**Problem Statement**

**Product Dissection for top leading Platforms**

Welcome to this case study on dissecting and designing products for top leading platforms. In this case study, you will delve into the intriguing world of schema design for a prominent platform of your choice. Your task is to choose a top leading platform, research its features, and meticulously craft a schema design that encapsulates the essence of its functionality. By focusing on key entities, attributes, and relationships, you will gain invaluable insights into how data architecture drives the platform's effectiveness.

**Step 1: Choose a Leading Platform:**

Select a leading platform of your choice, which could span various domains such as social media, e-commerce, finance, or any other industry. This choice will form the foundation of your exploration into its schema design.

**Step 2: Research:**

Thoroughly research the platform you have selected. Investigate its core features, functionalities, and user interactions. Identify the top features that define its user experience and contribute significantly to its popularity.

**Step 3: Product Dissection and Real World Problems solved by the platform:**

In this step, you will meticulously analyse the platform's standout features and how they provide innovative solutions to real-world challenges. By identifying key functionalities that resonate with users, you'll unravel how the platform effectively addresses problems and enhances user experiences. This dissection will serve as the foundation for understanding how the schema design aligns with the platform's core objectives.

**Step 4: Case Study on the real world problems and approach to solving them:**

In this pivotal step, you will expand on the real-world challenges uncovered in Step 3 through a comprehensive case study. Delve into specific instances where users encountered difficulties and showcase how the platform's unique features provided effective solutions. By dissecting the approach taken by the platform to overcome these challenges, you'll gain a deeper appreciation for the platform's user-centric design philosophy and how it shapes the schema design.

**Step 5: Schema Design Based on Top Features:**

Based on the features you have identified, craft a schema design that reflects the platform's data structure. Focus on the key entities, attributes, and relationships that underpin the chosen features. Your schema should capture the essence of how the platform organises and utilises its data.

**Step 6: Rationale Behind the Design:**

While creating the schema design, consider the rationale behind the platform's choices. Reflect on why certain entities and relationships were chosen and how they align with the platform's goals. This will help you understand the strategic decisions driving the schema's architecture.

**Step 7: Create an ER Diagram:**

Utilise tools like the Miro platform or similar applications to create an illustrative Entity-Relationship (ER) diagram. This diagram should vividly depict the entities, attributes, and relationships present within your schema design. The ER diagram will serve as a visual representation of your insights.

**Step 8: Presentation of Findings:**

Present your findings in a clear and concise manner. Showcase your understanding of how the schema design impacts the platform's functionality and user experience. Explain how your chosen features are integrated into the schema and how the schema's structure supports the platform's objectives.



**Product Dissection for Netflix:**

**Company Overview:**

**About Netflix:**

Netflix, Inc. is a leading global streaming service that provides on-demand entertainment, including TV shows, movies, documentaries, and original content. It operates on a subscription-based model, allowing users to stream content across various devices.

**Company Details:**

* **Founded:** August 29, 1997
* **Founders:** Reed Hastings & Marc Randolph
* **Headquarters:** Los Gatos, California, USA
* **CEO:** Ted Sarandos & Greg Peters (Co-CEOs)
* **Industry:** Entertainment, Media, Streaming
* **Stock Symbol:** NFLX (NASDAQ)

**Product Dissection and Real-World Problems Solved by Netflix:**

**Revolutionizing Entertainment Consumption:**

Before Netflix, people relied on **cable TV and DVD rentals**. The **on-demand streaming model** eliminated the need for scheduled programming, giving users the freedom to watch anytime, anywhere.

**Reducing Piracy:**

By providing **affordable and legal access** to content, Netflix helped reduce illegal streaming and piracy. Its convenience and diverse catalog encourage users to pay for quality content.

**Global Content Accessibility:**

Netflix **bridged language and cultural barriers** by offering **subtitles and dubbing** in multiple languages.

**Data-Driven Content Creation:**

Instead of **guessing what users want**, Netflix uses **big data analytics** to identify trends and produce hit shows. Examples:

* *House of Cards* was greenlit based on **user interest in political dramas**.
* *Squid Game* gained popularity due to **AI-driven content suggestions**.

**Case Study: Real-World Problems and Netflix Innovative Solutions:**

transformed into the world’s leading streaming platform by solving multiple real-world problems in the entertainment industry. Through innovation in **technology, content delivery, and data analytics**, Netflix has redefined how people consume entertainment.

**Problem 1: Disconnect in Digital Relationships:**

**Real-World Challenge:**

As entertainment consumption shifts from social settings (theaters, family TV time) to personal devices, people experience a sense of isolation. Unlike traditional movie nights, digital streaming often lacks **social interaction and shared experiences**.

**Netflix’s Solution**

* **Netflix Party (Now Teleparty):** A browser extension that allows users to **watch shows together in sync** while chatting in real time.
* **Profile Personalization:** Users can create **customized profiles** for better personal experiences within shared accounts.
* **Social Media Engagement:** Netflix actively engages audiences on **Twitter, Instagram, and YouTube**, creating a community around its content.

**Problem 2: Information Overload**

**Real-World Challenge**

With thousands of shows and movies, users often feel overwhelmed when choosing what to watch. Information overload leads to **decision fatigue**, making viewers **spend more time searching than watching**.

**Netflix’s Solution**

* **AI-Powered Recommendation Engine:** Uses **machine learning** to analyze viewing history, search patterns, and user behavior to suggest relevant content.
* **Top 10 Lists & Trending Categories:** Helps users **quickly identify** popular content.
* **Interactive Content (e.g., Bandersnatch):** Provides **personalized storytelling**, engaging viewers through **decision-making**.

**Problem 3: Finding a Niche for Creativity**

**Real-World Challenge**

Traditional Hollywood production models limit **independent filmmakers and diverse storytelling** due to **budget constraints and market risks**. Many talented creators struggle to find platforms that allow **creative freedom**.

**Netflix’s Solution**

* **Investing in Original Content (Netflix Originals):** Provides **filmmakers with funding** and complete **creative control** (*Squid Game, Stranger Things*).
* **Global Talent Acquisition:** Supports **international content creators**, making shows like *Money Heist* and *Narcos* global successes.
* **Data-Driven Content Development:** Uses **audience analytics** to determine **which genres and stories have demand**, reducing financial risk.

**Problem 4: Limited Personal Branding**

**Real-World Challenge**

Actors, directors, and content creators often struggle to build **global recognition** without a strong personal branding platform. Traditional studios prioritize **big names**, making it hard for new talent to gain exposure.

**Netflix’s Solution**

* **Global Distribution:** Releases content simultaneously worldwide, giving actors/directors **instant international visibility**.
* **Promoting Underrated Talent:** Casts lesser-known actors in lead roles (*Squid Game’s* Jung Ho-yeon gained global fame after debuting in the series).
* **Social Media & Marketing Strategy:** Leverages **memes, digital campaigns, and fan interactions** to promote artists and their work.

**Conclusion:**

Netflix has revolutionized digital entertainment by addressing key challenges such as social disconnection, content overload, lack of creative opportunities, and limited personal branding. Through AI-driven recommendations, interactive storytelling, global content investments, and strong marketing strategies, Netflix continues to dominate the streaming industry and empower both audiences and creators.

**Top Features of Netflix:**

* Personalized Recommendations
* Multiple User Profiles
* Offline Viewing (Download Feature)
* High-Quality Streaming (4K, HDR, Dolby Vision, and Atmos)
* Global Content Library & Multi-Language Support
* Ad-Supported Plan *(Budget-Friendly Option)*
* Smart Downloads & Play Something Feature
* Netflix Originals & Exclusive Content
* Watch History & Continue Watching
* Cross-Platform Compatibility
* Parental Controls & Kids Mode
* Cloud-Based Streaming (No Storage Needed)

**Schema Description:**

A **schema design** is essential for organizing and managing data in a Netflix-like streaming platform. Below is a breakdown of key entities, their attributes, and relationships.

Users Table:

| Sr. No. | Column\_name | Data Type |  |
| --- | --- | --- | --- |
| 1 | User\_id | INT (PK) |  |
| 2 | Name | VARCHAR(255) |  |
| 3 | Email | VARCHAR(255) UNIQUE |  |
| 4 | Password | VARCHAR(255) |  |
| 5 | Subscriptaions\_id | INT (FK) |  |
| 6 | Profile\_pic | VARCHAR(255) |  |
| 7 | Created\_at | TIMESTAMP |  |
| 8 | Updated\_at | TIMESTAMP |  |

Subscription Table:

| Sr. No. | Column\_name | Data Type |
| --- | --- | --- |
| 1 | subscription\_id | INT (PK) |
| 2 | User\_id | INT (PK) |
| 3 | Plan\_type | ENUM(Basic,Standard, Premium) |
| 4 | price | DECIMAL(10,2) |
| 5 | Status | ENUM(Active,Canceled, Paused) |
| 6 | Start\_date | Date |
| 7 | End\_date | Date |

Profile Table:

| Sr. No. | Column\_name | Data Type |
| --- | --- | --- |
| 1 | profile\_id | INT (PK) |
| 2 | User\_id | INT (PK) |
| 3 | Name | VARCHAR(255) |
| 4 | Age\_rating | ENUM (G,PG,PG-13,R) |
| 5 | langugage | VARCHAR(50) |
| 6 | Created\_at | TIMESTAMP |

Movies & Shows Table:

| Sr. No. | Column\_name | Data Type |
| --- | --- | --- |
| 1 | Content\_id | INT (PK) |
| 2 | title | VARCHAR(255) |
| 3 | description | TEXT |
| 4 | genre | VARCHAR(255) |
| 5 | release\_year | INT |
| 6 | duration | INT |
| 7 | content\_type | ENUM (Movie, Show) |
| 8 | langugage | VARCHAR(50) |
| 9 | rating | DECIMAL(2,1) |
| 10 | thumbnail | VARCHAR(255) |
| 11 | Triler\_url | VARCHAR(255) |
| 12 | Created\_at | TIMESTAMP |

Episodes Table:

| Sr. No. | Column\_name | Data Type |
| --- | --- | --- |
| 1 | episode\_id | INT (PK) |
| 2 | Content\_id | INT (FK) |
| 3 | season\_number | INT |
| 4 | Episode\_number | INT |
| 5 | title | VARCHAR(255) |
| 6 | durations | INT |
| 7 | Video\_url | VARCHAR(255) |
| 8 | thumbnail | VARCHAR(255) |
| 9 | Released\_date | DATE |

Watch History Table:

| Sr. No. | Column\_name | Data Type |
| --- | --- | --- |
| 1 | history\_id | INT (PK) |
| 2 | User\_id | INT (FK) |
| 3 | Content\_id | INT (FK) |
| 4 | Profile\_id | INT (FK) |
| 5 | watched\_duration | INT |
| 6 | Is\_completed | BOOLEAN |
| 7 | Last\_watched | TIMESTAMP |

Ratings & Reviews Table:

| Sr. No | Column\_name | Data type |
| --- | --- | --- |
| 1 | Review\_id | INT (PK) |
| 2 | User\_id | INT (FK) |
| 3 | Content-Id | INT (FK) |
| 4 | rating | DECIMAL(2,1) |
| 5 | Review\_text | TEXT |
| 6 | created\_at | TIMESTAMP |

Recommendations Table:

| Sr. No. | Column\_name | Data type |
| --- | --- | --- |
| 1 | rec\_id | INT (PK) |
| 2 | User\_id | INT (FK) |
| 3 | Content-id | INT (FK) |
| 4 | algorithm | VARCHAR(255) |
| 5 | score | DECIMAL(3,2) |
| 6 | Created\_at | TIMESTAMP |

Payment Transactions Table:

| Sr. No. | Column\_name | Data type |
| --- | --- | --- |
| 1 | Payment\_id | INT (PK) |
| 2 | User\_id | INT (FK) |
| 3 | subscription\_id | INT (FK) |
| 4 | amount | DECIMAL(10,2) |
| 5 | status | ENUM(Pending,Completed, Failed) |
| 6 | Payment\_method | ENUM(Card,PayPal,UPI) |
| 7 | transaction\_date | TIMESTAMP |

Device Management Table:

| Sr. No | Column\_name | Data type |
| --- | --- | --- |
| 1 | Device\_id | INT (PK) |
| 2 | User\_Name | INT (FK) |
| 3 | Device\_name | VARCHAR(255) |
| 4 | Last\_active | TIMESTAMP |
| 5 | Ip\_address | VARCHAR(255) |

Schema Relationships:

**Users → Subscriptions** (One-to-One) → A user has **one active subscription**.

**Users → Profiles** (One-to-Many) → A user can create **multiple profiles**.

**Profiles → Watch History** (One-to-Many) → Each profile has **its own watch history**.

**Movies & Shows → Episodes** (One-to-Many) → A **show** has **multiple episodes**.

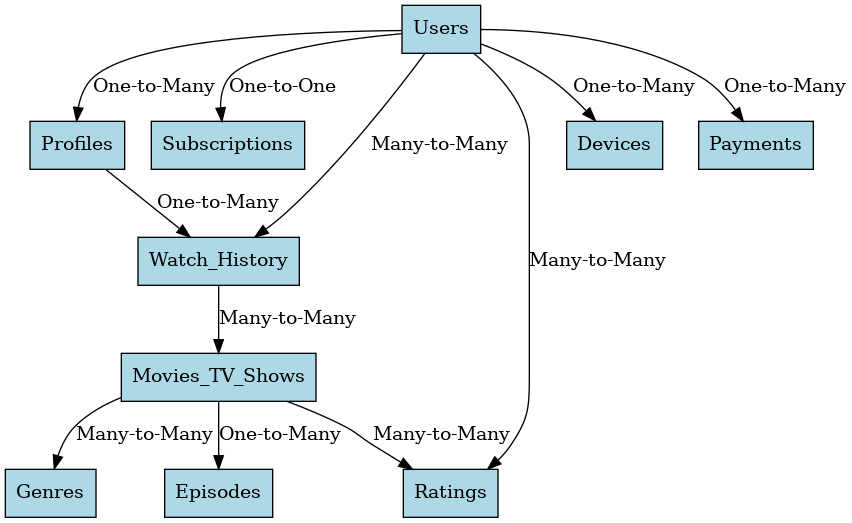
**Users → Watch History → Content** (Many-to-Many) → A user **watches multiple content items**.

**Users → Ratings & Reviews → Content** (Many-to-Many) → Users can **rate multiple shows/movies.**

**Users → Payments** (One-to-Many) → A user can have **multiple payments** for renewals.

**Users → Devices** (One-to-Many) → Users can **log in from multiple devices**.

**ER Diagram:**

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