

[illegible]

INTRO AND **PROBLEM STATEMENTS**

321 Movies was once a video rental and trading store established in 1986. For the past few years it was experiencing financial difficulties due to the change in the industrial landscape. A lot of the entertainment related services has become more digitalized, for which users have stopped buying and renting from physical stores. After the rise of online streaming platforms, the company started experiencing a significant decline in revenue. To adapt to the expanding market and ensure its survival, 321 Movies has made a strategic decision to transition from physical locations to an online streaming service.

The company is facing some challenge to successfully establish the operation of this online movie streaming website, 321 Movies. The aim is to provide a user-friendly platform to stream their best-loved movies. However, the complication in hand is to develop an efficient and robust database design for the streaming website that is capable of managing a large collection of movies and delivering a coherent streaming experience to the users. This involves addressing various aspects, such as user authentication, content management from admin, search functionality, streaming infrastructure, and scalability, to ensure this platforms viability and competitiveness is highly fierce in the streaming industry.

The objective of 321 Movies is to design and implement a comprehensive database and architecture for the streaming website. By successfully transitioning from physical locations to a streaming service, 321 Movies aims to secure an efficient system that will regain its financial stability and establish a strong online appearance. The primary objective is to create a user-friendly and reliable streaming service that meets the expectations of the target audience. The stakeholders involved the management team and shareholders of 321 Movies, are seeking to revitalize the business and regain financial stability of this company in the digital era and continuous growth.

PRELIMINARY ANALYSIS

Market Analysis:

We have to identify the target audience for the online movie streaming platform, we also have to identify attributes under like age groups, movie preferences.

Analyse the competition existing in the market and the services they offer.

Point out the demand for the specific genres, popular movies, and exclusive content.

Technical Analysis:

evaluate the necessary resources needed, like server capacity or bandwidth requirements, for hosting and online movie platform.

evaluate the technologies and protocols needed to ensure the website runs smoothly.

Evaluate the feasibility

Content Management:

Work on all legal rights like acquiring licensing for streaming movies.

Categorize and organize the movie collection.

User Experience:

Work on making the user interface and design elements for user-friendly interface.

Work on the preferences and options for viewing history.

Work on implementing some features such as watchlists, ratings and ect.

Monetization Strategies:

Work on the different payment plans, subscription plans etc.

Evaluate pricing strategies based on market research and analysis of competitiveness.

Plan ways to make additional revenue, for example advertisements

Security and Privacy:

Ensure to protect user data, authentication, and data encryption.

Work on prevention of unauthorized access to copyrighted content.

Ensure compliance with relevant data protection regulations

REQUIRMENTS DOCUMENT

1. Overview, Purpose and Stakeholder

- A streaming website called 321 Movies and its main purpose is to provide streaming of movies for people to watch their favourite movies. The stakeholder at this point would be 321 Movies

2. Objectives

- The aim is help

3. Functional Requirements

- User must be able to sign up/log in on the website.
- A user must be able to search for their favourite movie and add to their watchlist if they want to.
- A User will be able to add their payment details (credit card) should they want to subscribe.
- An admin is able to sign in and edit movies. This inlcudes adding, removing or updating description about a specific movie
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4. Non-Functional Requirements

- The user's password is protected with an encryption that allows only the user to know their password. An admin has no access to the password.
- If a user has watched a movie, it will go to their watch history that way they can see what they have watched enhancing the performance
- Watching a movie from a specfic category will show recommended movies from that category.

5. Data Model

- ERD diagrams we have
- extra modeling techniques

6. User Interface Design

- Add screenshots

7. Assumptions and Contraints

- List of constraints generated

BUSINESS RULES

User

- Each user can have one or many invoices
- Each user can enter one and only one specific payment details
- Each user must have one subscription level (this can be updated)
- Each user can only have can have zero or many watchlists

Movies

- A Movie must be directed by a single director
- A Movie must fall under one category
- A Movie may be included in one subscription level(if you have a higher level then u can view movies from a lower level)

-

Director

- A director can direct one or many Movies

Watchlist

- A watchlist can have zero or many movies.
- A watchlist can have zero or many users

Category

- A category may have one or many movies in it

NORMALIZATION PROCESS

Users - First											
UserID	Password	Email	Fname	Lname	User_DOB	DatelastrPaid	Subscription_name	Subscription Price	Card number	ExpDate	CVV
de447ba6-6e96-4a72-a594-cbcc19fed0	dGhm+5MUPdM4NQ8y6nsiA==	Battylouis5@gmail.co	Louis	batty	2002/09/12	2023/05/29	Free	0.00	7230089	25-Sep	332

Normalization											
Payment_details					Subscription_Type						
Paymnet_ID	Card Number	ExpDate	CBB	UsersId	SubID	Name	Price				
1	7230089	23-Sep	332	de447ba6-6e96-4a72-a594-cbcc19fed0dc	1	Free	0.00				

Users							
UserID	Password	Email	Fname	Lname	User_DOB	Date_Last_paid	
de447ba6-6e96-4a72-a594-cbcc19fed0	dGhm+5MUPdM4NQ8y6nsiA==	Battylouis5@gmail.co	Louis	batty	2002/09/12	2023/05/29	

Movies-First											
MovieID	Title	Runtime	Year	Link	Rating	Discription	Director firstname	Director last name	Sublevel	Category	Views
1	Jurassic Park	02-07-00	1993	https://www.youtube.com/embed/ic0UehYemQA	8.1	...	Steven	Spielberg	1	Sic-fi	100
10	Forrest Gump	02-22-00	1994	https://www.youtube.com/embed/blvgoHl8otIe	8.3	...	Steven	Spielberg	1	Comedy	23
Normalization											
Category		Directors									
Cat_Id	Category_Name	DirectorID	Fname	Lname							
1	Sic-fi	1	Steven	Spielberg							
6	Comedy										
Movies											
MovieID	Movie_Title	Runtime	Year	TrailerLink	Rateings	AgeRateing	ShortDiscription	CatagoryID	DirectorID	View	ImageName
1	Jurassic Park	02-07-00	1993	https://www.youtube.com/embed/ic0UehYemQA	8.1	13	...	1	1	100	jpg
10	Forrest Gump	02-22-00	1994	https://www.youtube.com/embed/blvgoHl8otIe	8.3	13	...	6	1	23	jpg

FINAL CONSTRAINTS

Here are the realistic constraints and business rules for the provided tables, including primary and foreign keys:

Table: Payment_details

- Constraints:
 - Primary Key: PaymentID
 - Foreign Key: UserID references Users(UserID)
 - Business Rule: Each PaymentID must be unique and correspond to a valid UserID.

Table: Categories

- Constraints:
 - Primary Key: CategoryID
 - Business Rule: Each CategoryID must be unique.

Table: Subscription_level

- Constraints:
 - Primary Key: Sub_ID
 - Business Rule: Each Sub_ID must be unique.

Table: Directors

- Constraints:
 - Primary Key: DirectorID
 - Business Rule: Each DirectorID must be unique.

Table: Movies

- Constraints:
 - Primary Key: MovieID
 - Foreign Key: CategoryID references Categories(CategoryID)
 - Foreign Key: DirectorID references Directors(DirectorID)
 - Foreign Key: SubID references Subscription_level(Sub_ID)
 - Business Rule: Each MovieID must be unique. The CategoryID, DirectorID, and SubID must correspond to valid records in their respective tables.

FINAL CONSTRAINTS CONTINUATION

Table: Users

- Constraints:

- Primary Key: UserId
- Foreign Key: SubID references Subscription_level(Sub_ID)
- Business Rule: Each UserId must be unique. The SubID must correspond to a valid record in the Subscription_level table.

Table: Watchlist

- Constraints:

- Primary Key: ListtID
- Foreign Key: UserID references Users(UserId)
- Foreign Key: MovieID references Movies(MovieID)
- Business Rule: Each ListtID must be unique. The UserID and MovieID must correspond to valid records in their respective tables.

Table: Admin

- Constraints:

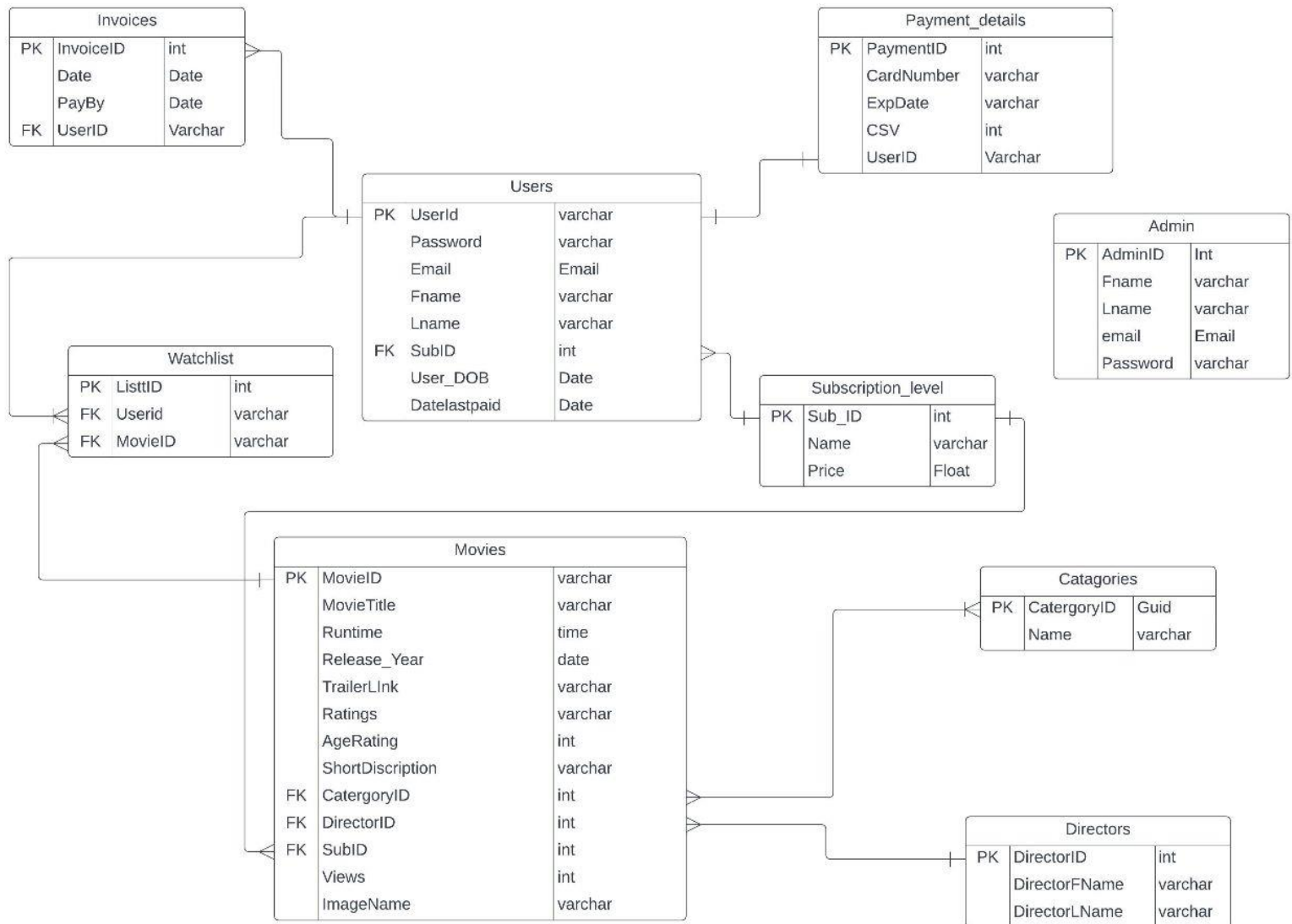
- Primary Key: AdminID
- Business Rule: Each AdminID must be unique.

Table: Invoices

- Constraints:

- Primary Key: InvoiceID
- Foreign Key: UserID references Users(UserId)
- Business Rule: Each InvoiceID must be unique and correspond to a valid UserID.

FINAL ERD



DATA SNAPSHOTS

Category table

Results Messages		
	CategoryID	Name
1	1	Action
2	2	Comedy
3	3	Drama
4	4	Thriller
5	5	Horror
6	6	Romance
7	7	Science Fiction
8	8	Documentary
9	9	Kids

Subscription table

Results Messages			
	Sub_ID	Name	Price
1	1	Basic	0
2	2	Standard	99
3	3	Premium	199

Movies table

Results Messages									
	MovieID	MovieTitle	Runtime	Release_Year	TrailerLink	Ratings	AgeRating	ShortDiscription	Categori
1	1	Jurassic Park	02:07:00.0000000	1993-01-01	https://www.youtube.com/embed/lc0UehYemQA	8.1	13	A pragmatic paleontologist visiting an almost complet...	1
2	10	Forrest Gump	02:22:00.0000000	1994-01-01	https://www.youtube.com/embed/bLvqoHBptjg	8.8	13	The presidencies of Kennedy and Johnson, the events...	6
3	11	Goodfellas	02:26:00.0000000	1990-01-01	https://www.youtube.com/embed/qo5jJpHt1Y	8.7	18	The story of Henry Hill and his life in the mob, covering...	3
4	12	Blade Runner	01:57:00.0000000	1982-01-01	https://www.youtube.com/embed/KPcZHzKJBnE	8.1	17	A blade runner must pursue and terminate four replica...	7
5	13	The Silence of the Lambs	01:58:00.0000000	1991-01-01	https://www.youtube.com/embed/W6Mm8Sbe__o	8.6	18	A young F.B.I. cadet must receive the help of an incarcerated...	4
6	15	The Matrix	02:16:00.0000000	1999-01-01	https://www.youtube.com/embed/yKQi3bBA1y8	8.7	18	A computer hacker learns from mysterious rebels about...	4
7	16	Fight Club	02:19:00.0000000	1999-01-01	https://www.youtube.com/embed/SUXWAEX2Jlg	8.8	18	An insomniac office worker and a devil-may-care soap...	3
8	17	The Shawshank Redemption	02:22:00.0000000	1994-01-01	https://www.youtube.com/embed/6hB3S9blaco	9.3	18	Two imprisoned men bond over a number of years, fin...	3
9	18	Inception	02:28:00.0000000	2010-01-01	https://www.youtube.com/embed/YoHD9XEInc0	8.8	13	A thief who steals corporate secrets through the use of...	4
10	19	The Dark Knight Rises	02:44:00.0000000	2012-01-01	https://www.youtube.com/embed/g8ewyE9TuYk	8.4	13	Eight years after the Joker's reign of anarchy, Batman, ...	1
11	2	The Dark Knight	02:32:00.0000000	2008-01-01	https://www.youtube.com/embed/EXeTWQWrcwY	9.0	13	When the menace known as the Joker wreaks havoc and...	1
12	20	The Avengers	02:23:00.0000000	2012-01-01	https://www.youtube.com/embed/eOrNdBpGMv8	8.0	13	Earth's mightiest heroes must come together and learn to...	5
13	21	Interstellar	02:49:00.0000000	2014-01-01	https://www.youtube.com/embed/zSwdZvXT7E	8.6	13	A team of explorers travel through a wormhole in spac...	7
14	22	The Lion King	01:28:00.0000000	1994-01-01	https://www.youtube.com/embed/4sj1MT05IAA	8.5	0	Lion prince Simba and his father are targeted by his b...	5
15	23	Gladiator	02:35:00.0000000	2000-01-01	https://www.youtube.com/embed/Q-b7B8tOAQU	8.5	18	A former Roman General sets out to exact vengeance on...	3
16	24	The Social Network	02:00:00.0000000	2010-01-01	https://www.youtube.com/embed/lB9SKmpLR4	7.7	13	As Harvard student Mark Zuckerberg creates the social...	2
17	25	Back to the Future	01:56:00.0000000	1985-01-01	https://www.youtube.com/embed/qvsgGtvCgs	8.5	0	Marty McFly, a 17-year-old high school student, is acci...	4
18	26	The Pursuit of Happyness	01:57:00.0000000	2006-01-01	https://www.youtube.com/embed/89Kq8SDyvfq	8.0	13	A struggling salesman takes custody of his son as he's...	6
19	27	The Prestige	02:10:00.0000000	2006-01-01	https://www.youtube.com/embed/o4gHCmTQDVI	8.5	13	After a tragic accident, two stage magicians engage in...	4
20	28	The Great Gatsby	02:23:00.0000000	2013-01-01	https://www.youtube.com/embed/rARN6agiW7o	7.2	13	A writer and wall street trader, Nick, finds himself draw...	2
21	29	The Incredibles	01:55:00.0000000	2004-01-01	https://www.youtube.com/embed/zBzbC9285I	8.0	0	A family of undercover superheroes, while trying to live...	5
22	3	Pulp Fiction	02:34:00.0000000	1994-01-01	https://www.youtube.com/embed/s7EdQ4FqbHY	8.9	17	The lives of two mob hitmen, a boxer, a gangster and ...	3
23	30	The Notebook	02:03:00.0000000	2004-01-01	https://www.youtube.com/embed/FC6biTjEYzw	7.8	13	A poor yet passionate young man falls in love with a ric...	2
24	31	Pulp Fiction	02:34:00.0000000	1994-01-01	https://www.youtube.com/embed/s7EdQ4FqbHY	8.9	18	The lives of two mob hitmen, a boxer, a gangster and ...	3
25	32	The Sixth Sense	01:47:00.0000000	1999-01-01	https://www.youtube.com/embed/VG9AGf66tXM	8.1	13	A boy who communicates with spirits seeks the help of...	8
26	33	Forrest Gump	02:22:00.0000000	1994-01-01	https://www.youtube.com/embed/bLvqoHBptjg	8.8	13	The presidencies of Kennedy and Johnson, the Vietnam...	3
27	34	Avatar	02:42:00.0000000	2009-01-01	https://www.youtube.com/embed/5PSNL1qE6VY	7.8	13	A paraplegic Marine dispatched to the moon Pandora on...	7
28	35	The Silence of the Lambs	01:58:00.0000000	1991-01-01	https://www.youtube.com/embed/lQKs169SI0I	8.6	18	A young F.B.I. cadet must confide in an incarcerated a...	3
29	36	The Departed	02:31:00.0000000	2006-01-01	https://www.youtube.com/embed/SGWwvjZ0eDc	8.5	18	An undercover cop and a mole in the police attempt to...	3
30	37	Fargo	01:38:00.0000000	1996-01-01	https://www.youtube.com/embed/h2tY82z3xXU	8.1	18	Jerry Lundegaard's inept crime falls apart due to his a...	3
31	38	Black Swan	01:48:00.0000000	2010-01-01	https://www.youtube.com/embed/5jal1X0B-bs	8.0	18	A committed dancer struggles to maintain her sanity af...	2

Directors table:

Results Messages				
	DirectorID	DirectorFName	DirectorLName	
1	1	Steven	Spielberg	
2	2	Christopher	Nolan	
3	3	Quentin	Tarantino	
4	4	Martin	Scorsese	
5	5	James	Cameron	
6	6	Ridley	Scott	
7	7	David	Fincher	
8	8	Peter	Jackson	
9	9	Christopher	Nolan	
10	10	Quentin	Tarantino	
11	11	Martin	Scorsese	
12	12	Steven	Spielberg	
13	13	Roger	Allers	
14	14	Ridley	Scott	
15	15	David	Fincher	
16	16	Robert	Zemeckis	
17	17	Gabriele	Muccino	
18	18	Christopher	Nolan	
19	19	Baz	Luhrmann	
20	20	Brad	Bird	
21	21	Nick	Cassavetes	
22	22	Quentin	Tarantino	
23	23	M. Night	Shyamalan	
24	24	James	Cameron	
25	25	Jonathan	Demme	
26	26	Martin	Scorsese	
27	27	Joel	Coen	
28	28	Ethan	Coen	
29	29	Darren	Aronofsky	

Admin table:

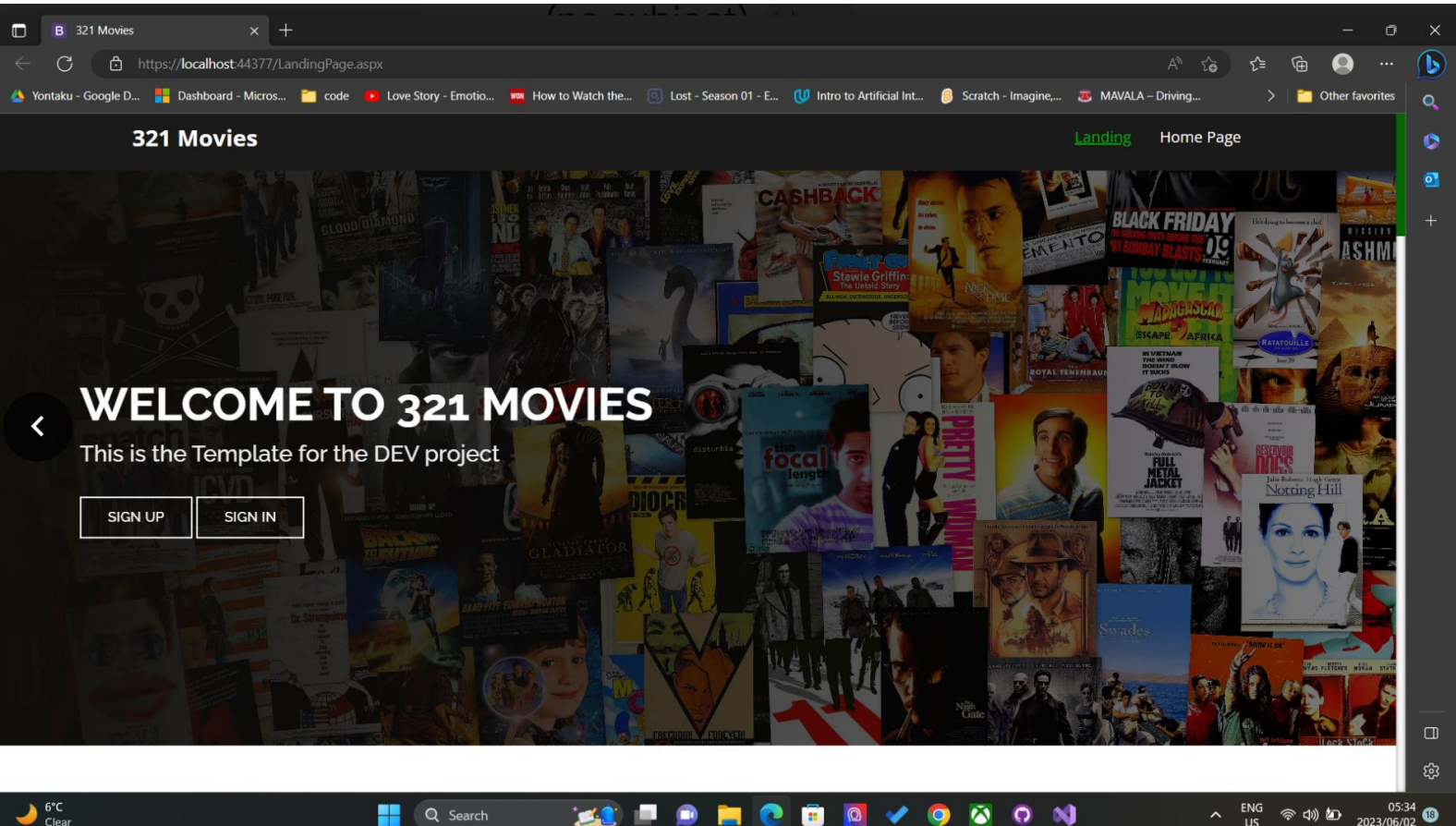
Results Messages					
	AdminID	Fname	Lname	email	Password
1	1	Louis	Batty	Battylouis64@gmail.com	Slatt321
2	2	Admin	Account	Admin@321movies.com	4E3E83CF-83DE-41FB-B269-FF68B14873EC

Watchlist table:

Results Messages			
	ListID	Userid	MovielD
1	1	9ad191e9-b3a4-4dd6-b182-fd6cd1b31a18	66
2	2	9ad191e9-b3a4-4dd6-b182-fd6cd1b31a18	19
3	3	9ad191e9-b3a4-4dd6-b182-fd6cd1b31a18	50

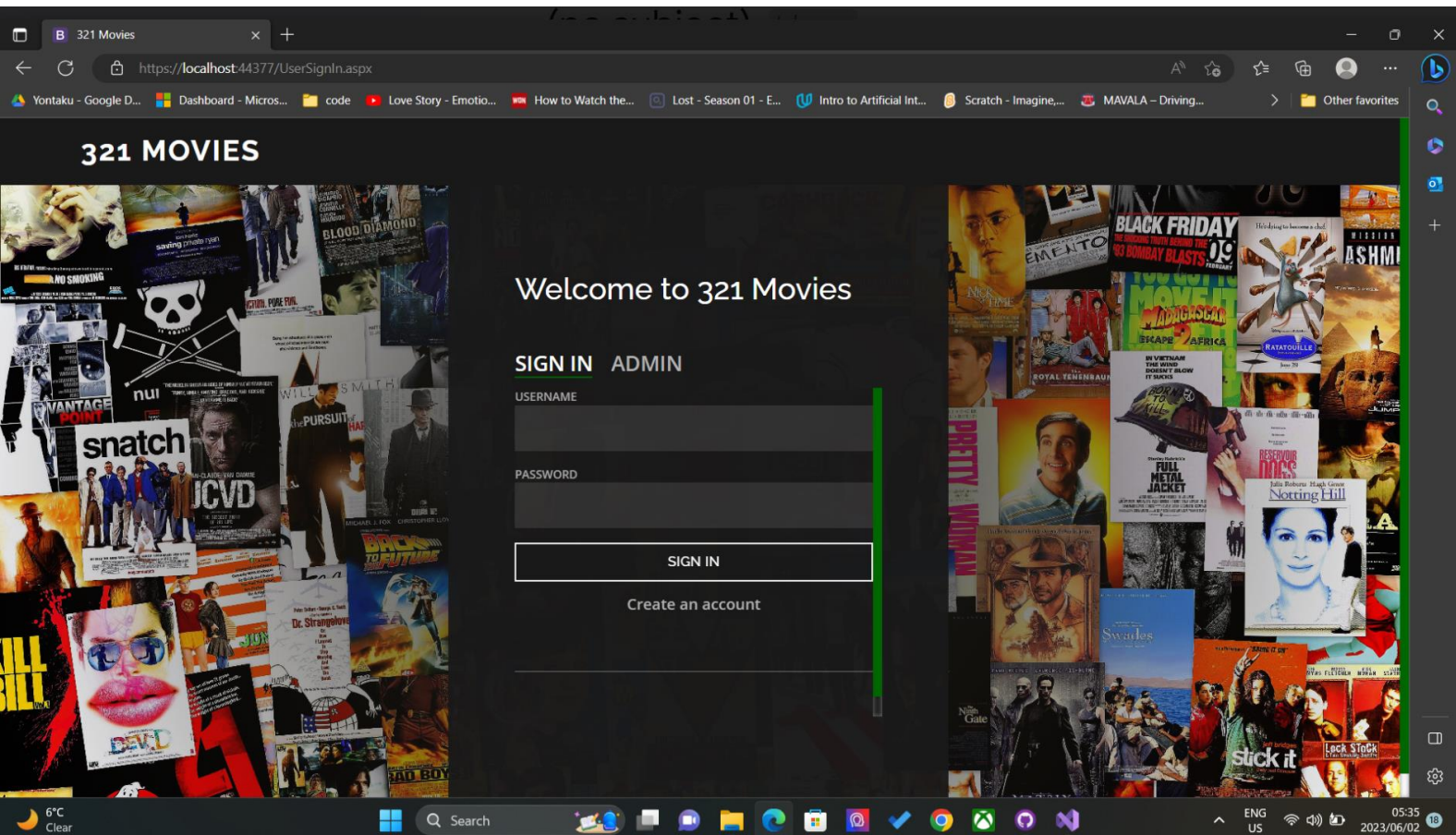
PAGE EXPLANATION

LANDING PAGE



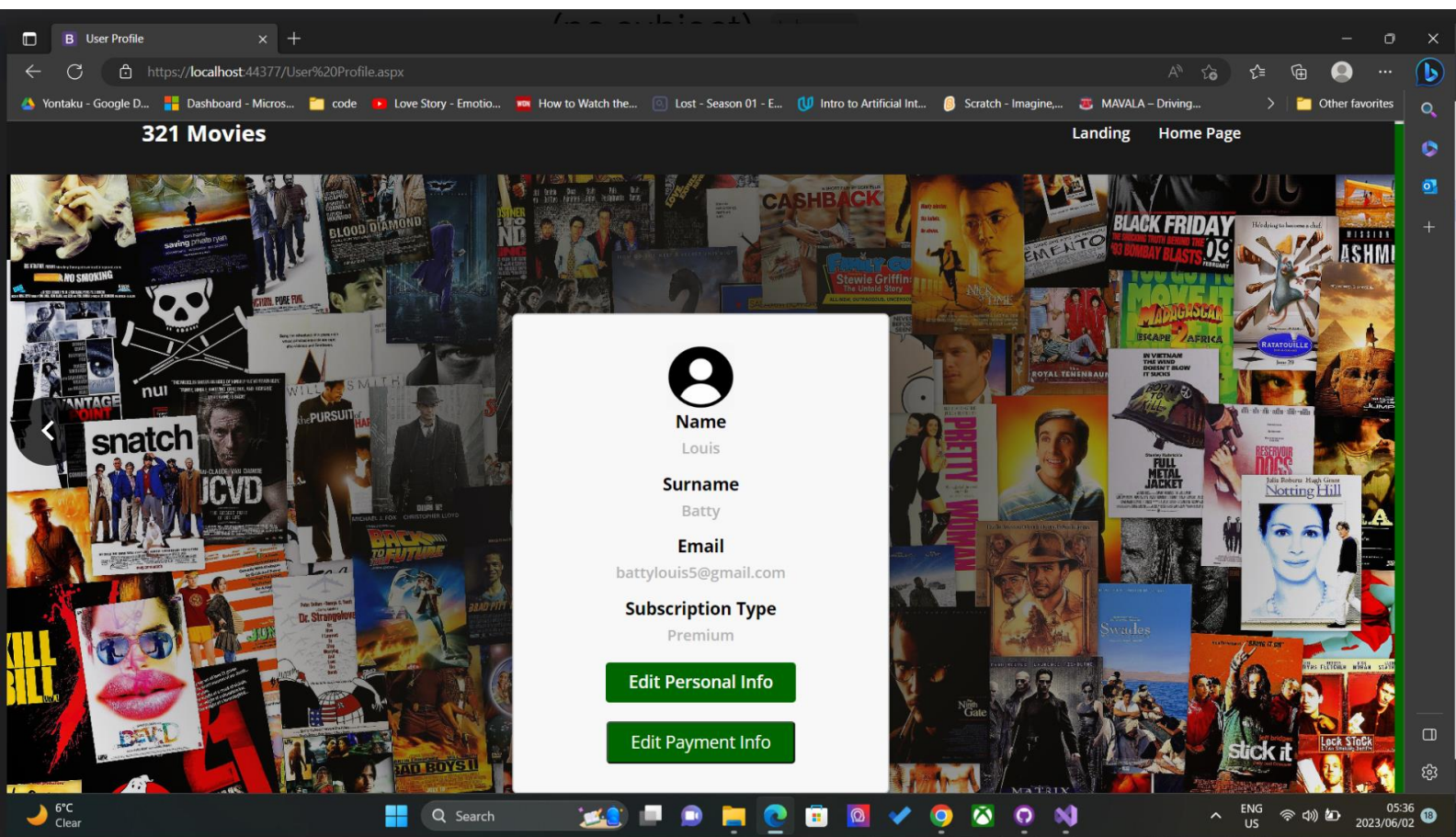
First thing you see when the site loads

SIGN-IN PAGE



Sign in as a user after you make an account to sign in to admin use details on the read me file

USER-PROFILE



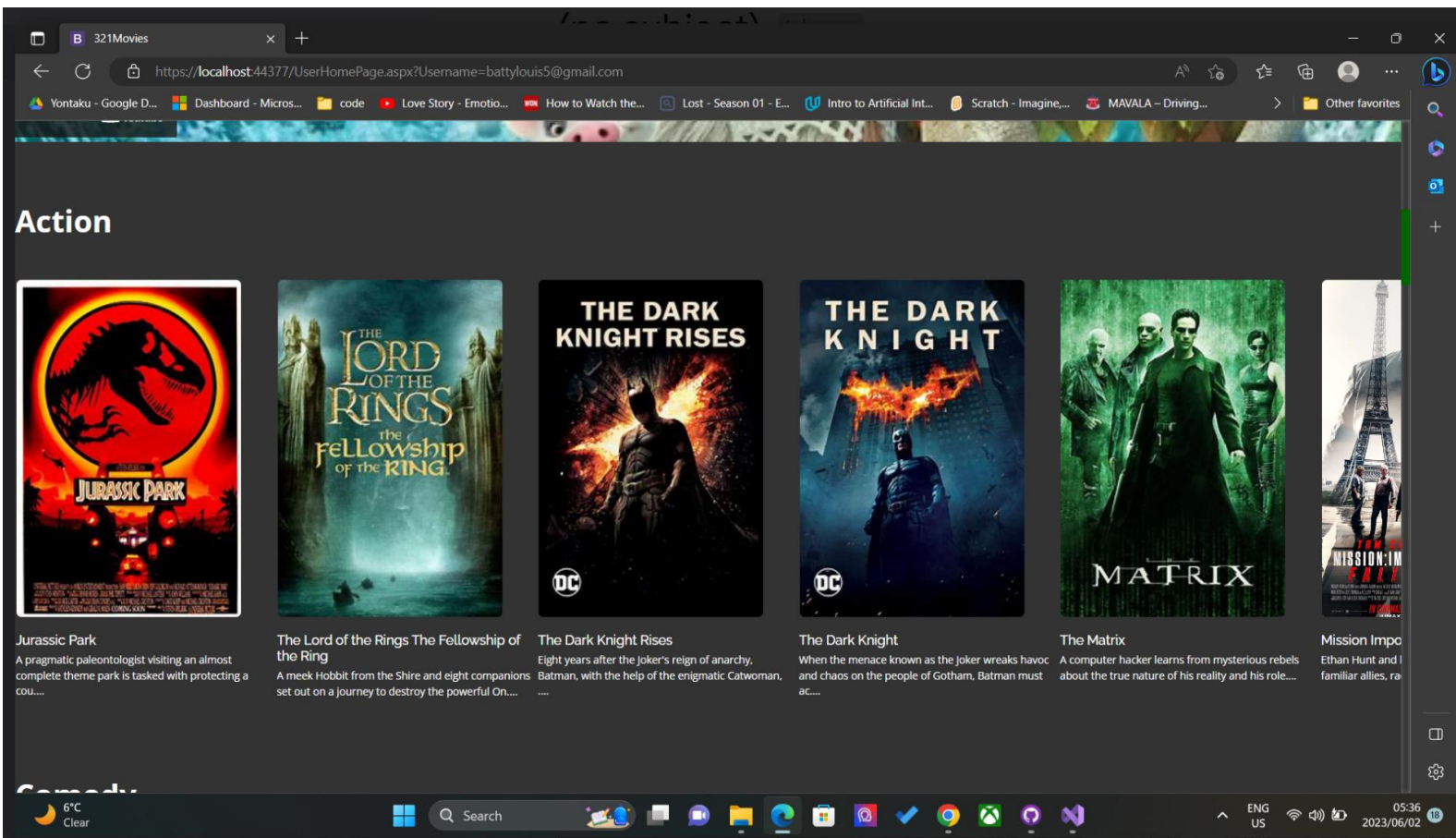
Allows users to view and edit there details

HOME PAGE



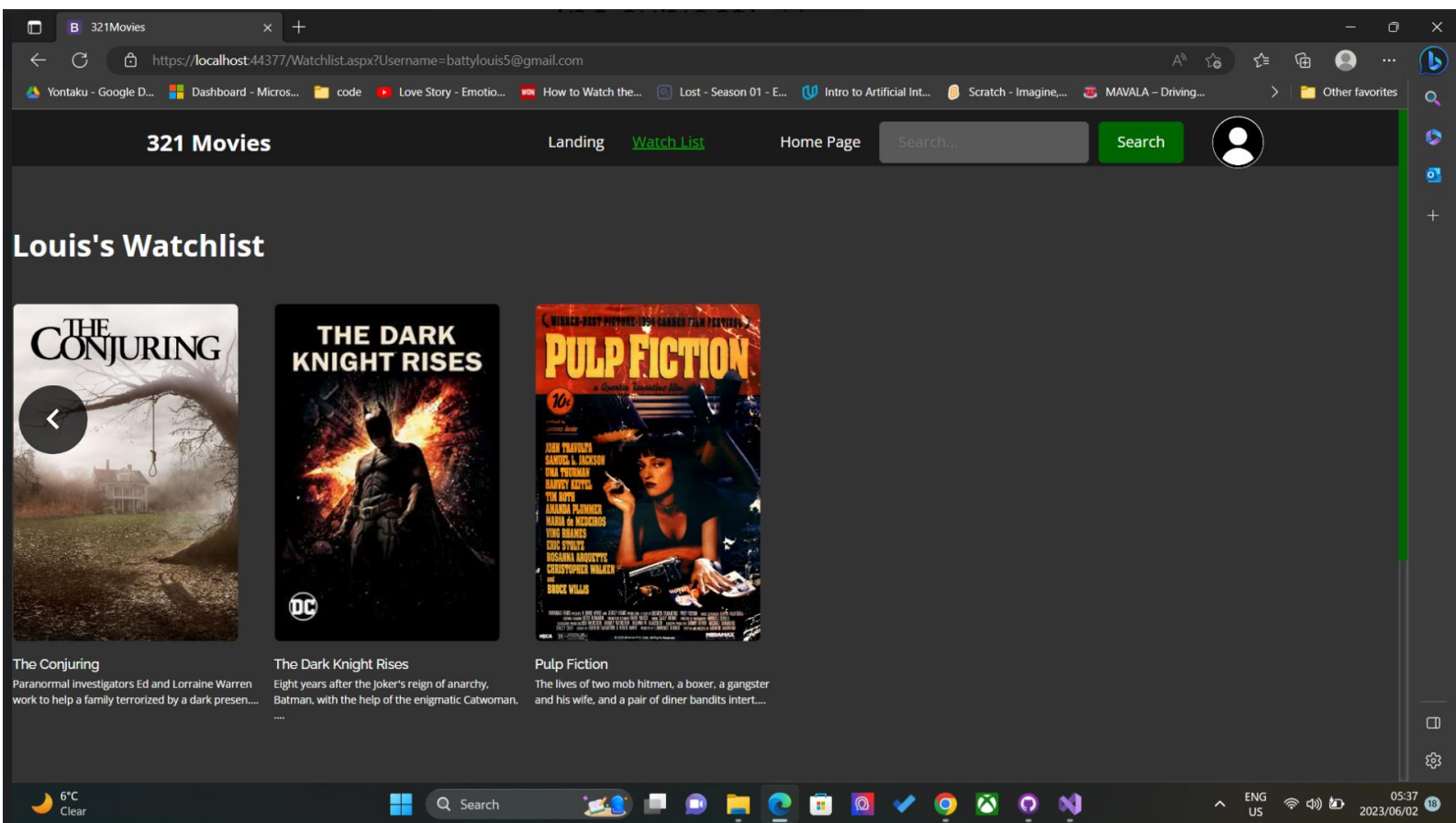
On the home page when users log in they can see a movie on there home page

CATEGORIES



On the home page users can view movies per category

WATCHLIST



Allows user to add movies to a watch list to view later

QUESTIONS YOU MIGHT WANT TO ASK

1) How many movies are available in each category?

```
SELECT c.Name AS Category, COUNT(*)
AS MovieCount
FROM Catagories c
JOIN Movies m ON c.CatergoryID =
m.CatergoryID
GROUP BY c.Name;
```

2) What are the top-rated movies?

```
SELECT MovieTitle, Ratings
FROM Movies
ORDER BY Ratings DESC;
```

3) Which users have a specific subscription level?

```
SELECT u.UserId, u.Fname, u.Lname,
s.Name AS SubscriptionLevel
FROM Users u
JOIN Subscription_level s ON u.SubID =
s.Sub_ID
WHERE s.Name =
'YourSubscriptionLevel';
```

4) How many movies has each director directed?

```
SELECT d.DirectorFName, COUNT(*) AS
MovieCount
FROM Directors d
JOIN Movies m ON d.DirectorID =
m.DirectorID
GROUP BY d.DirectorFName,
dddd.DirectorLName.DirectorLName;
```

5) What is the total payment made by a specific user?

```
SELECT u.UserId, u.Fname, u.Lname,
SUM(pd.Price) AS TotalPayment
FROM Users u
JOIN Payment_details pd ON u.UserId =
pd.UserID
WHERE u.UserId = 'YourUserID'
GROUP BY u.UserId, u.Fname, u.Lname;
```

6) Which movies are in a specific user's watchlist?

```
SELECT w.ListtID, w.Userid, m.MovieTitle
FROM Watchlist w
JOIN Movies m ON w.MovieID = m.MovieID
WHERE w.Userid = 'YourUserID';
```


SQL WE USED

There is a file in the main project folder