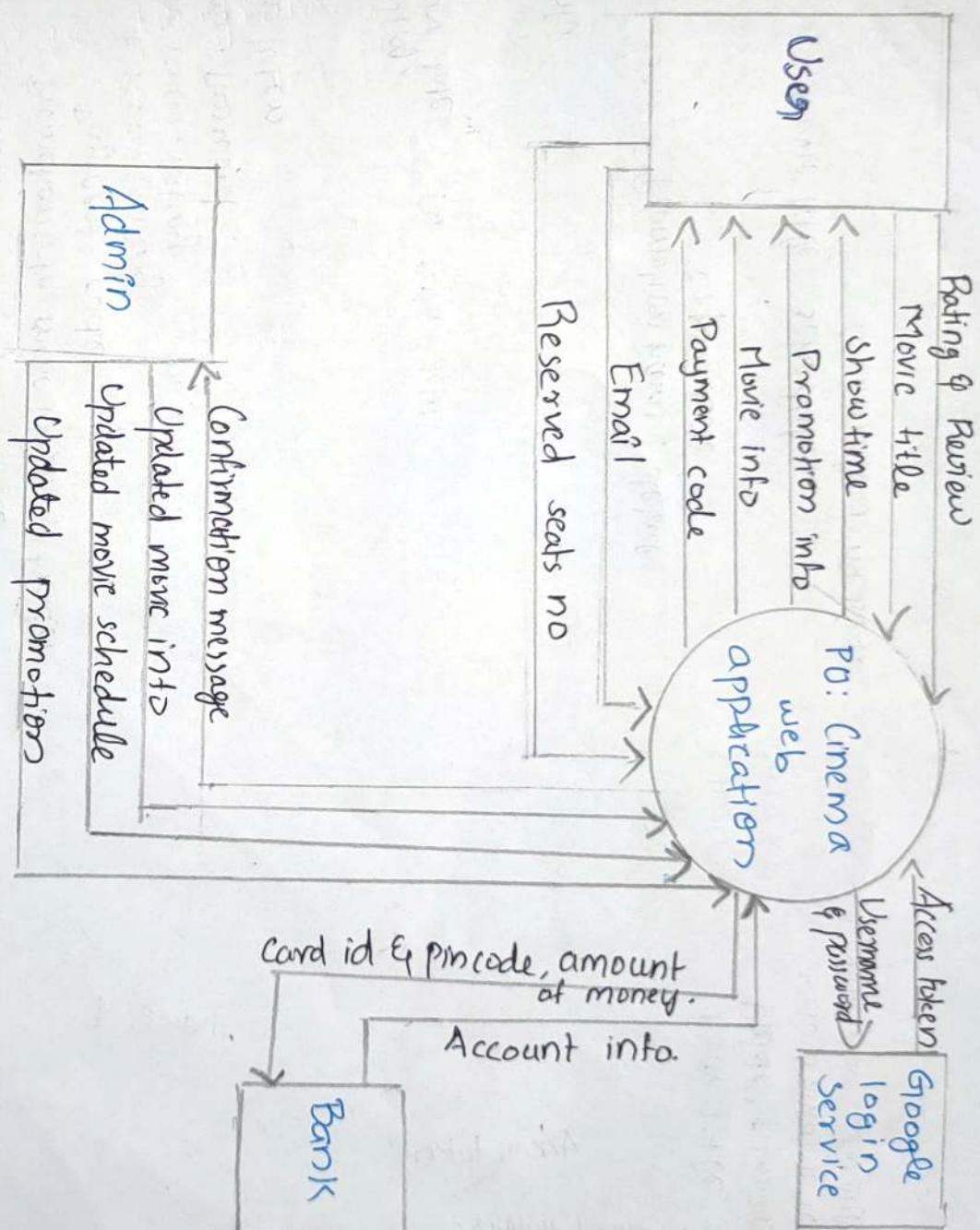


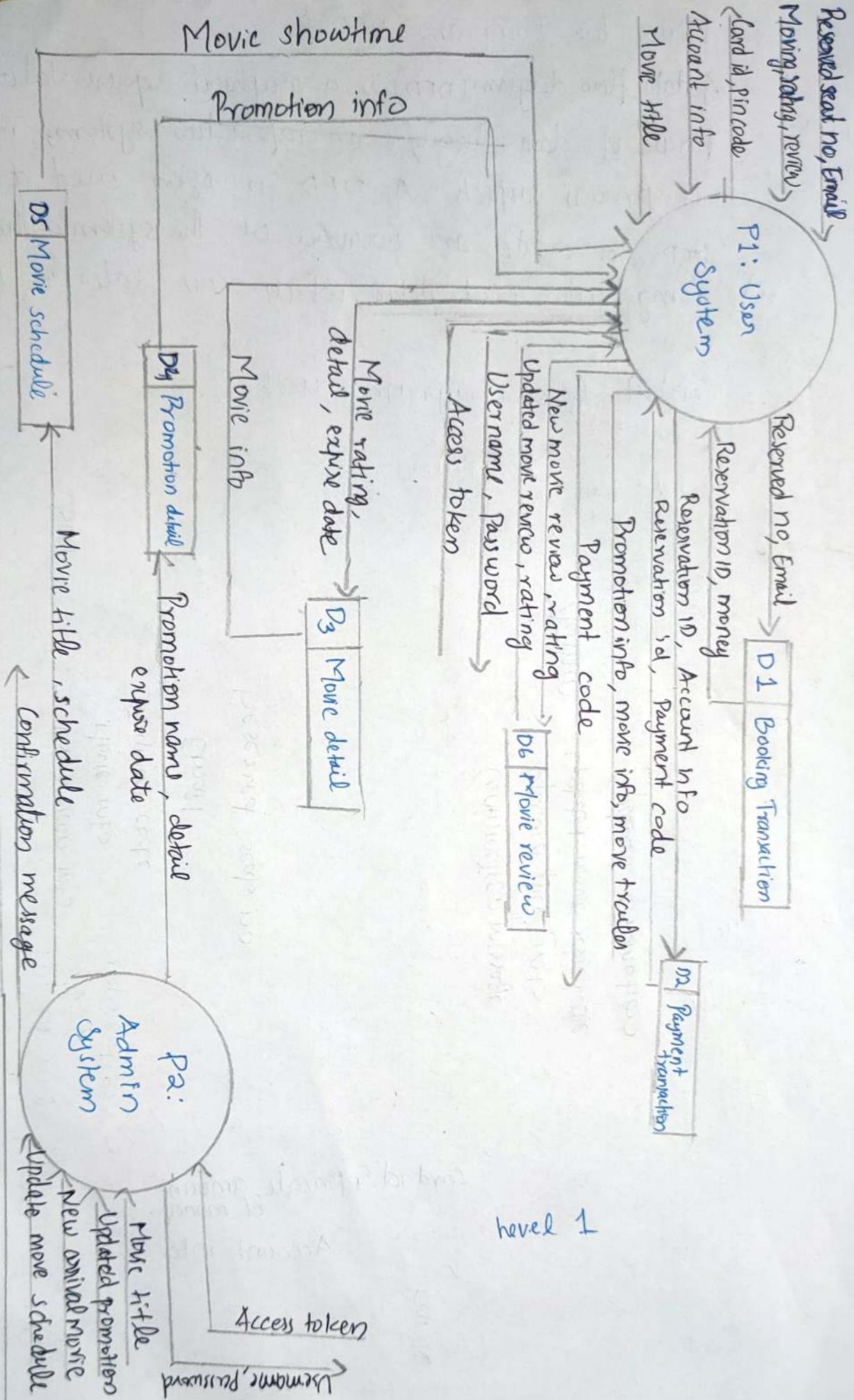
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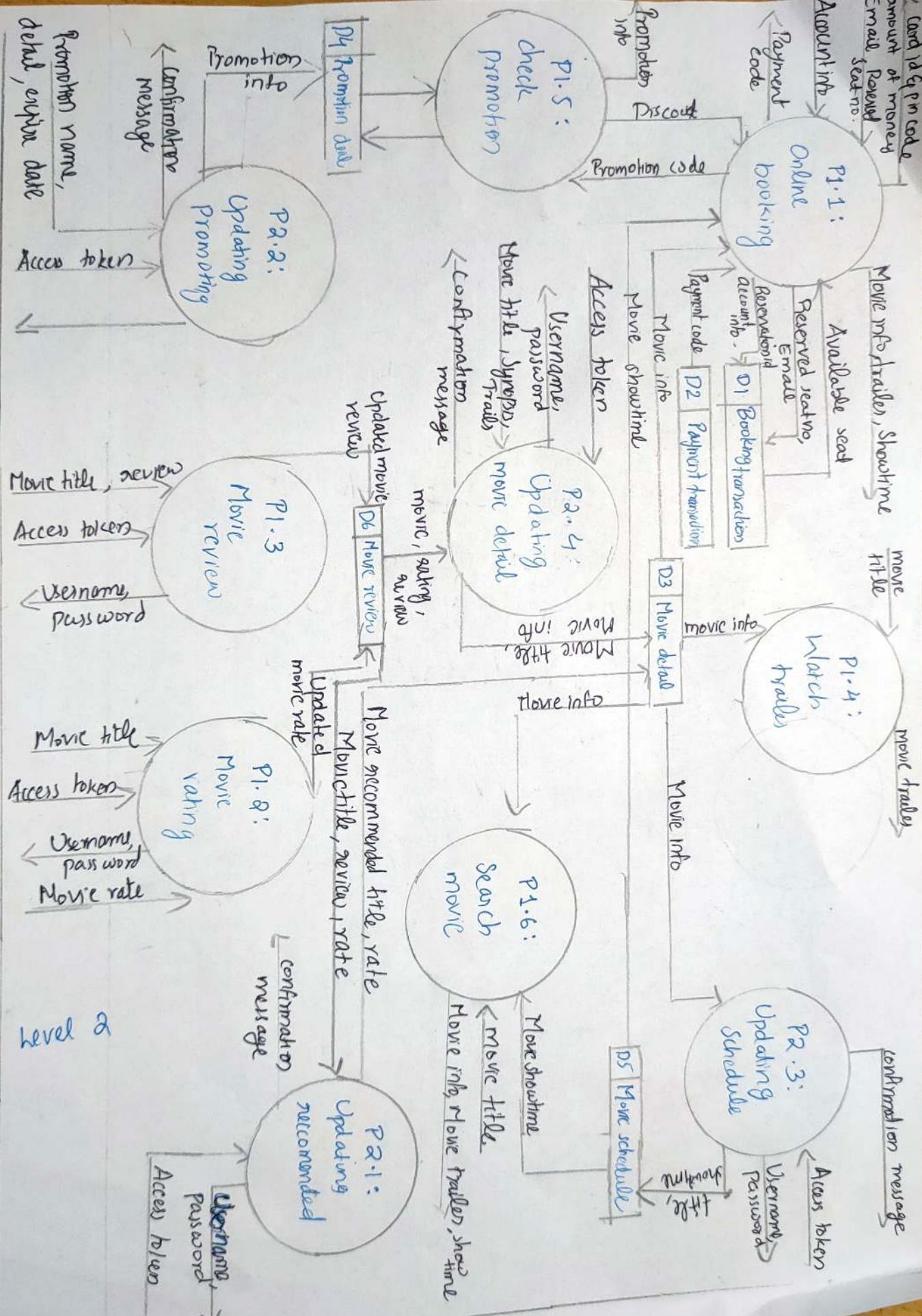
Data Flow Diagram (DFD):

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. A DFD is often used as a preliminary step to create an overview of the system without going into great detail, which can later be elaborated.

Context level diagram (Level 0)







7

TEST CASES

→ SIGNUP / CREATE ACCOUNT

- TEST TO PASS :- Name should contain only alphabet, email id should be valid, mobile number only contains number and must not be greater than 10 and password must contain alphabet, number and a special character and must also match with the confirm password.
- TEST TO FAIL :- If name will contain other than alphabet, email id is not valid, mobile number will contain anything other than number, password does not contain any alphabet, number, special characters.

→ LOGIN

- Test to pass :- User should enter a registered email id and password should match with the saved password.
- Test to fail :- if user will enter a not registered email id or password will be incorrect.

→ RECOMMENDATION

- Test to pass :- The movies, songs etc. shown to user are watched by that particular user.

HISTORY:

- Test to pass :- The history shown to a particular user is made by only that user.
- Test to fail :- If history of some other user is shown to particular user.