SYSTEMS ANALYSIS

NETFLIX v/s AMAZON PRIME VIDEO

Overview

Comparison of two information systems using systems analysis techniques. To show the differences and similarities between the two systems and to suggest improvements to the information systems.

Table of Diagrams

NAME	PAGE NO.
Context Diagram for Netflix (Level 0, Process 0)	3
Context Diagram for Amazon Prime Video (Level 0, Process 0)	4
Diagram 0 for Netflix (Level 1)	5
Diagram 0 for Amazon Prime Video (Level 1)	6
Diagram 1 for Netflix (Level 2, Process 1)	8
Diagram 1 for Netflix (Level 2, Process 2)	9
Diagram 1 for Netflix (Level 2, Process 3)	9
Diagram 1 for Netflix (Level 2, Process 5)	10
Diagram 1 for Netflix (Level 2, Process 6)	10
Entity Relationship Diagram for Netflix	11
Diagram 1 for Amazon Prime Video (Level 2, Process 1)	12
Diagram 1 for Amazon Prime Video (Level 2, Process 2)	12
Diagram 1 for Amazon Prime Video (Level 2, Process 3)	13
Diagram 1 for Amazon Prime Video (Level 2, Process 6)	13
Diagram 1 for Amazon Prime Video (Level 2, Process 7)	14
Entity Relationship Diagram for Amazon Prime Video	15

Introduction to Netflix

Netflix is an online video streaming service which was founded in the year 1997. They provide documentaries, Tv series and a wide range of movies to their subscribers.
Netflix has about 51% of US streaming subscriptions. It is also reported to have around 137.1 million

users worldwide.

Introduction to Amazon Prime Video

Amazon is basically E-commerce site. The user can access the amazon website without any membership and buy products from the E-commerce site. With an amazon prime membership, amazon gives access to various products such as amazon prime video, amazon music, amazon books etc.
We concentrate on amazon prime video here, It is an online video streaming service which includes movies, Tv series, documentaries which was launched in 2006.
Amazon Prime Video has about 38% of US streaming subscriptions. It is also reported to have around 90 million users worldwide.

Similarities between Netflix & Amazon Prime Video

1) **Online Streaming Entertainment :** Both systems are online entertainment streaming services which provides user a wide range of option of movies, Tv series, documentaries. This is largely being accepted by the people and cable Tv is becoming extinct.

2) **Monthly Subscription :**
There is monthly subscription to both the Netflix and amazon prime video services. There are 3 types of plan each with Netflix and Amazon Prime Video. Netflix offers basic, regular and premium plan and Amazon Prime Video offers regular, student and senior plans. Both have their own advantages but mainly deal with difference in price.

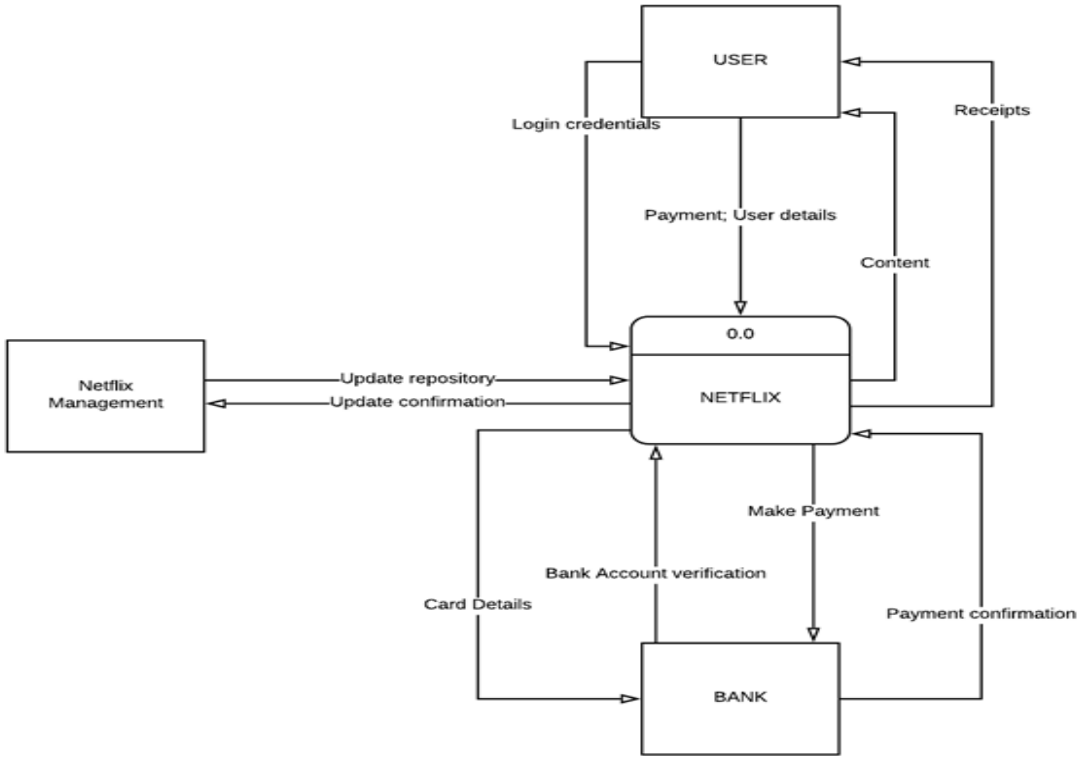
3) **Display modes in HD/Ultra HD :**
The modes of display depend on the plan you choose. The pricier the plan, the more options of displays you will get access to.

4) **Multiple Screening :**.
Both Netflix and Amazon Prime Video information systems have a monthly subscription charges. There are various types of plans depending the number of screens, HD display user can choose whichever plan suits him. User can use the service on multiple screens simultaneously all over the world.

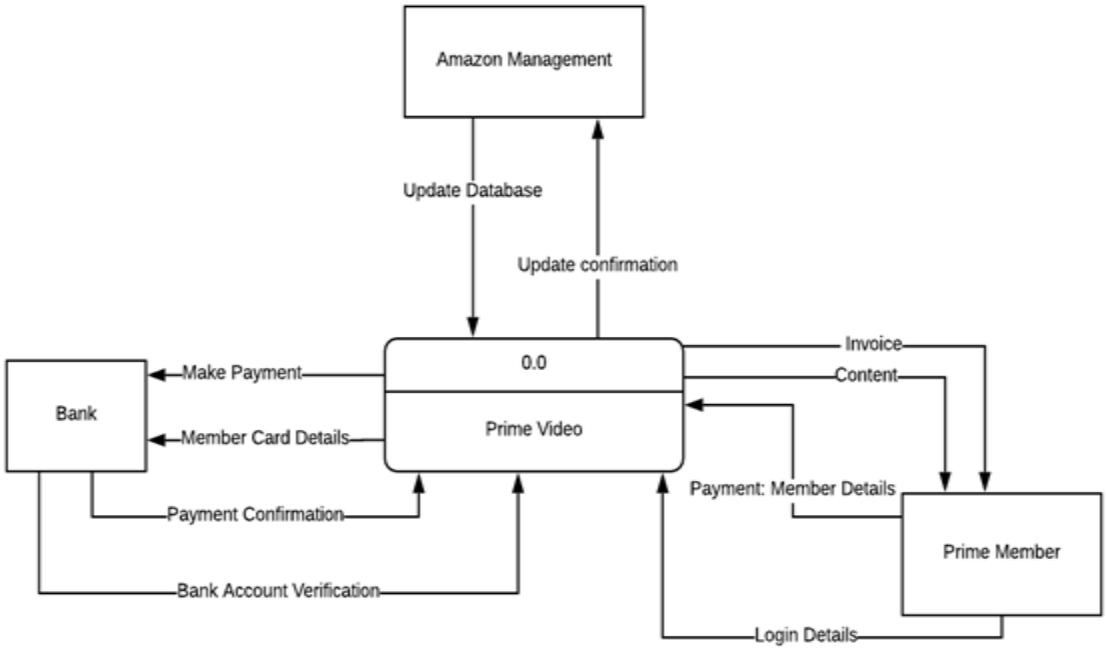
5) **Accessible from any electronic device :**
Both Netflix and Amazon Prime Video can be accessed from your desktop, laptop, mobile devices or any other electronic device. They have a web application and a mobile application for the user to access the content.

6) **Both systems provide some exclusive content :**
Netflix and Amazon Prime Video have some content which is exclusive to their Services. For example, we have some Netflix produced movies on Netflix which we don't find it anywhere else.

Context diagram of Netflix (Level 0, Process 0)



- The Netflix context diagram has 3 external entities namely: User, Bank & Netflix Management.
- For the user to access the content in the Netflix system, he/she has to pay the subscription fee. So, user sends his/her information and the payment details (card details) to the Netflix system which is indicated as a data flow.
- This information is collected by the Netflix system and sent to the bank for verification of the bank account and the payment of subscription fee.
- The bank sends a verification message if it is a valid bank account and then processes the payment and sends an acknowledgment to the Netflix system as payment confirmation which is then forwarded by the system to the user as receipt.
- Once the payment is done, User can now log in to the Netflix system and access the content.
- The Netflix management external entity is responsible for uploading and deleting the contents from the Netflix information system.



- The Amazon Prime Video context diagram has 3 external entities namely: Prime Member, Bank & Amazon Management.
- For the prime member to access the content in the amazon prime video system, he/she has to pay the subscription fee. So, member sends his/her information and the payment details (card details) to the amazon prime video system which is indicated as a data flow.
- This information is collected by the amazon prime video system and sent to the bank for verification of the bank account and also the payment of subscription fee.
- The bank sends a verification message if it is a valid bank account and then processes the payment and sends an acknowledgment to the amazon prime video system as payment confirmation which is then forwarded by the system to the member as an invoice.
- Once the payment is done, Member can now log in to the amazon prime video system and access the content.
- The amazon management external entity is responsible for uploading and deleting the contents from the amazon prime video information system.
- Amazon prime video has a major difference from Netflix system i.e. All the content in the Netflix information system is free for subscribed user whereas the amazon prime video has some content which asks the prime member to buy/rent the content or again subscribe to a 3rd party entity for accessing particular content. This will be explained further using the level 1 diagrams.

Diagram 0 of Netflix (Level 1, Process 0)

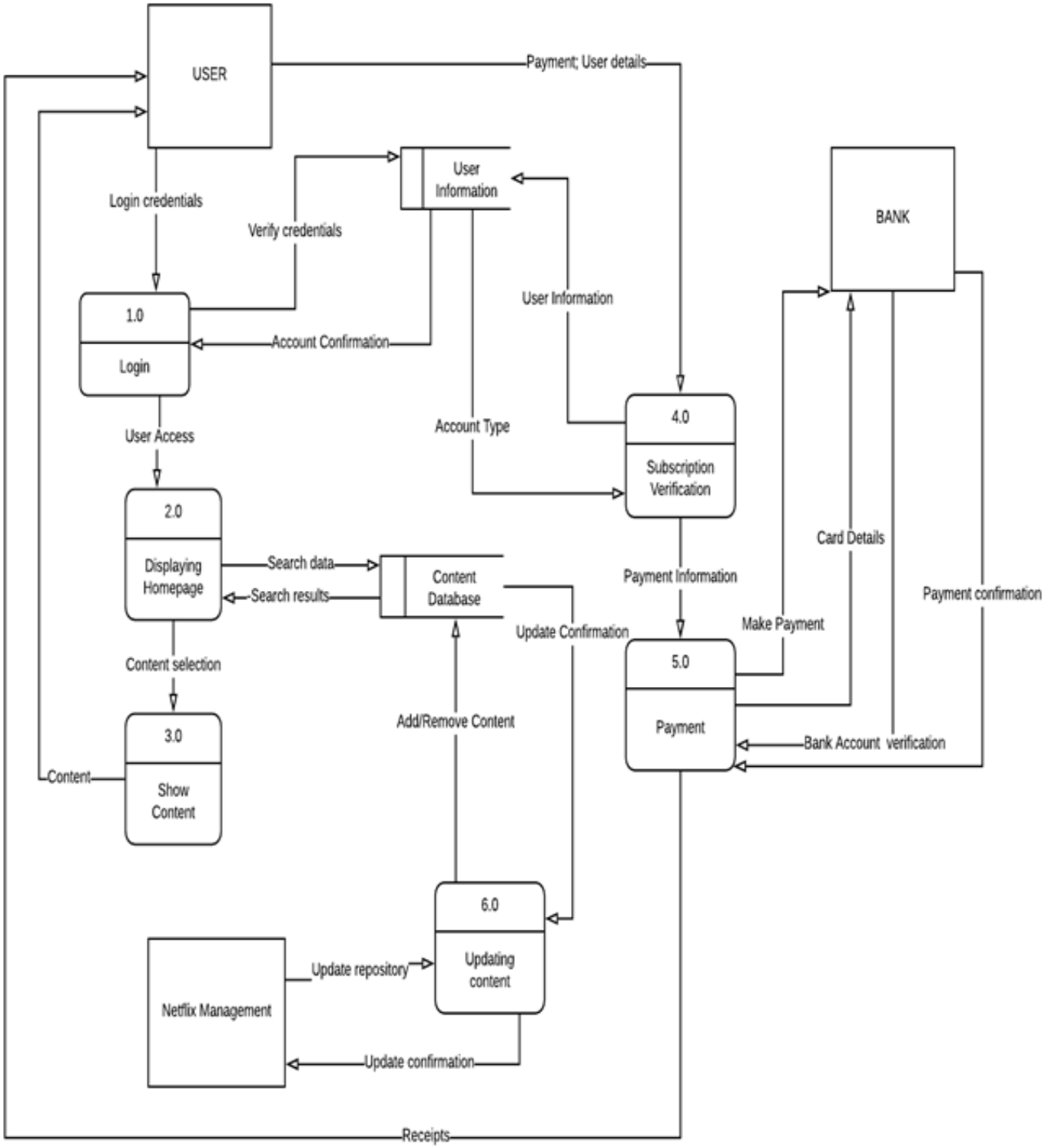
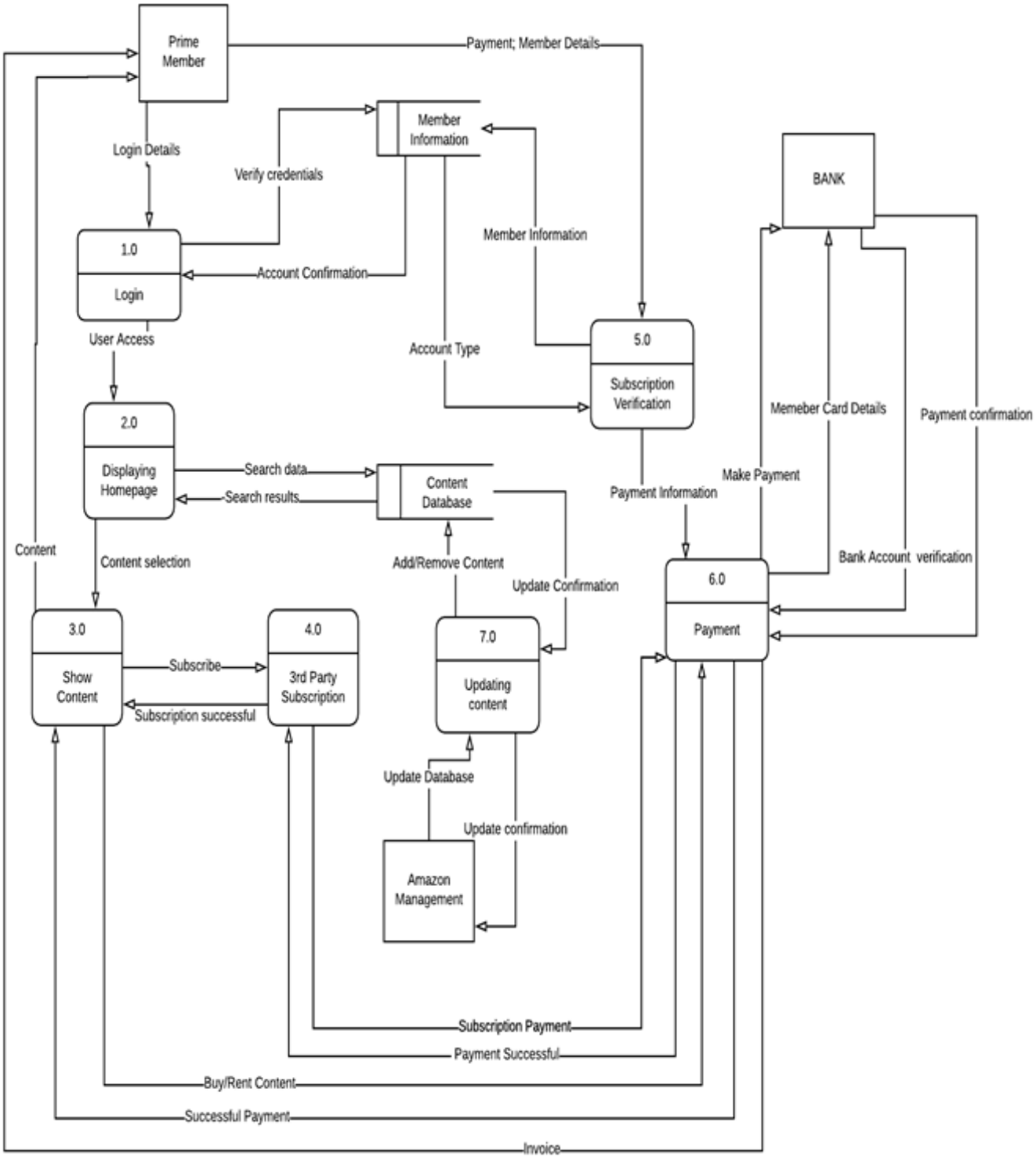


Diagram 0 of Amazon Prime Video (Level 1, Process 0)



In the above diagrams, we can see all the main functionalities of the Netflix and amazon prime video.

We have the following processes, entities and datastores defined in our diagram 0:

NETFLIX			
Process no.	Processes	Entities	Datastores
1.0	Login	User	User Information
2.0	Displaying homepage	Bank	Content Database
3.0	Show Content	Netflix Management	
4.0	Subscription verification		
5.0	Payment		
6.0	Updating Content		

AMAZON PRIME VIDEO			
Process no.	Processes	Entities	Datastores
1.0	Login	Prime Member	Member Information
2.0	Displaying homepage	Bank	Content Database
3.0	Show Content	Amazon Management	
4.0	3rd Party Subscription		
5.0	Subscription verification		
6.0	Payment		
7.0	Updating Content		

Some of the processes as we can see are similar in both the DFDs, it is because their function is exactly the same. Below is the task performed by each process listed in our DFD:

LOGIN: This process will accept the user credentials and register them in the datastore if the user is creating a new profile or else it will validate if the combination of the password and the userID is valid and registered in the user information.

DISPLAYING HOMEPAGE: Once the user is given the access to their profile, the system environment will open where there will be recommendations of content, search bar and other options which customer may want to use in the system.

SHOW CONTENT: Once the user has made the choice of the content they want to watch, can be a Movie/ TV series/ Documentary or even a trailer, this process will fetch the selection from the datastore and then stream it on the screen for the user to watch.

SUBSCRIPTION VERIFICATION: While making the payment for the subscription, to verify which monthly plan the user is currently subscribed to in order to charge the appropriate amount the process will validate the user details from the user information datastore and once the verification is done the bill will be created for the customer to process the further actions to complete the payment.

PAYMENT: This process accepts the payment details like debit/credit card details, user details, interacts with the assigned bank completes the payment and provides the bill to the user. In case of Amazon Prime Video this process also does the job of payment when the user wants to rent/buy content online or pay for the subscription of a 3rd party like HBO, Showtime etc.

UPDATING CONTENT: The objective of this process is to complete the action of updating/ modifying/ adding or deleting the content online which is provided for the user. This process is only accessible to the company employees who are authorized for managing the web content on these systems.

3rd PARTY SUBSCRIPTION (Only in Amazon Prime Video): Because Amazon Prime Video has this extra feature of subscribing to other online entertainment streaming companies to watch a particular content, this process is added. It will redirect the customer to the 3rd party subscription page where the user will complete the subscription and return to the amazon prime video page and view the content they choose.

LEVEL 2 DIAGRAM FOR NETFLIX

Diagram 1, Process 1 (LEVEL 2)

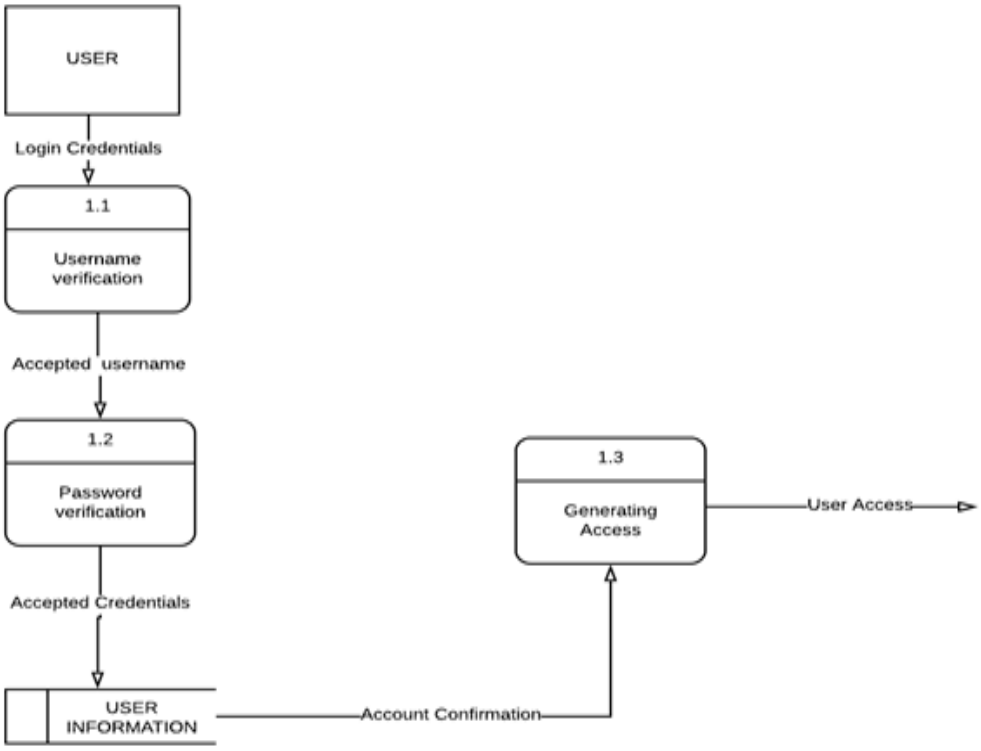


Diagram 1, Process 2 (LEVEL 2)

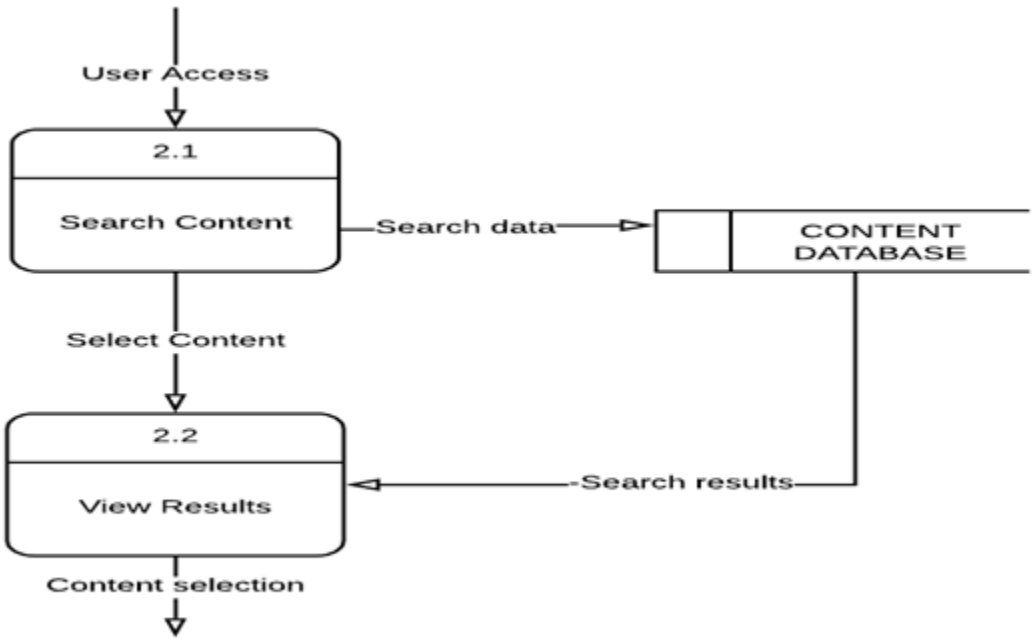
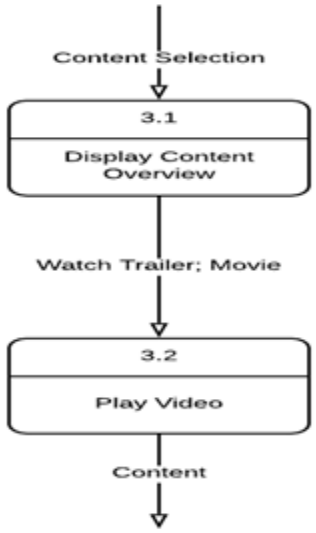


Diagram 1, Process 3 (LEVEL 2)



There is no need of exploding Process 4 as it is already in its Primitive form.

Diagram 1, Process 5 (LEVEL 2)

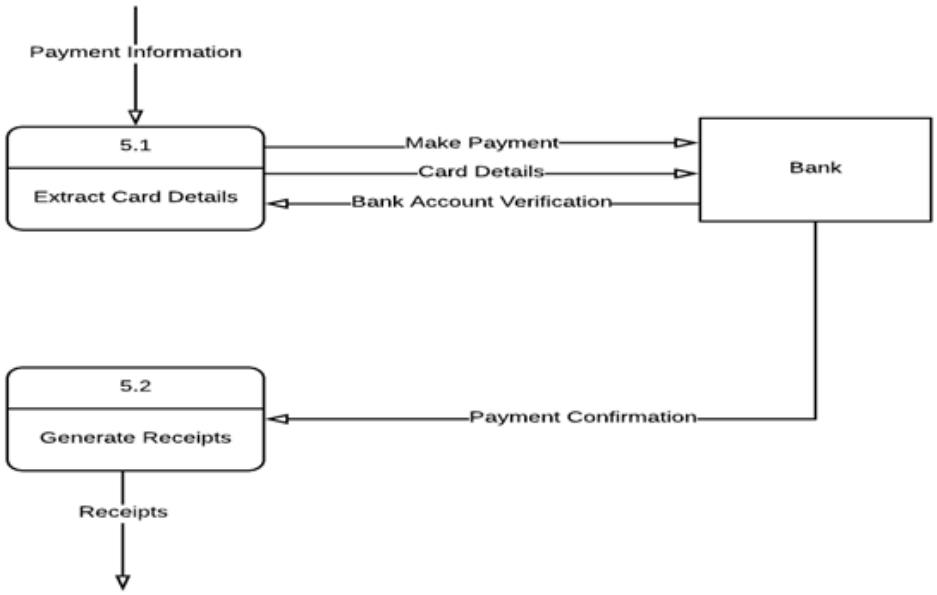
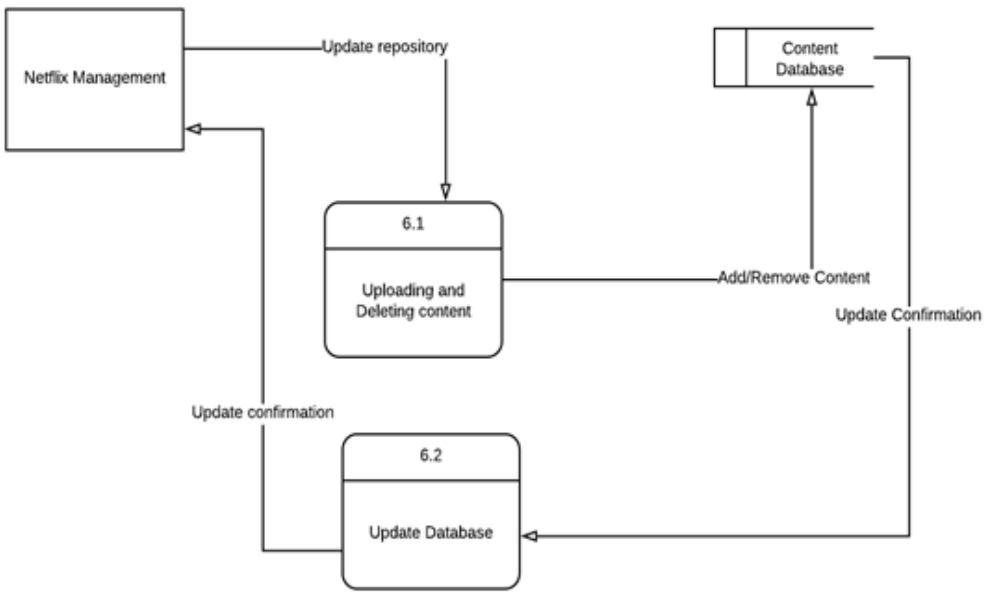
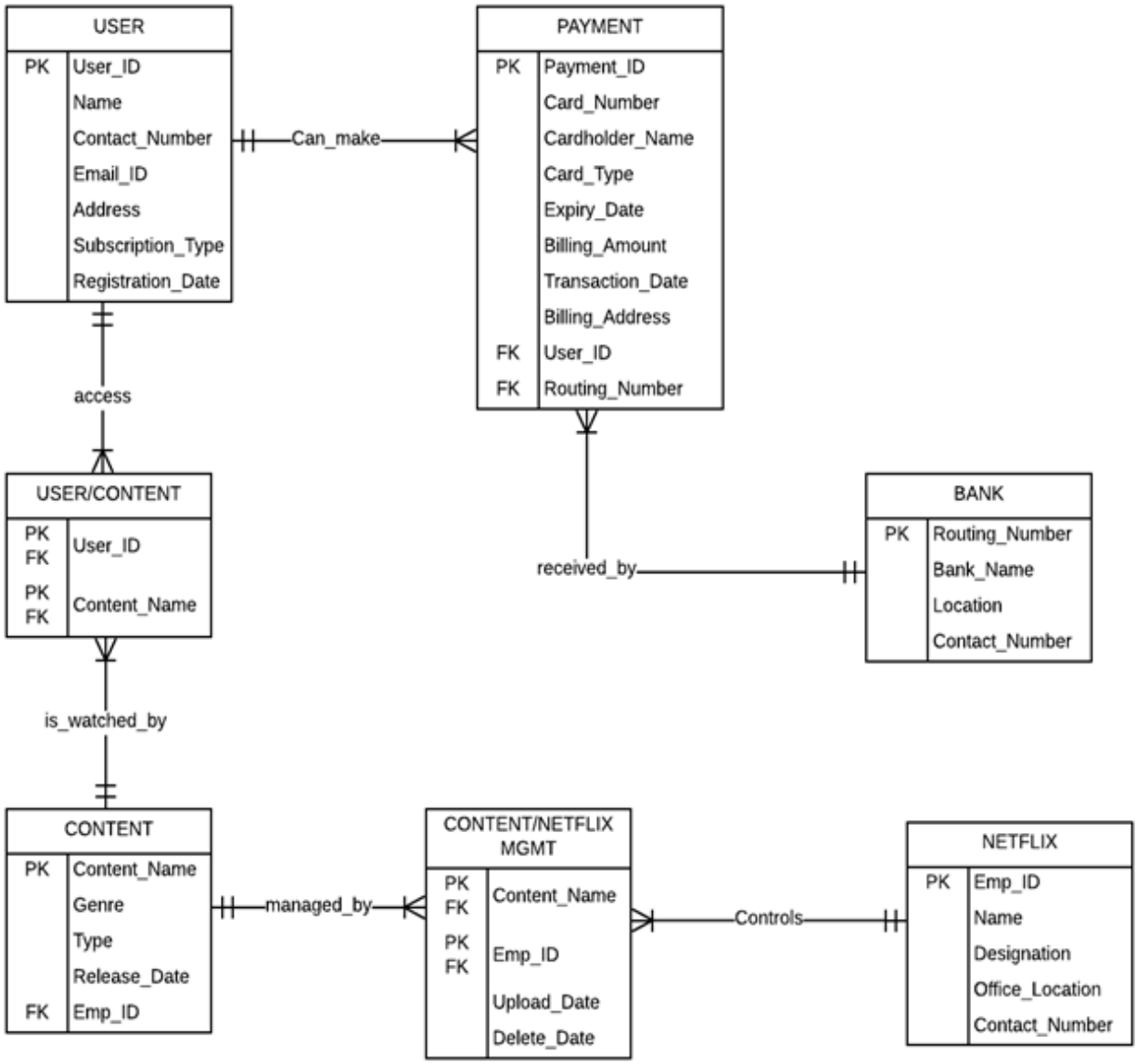


Diagram 1, Process 6 (LEVEL 2)



Entity Relationship Diagram for NETFLIX



Our ERD for NETFLIX includes five main entities which has the one to many relationship. We had only two instances where the cardinality was many to many (USER TO CONTENT and CONTENT TO NETFLIX) therefore we created associate entities named USER/CONTENT and CONTENT/NETFLIX MGMT which contains primary key of the associated entities as foreign key.

LEVEL 2 DIAGRAM FOR AMAZON PRIME VIDEO

Diagram 1, Process 1 (LEVEL 2)

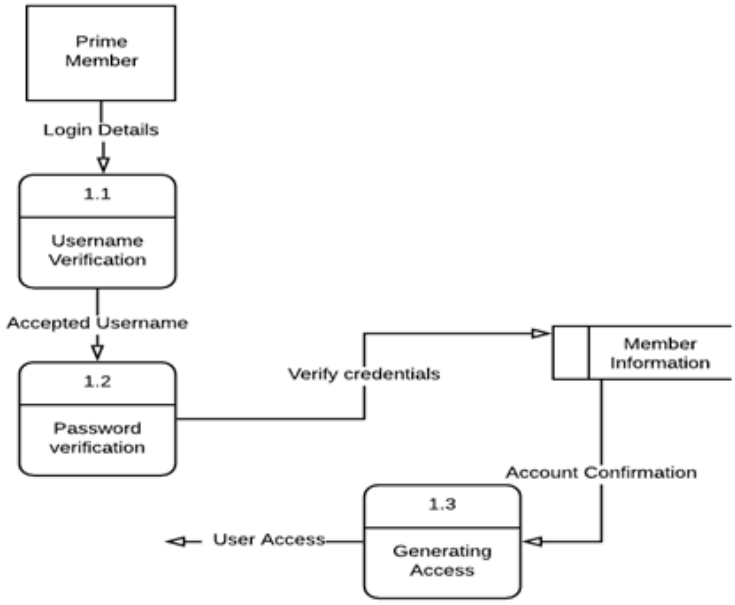


Diagram 1, Process 2 (LEVEL 2)

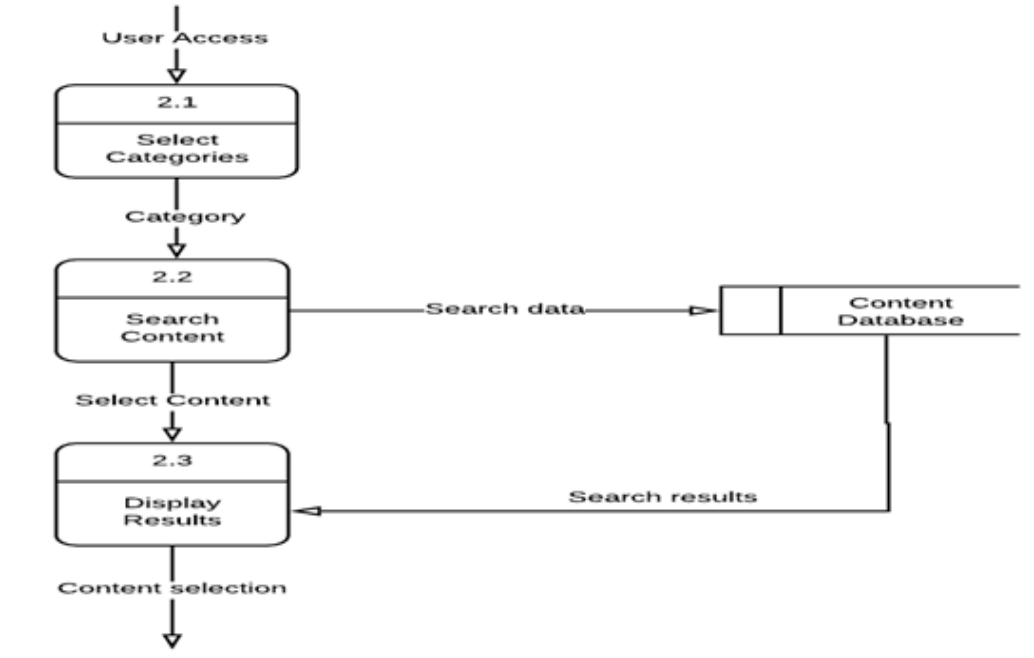
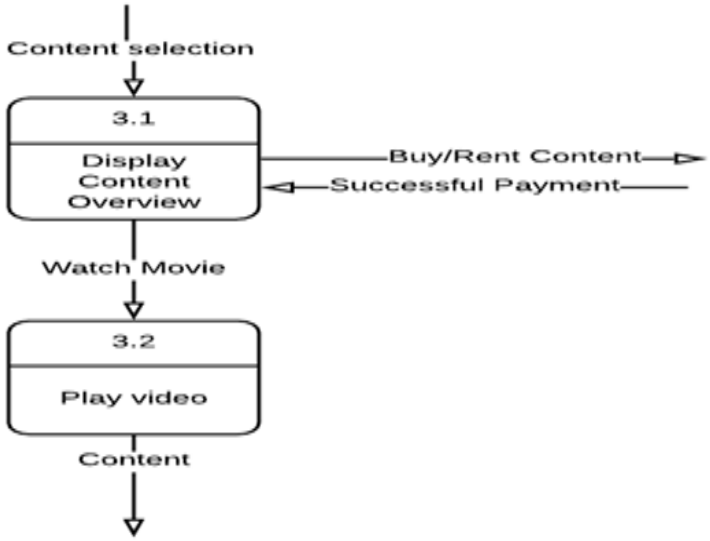


Diagram 1, Process 3 (LEVEL 2)



There is no need of exploding Process 4 and Process 5 as they are already in their Primitive form.

Diagram 1, Process 6 (LEVEL 2)

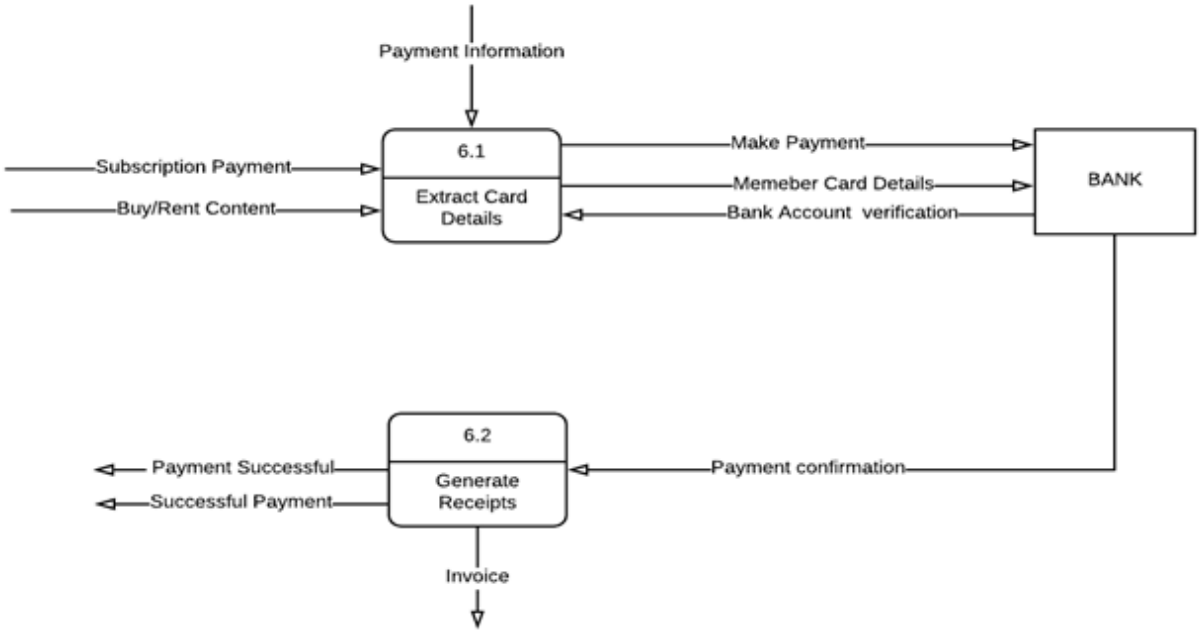
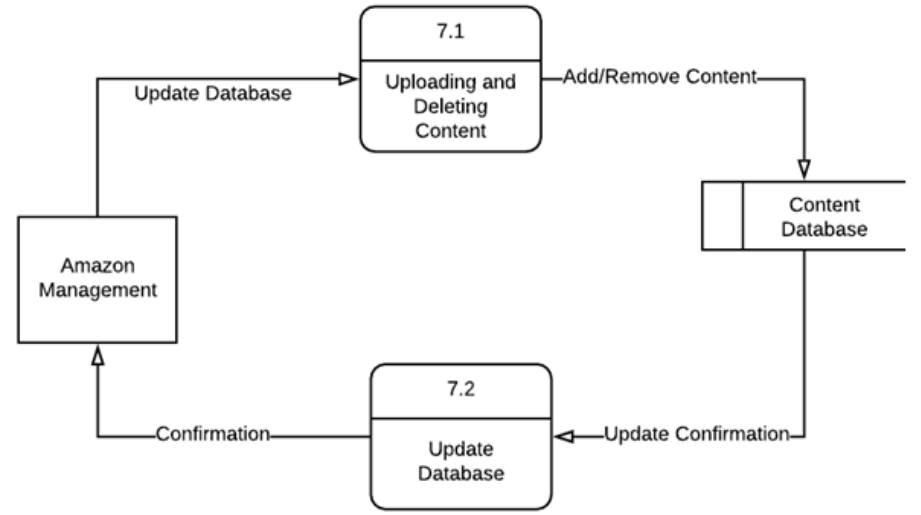
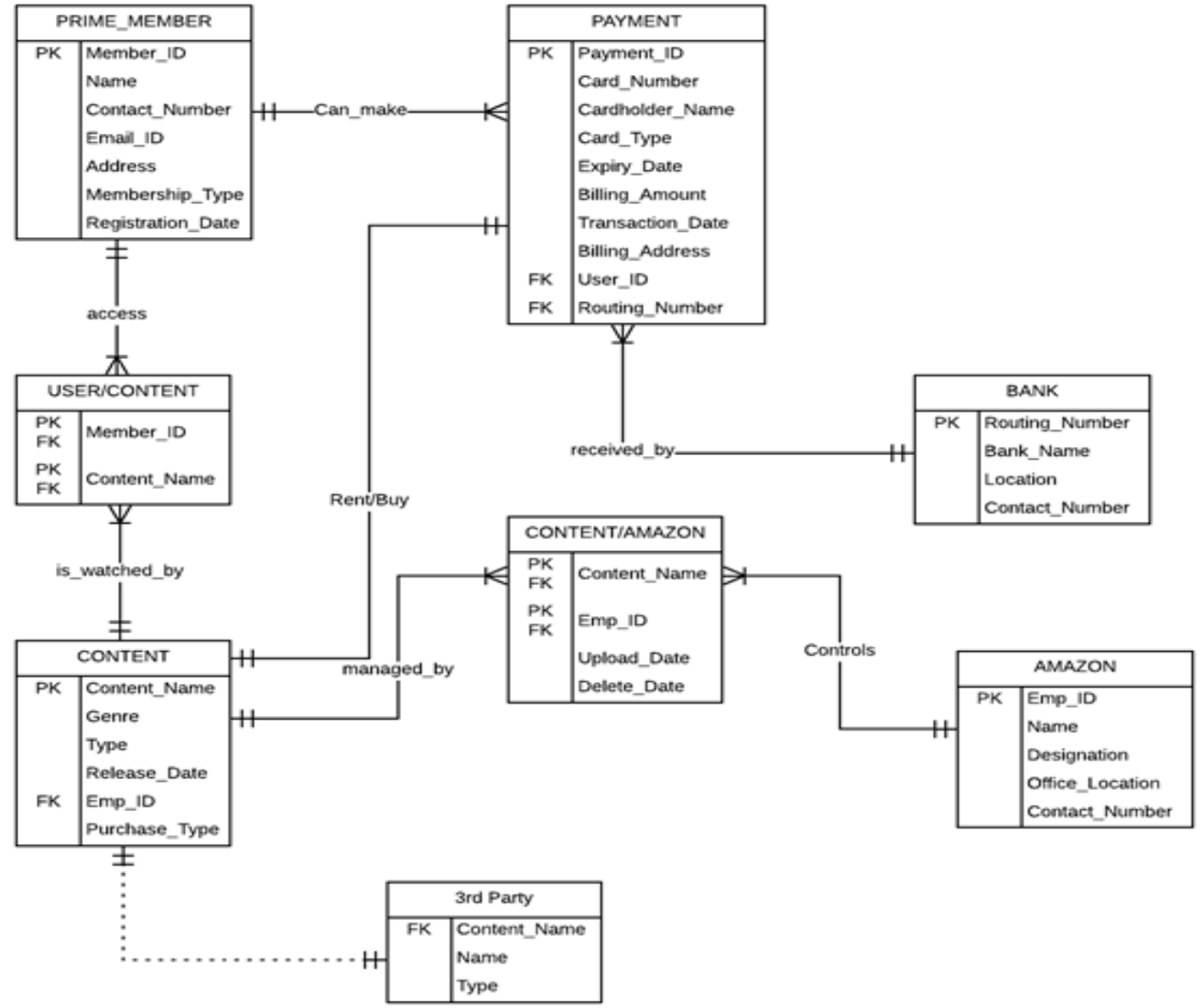


Diagram 1, Process 7 (LEVEL 2)



ENTITY-RELATIONSHIP DIAGRAM FOR AMAZON PRIME VIDEO:



Our ERD for AMAZON PRIME VIDEO also includes five main entities which has the one to many relationship. We had only two instances where the cardinality was many to many (USER TO CONTENT and CONTENT TO AMAZON) therefore we created associative entities named USER/CONTENT and CONTENT/NETFLIX MGMT which contains primary key of the associated entities as foreign key. We can also see a one to one relationship with a weak entity “3rd Party” which is represented with a dotted line, it’s because the entity is completely dependent on the existence of that particular CONTENT.

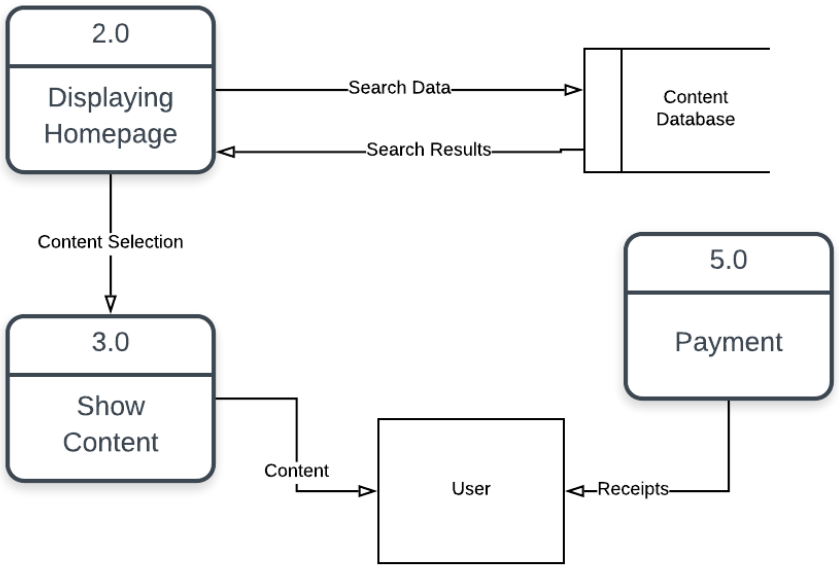
Difference between Netflix and Prime video

The major difference between the two systems is that all the content on Netflix system is available for free whereas the Amazon Prime video includes features which involves users to subscribe to a 3rd party streaming company for viewing certain content. The Amazon Prime Video system also requires the user

to rent or buy certain content online. These features gives Netflix system the upper hand over Amazon Prime Video where in netflix there is no 3rd party involvement and all the content is available for free.

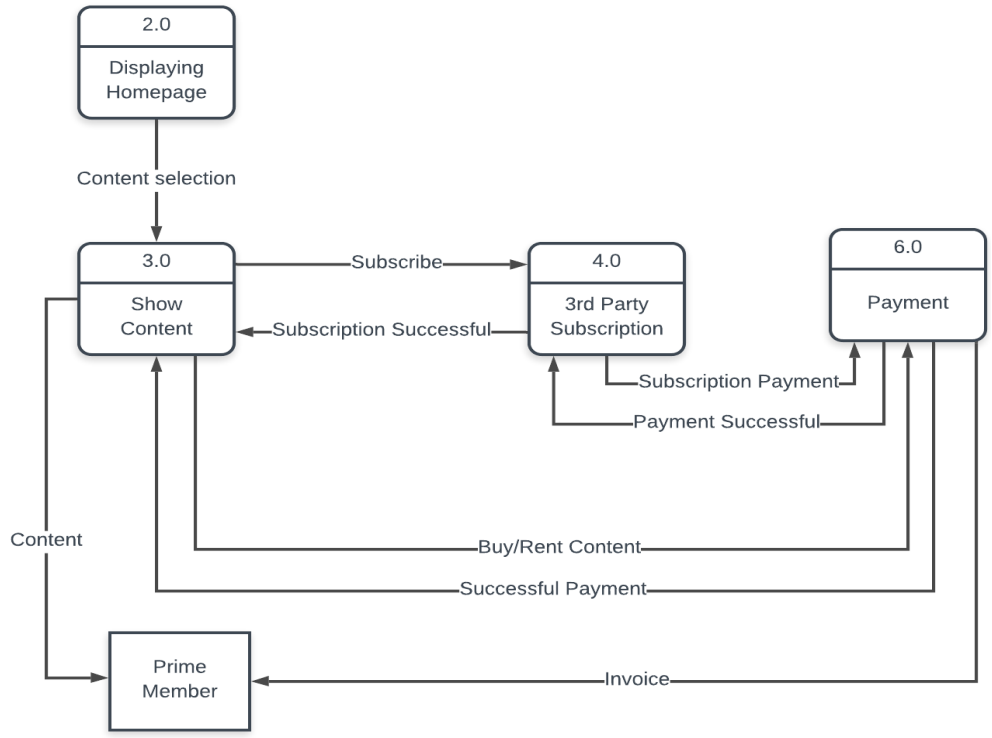
Refer to the below Data Flow diagram for the diagrammatic comparison:

NETFLIX (Cropped from the Netflix system Diagram 0)



As we can see in the above diagram, displaying homepage process searches data from the content database data store and provides the search result and shows the resulting content in the process show content. The show content process shows the resulting searched content to the user external entity. This shows that once the subscribed user has access to the netflix information system, All the content in it can be used for free. There is no data flow or relation between the show content and the payment process. Payment process is only used for paying the user subscription fee which you can see in the diagram 0 of Netflix information system.

AMAZON PRIME VIDEO (Cropped from the Amazon Prime Video system Diagram 0)



In the Amazon Prime Video information system, The searched content is shown in the show content process. The show content process has a relation (input and output data flow from and to - 3rd party subscription process) with the 3rd party subscription process. This means if the searched content is not available for free on the Amazon Prime Video system, User is required to pay an additional fee and subscribe to the 3rd party entity. Hence, there is a data flow which connects 3rd party subscription process to the payment process which shows that the user can make the payment for the 3rd party subscription to gain access to the content.

There is another difference in the Amazon Prime Video system where in some of the content available on the Amazon Prime Video need to bought or rented. This explains the data flow which is connected to the payment process from the show content process. When the searched content is shown by the show content process, it also shows whether the content is available for free or it should be bought/rented or user needs to subscribe to the 3rd party entity. If the content needs to be bought or rented, the user can do the required payment and gain access to the content.

Additional Differences are:

Multiple profile

Netflix:
Users can create multiple profiles under a subscription and maintain their search history without problems of movie mixup with other user's content.
Amazon Prime Video:
Users have access to a single profile and this makes for a mixup between movies .

Maximum Screen times
Netflix:
Netflix allows users a maximum of 4 screens at same time. Which means four different users can have access and view different content simultaneously. The number of screening options depend on the subscription plan of the user.
Amazon Prime Video:
Allows users a maximum of 3 screens at the same time. Which means that only 3 users can have access to same profile and view different contents at the same time.

Download availability
Netflix:
This has the download option available to users. Users have the option which enables them download contents from Netflix for a given period of time.
Amazon Prime Video:
Prime video does not offer users the opportunity to download content. Hence, users must be connected to the internet to both access and stream contents.

Content Catalog and 3rd party Subscriptions
Netflix:
All contents on netflix are free , including shows exclusive to netflix. This means that no content on netflix can be purchased or rented as such. And also, third party channels are not integrated with netflix.
Amazon Prime Video:
Prime offers limited content to users. Hence, users are required to purchase, rent or subscribe to third party channels to have access to the full content catalog.

Membership Benefits
Netflix:
This comes with only the movie viewing benefits and no additional benefits.
Amazon Prime Video:
Prime members are entitled to various benefits on the platform asides movies and channels. As a prime member, you are are entitled to free shipping on goods purchased, prime video, books and other services on Amazon prime.

Suggested Improvements:

Netflix:
Missing offline feature for website: Based on the research we did for the Netflix information system and also after using Netflix, there was one major drawback we came across i.e. there is no offline option. There is offline option available for the mobile application for the Netflix system which allows user to temporarily download the content in his profile which can be viewed anytime without the internet

connection within 7 days. This is one of the advantages of netflix system over Amazon Prime video. But the same option is not available for the web application. The same feature could be added on the web application to make it easier for the user.

Amazon Prime Video:

Inclusion of 3rd party subscription with the Prime subscription to reduce the complexity of the system: This is one of the major difference between Netflix and Amazon. Some of the movies/ tv series and documentaries requires the user to subscribe to the external streaming companies like HBO, Showtime etc. Now, the problem here is when the user chooses such content for viewing, he is directed to another page where he has to register for the required subscription and after the subscription is done the user is redirected to another page where the payment for the additional subscription is completed. This increases the number of processes in the system making it more complicated. It can be improved if the user is given the choice of additional subscriptions in the beginning of the use of Amazon Prime Video just so that there is no need for the multiple subscription process. The back and forth flow of data within the system can be done at once.

Segregation of different profiles under one subscription will ease the usefulness of the system for every user(allowing user to create personal profiles): One of the reason why Netflix has an edge over Amazon Prime video is the user profile segregation. There can be multiple people using the system under one subscription, therefore if one process is added where the user can select his profile just so the search history, watch history, to-watch content etc remains personalized as per the person's favourites. It will avoid the mixing up of content with all the users.

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