**Problem Statement**

### **Product Dissection – Amazon Prime Video**

Welcome to this case study on dissecting and designing the product schema for **Amazon Prime Video**, one of the top-leading video streaming platforms in the world. In this case study, you will explore the fascinating world of **schema design** specifically for Amazon Prime Video, understanding how it handles its features and user interactions through smart data architecture.

Your task is to deeply research **Amazon Prime Video’s** features and design a schema that captures the core of how the platform works. By focusing on important **entities, attributes, and relationships**, you will gain powerful insights into how data is managed behind the scenes and how it supports the user experience.

This case study will guide you step-by-step to:

* Understand how Amazon Prime Video works,
* Identify real-world problems it solves,
* Break down its main features,
* Build a schema that represents the entire platform logically.

By the end, you will understand how **schema design plays a major role** in powering the smooth, personalized, and scalable experience that Amazon Prime Video offers its millions of users.

### **Step 1: Leading Platform Chosen**

**Platform:** Amazon Prime Video  
 **Category:** OTT Streaming Platform

### **🔹 Step 2: Platform Research – Features**

* Streaming of movies, series, and originals
* Multiple user profiles under one account
* Personalized recommendations
* Parental controls (Kids Mode)
* Offline video downloads
* Watchlist management
* Multi-language content
* Ratings and reviews

### **🔹 Step 3: Product Dissection – Problems Solved**

| **Feature** | **Problem Solved** |
| --- | --- |
| Personalized suggestions | Saves time finding new content |
| Downloads | Helps during low/no internet |
| Kids profile | Keeps adult content away from children |
| Multiple profiles | Personalized viewing for each family member |
| Watchlist | Helps users keep track of what to watch |

### **🔹 Step 4: Real-Life Case Study Examples**

#### **📌 Example 1:**

**User:** Raj from a remote village  
 **Problem:** Poor network; couldn’t stream movies  
 **Solution:** Prime Video’s download feature helped him enjoy content offline.

#### **📌 Example 2:**

**User:** A family of 4 sharing an account  
 **Problem:** Confused content recommendations  
 **Solution:** Created separate profiles → each user got personalized content.

#### **📌 Example 3:**

**User:** A parent with two kids  
 **Problem:** Concern about inappropriate content  
 **Solution:** Kids mode + PIN lock gave peace of mind.

### **🔹 Step 5: Schema Design (Entities, Attributes, Relationships)**

| **Entity** | **Key Attributes** |
| --- | --- |
| **User** | user\_id (PK), name, email, password, subscription\_status |
| **Profile** | profile\_id (PK), user\_id (FK), name, is\_kid, language\_preference |
| **Video** | video\_id (PK), title, genre, release\_year, language, is\_original |
| **WatchHistory** | history\_id (PK), profile\_id (FK), video\_id (FK), watch\_date, progress\_time |
| **Watchlist** | watchlist\_id (PK), profile\_id (FK), video\_id (FK), date\_added |
| **Download** | download\_id (PK), profile\_id (FK), video\_id (FK), download\_date, quality |
| **RatingReview** | review\_id (PK), profile\_id (FK), video\_id (FK), rating, review\_text, review\_date |

### **🔹 Step 6: Rationale Behind Design**

* **User & Profile**: One account, many users → handled via profile table
* **History, Watchlist, Downloads**: Profile-specific → avoids mix-up of data
* **Rating system**: Allows user feedback + helps in improving recommendations
* **Separation of video attributes**: Makes filtering easier (by language, year, etc.)

### **🔹 Step 7: ER Diagram**

Here's a **visual layout (you can draw it in Miro, Draw.io, or Canva):**

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| User |◄────┐ | Video |

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Watchlist ▼ History ▼ RatingReview

+---------+ +---------+ +---------+

| Video | | Video | | Video |

+---------+ +---------+ +---------+

* One **User** → many **Profiles**
* One **Profile** → multiple **Watchlists, Downloads, Reviews, Histories**
* Each connects to one **Video**

### **🔹 Step 8: Presentation of Findings**

* Amazon Prime Video simplifies entertainment by solving real-life problems.
* The schema supports core features like personalization, safety, and smooth streaming.
* Efficient relationships between users, profiles, and videos improve the experience.
* Features like Kids Mode, offline downloads, and personalized profiles make Prime Video user-friendly and scalable.

## **✦ 𝐀𝐌𝐀𝐙𝐎𝐍 𝐏𝐑𝐈𝐌𝐄 𝐕𝐈𝐃𝐄𝐎 ✦**

🎬 *Stream the world of entertainment* 📺 *Movies • TV Shows • Originals • More* 🚀 *Anytime. Anywhere. On Any Device.*

➤ Powered by **Amazon** ➤ Home to award-winning series & exclusive content  
 ➤ Experience Ultra HD | Multi-language Audio | Personalized Watchlists

📦 Included with Amazon Prime Membership

## **Product Dissection for Amazon Prime Video**

### **🔷 Company Overview:**

**Amazon Prime Video**, launched by Amazon in 2006 (and rebranded globally in 2016), is a popular online streaming platform that offers movies, TV shows, documentaries, and original content. With millions of subscribers worldwide, Prime Video has become a major part of Amazon’s ecosystem. It allows users to watch content on-demand, rent or buy movies, and enjoy exclusive Amazon Originals. Its focus on quality content, user experience, and global availability makes it one of the leading platforms in the entertainment industry.

## **🎯 Product Dissection and Real-World Problems Solved by Amazon Prime Video:**

Amazon Prime Video is not just about watching movies or shows. It solves several real-world problems by using smart features and a user-friendly design. It helps users:

* Discover content based on their tastes.
* Watch content in multiple languages.
* Stream videos even on low-speed internet.
* Enjoy ad-free entertainment.
* Download videos to watch offline.

Let’s look at how Amazon Prime Video addresses common challenges faced by users.

## **📝 Case Study: Real-World Problems and Amazon Prime Video’s Solutions**

### **✅ Problem 1: Too Many Streaming Options, But Not Enough Relevance**

**Challenge:** Users often feel overwhelmed by too many choices and don’t know what to watch.

**Prime Video's Solution:** Prime Video uses AI to recommend movies and shows based on a user's watch history, ratings, and preferences. This helps users find content they actually enjoy without wasting time searching.

### **✅ Problem 2: Expensive Entertainment Access**

**Challenge:** Many people find cable TV or separate OTT subscriptions expensive.

**Prime Video's Solution:** Prime Video offers affordable monthly or yearly subscriptions. It also includes free delivery and music streaming as part of Amazon Prime, offering more value for money.

### **✅ Problem 3: Internet Issues in Rural Areas**

**Challenge:** Many users in smaller towns and villages have slow or unstable internet.

**Prime Video's Solution:** It allows **offline downloads** in multiple quality formats. People can download content using Wi-Fi and watch later without buffering.

### **✅ Problem 4: Language Barriers**

**Challenge:** People want to watch content in their local language.

**Prime Video's Solution:** The platform provides **multi-language support**, including subtitles and dubbing in Hindi, Tamil, Telugu, Bengali, etc. This makes it inclusive for a wider audience.

### **✅ Problem 5: Need for Safe Content for Kids**

**Challenge:** Parents want a secure platform for children.

**Prime Video's Solution:** Prime Video offers **Kids mode**, with age-appropriate content and parental control settings to keep children safe while watching.

## **🌟 Top Features of Amazon Prime Video**

1. **User Profiles:** Multiple user profiles for personalization.
2. **Watchlist:** Save content to watch later.
3. **Recommendations:** AI-based suggestions based on user interest.
4. **Multi-Device Access:** Use on phones, TVs, laptops, etc.
5. **Parental Controls:** Restrict content for kids.
6. **Subtitles and Dubbing:** Available in multiple languages.
7. **Amazon Originals:** Exclusive shows and movies.
8. **Download Option:** Offline viewing support.

## **🗂️ Schema Description: Amazon Prime Video**

Let’s now break down the **data structure** or **schema** behind Prime Video using key entities.

### **📌 User Entity**

Stores information about every user.

* **UserID** (Primary Key)
* **Username**
* **Email**
* **Password**
* **Subscription\_Status**
* **Registration\_Date**

### **📌 Profile Entity**

Each account can have multiple profiles.

* **ProfileID** (Primary Key)
* **UserID** (FK → User)
* **Profile\_Name**
* **Is\_Kids\_Profile** (Boolean)
* **Language\_Preference**

### **📌 Content Entity**

All movies and shows are part of this entity.

* **ContentID** (Primary Key)
* **Title**
* **Genre**
* **Language**
* **Release\_Year**
* **Type** (Movie/Series)
* **Rating**

### **📌 Episode Entity**

If content is a series, it has episodes.

* **EpisodeID** (Primary Key)
* **ContentID** (FK → Content)
* **Season\_Number**
* **Episode\_Number**
* **Title**
* **Duration**

### **📌 WatchHistory Entity**

Tracks what each user profile watched.

* **HistoryID** (Primary Key)
* **ProfileID** (FK → Profile)
* **ContentID** (FK → Content)
* **Watch\_Date**
* **Progress** (in minutes)

### **📌 Review Entity**

Stores user ratings and feedback.

* **ReviewID** (Primary Key)
* **ProfileID** (FK → Profile)
* **ContentID** (FK → Content)
* **Rating** (1 to 5)
* **Comment**
* **Review\_Date**

### **📌 Watchlist Entity**

Stores what each user profile has saved for later.

* **WatchlistID** (Primary Key)
* **ProfileID** (FK → Profile)
* **ContentID** (FK → Content)
* **Added\_Date**

## **🔗 Relationships:**

* A **User** has multiple **Profiles**.
* A **Profile** can **watch** multiple **Content** items.
* A **Profile** can **rate/review** multiple **Content** items.
* A **Profile** can add many **Content** to their **Watchlist**.
* A **Content** can have **multiple Episodes** (if it is a series).

## **📊 ER Diagram**

You can create this ER Diagram using tools like:

* **Miro**
* **Lucidchart**
* **Draw.io**

The ER diagram should include the above entities and their relationships. Here's how it should look at a high level:

css

CopyEdit

User ───< Profile ───< WatchHistory >─── Content

└────< Review

└────< Watchlist

Content ───< Episode

## **✅ Conclusion:**

In this case study, we studied Amazon Prime Video's product, features, and how it solves real-world problems. Its design is focused on **personalized entertainment**, **easy access**, and **family-friendly viewing**. By understanding its schema, we learn how platforms like Prime Video store and use data to improve user experience. The database model with entities like **User**, **Profile**, **Content**, and **WatchHistory** shows how important backend design is for a smooth frontend experience.

This case study highlights how **smart schema design** supports millions of users, personalized content, and streaming without interruption. Prime Video proves that **user-focused product design** with a strong data model can truly change how we watch and enjoy content.