



Video Streaming Site Database

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The Netflix logo, consisting of the word "NETFLIX" in white, bold, sans-serif capital letters with a 3D effect, set against a solid red background.

The Amazon Prime Video logo, featuring the word "prime" in blue and "video" in dark grey, with the blue Amazon smile arrow underneath.

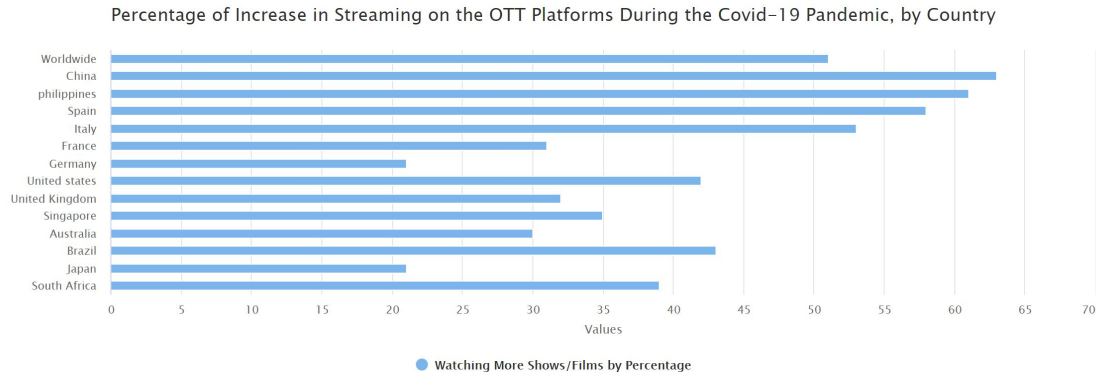
The Hulu logo, featuring the word "hulu" in a bold, black, sans-serif font, set against a solid green background.

Problem Space: Video Streaming Industry

Over the few years, the use of online video streaming site has increased noticeably.

Demand for the video-streaming service is at the highest after the stay-at-home practice as a response to COVID-19.

Goal: to create a database that comprises information of where each media programs are available for streaming and the subscription plans of the sites.



Source:

<https://market.us/statistics/online-video-and-streaming-sites/>

Database Design

Some of the features that the user can experience include:

- Searching programs by titles, genres, keywords.
- The user can find out where the programs are being streamed and the subscription plan of that site.
- Searching the casts and crews that contributed to the programs
- The user can view the 5-star ratings of the programs
- Finding and Comparing subscription options of different streaming sites

Core tables:

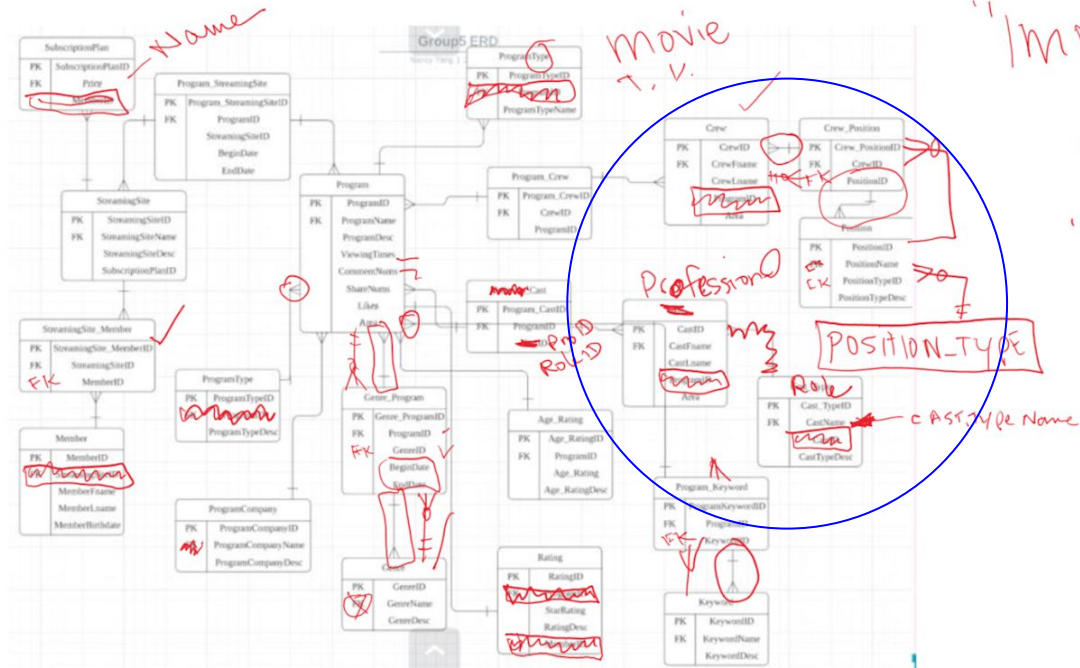
Programs, Genres, Keywords, Members, Streaming Sites, Ratings, Casts and Crews, Subscription, Subscription Plans

Draft ERD

Wednesday, July 1, 2020 6:02 PM

Problems:

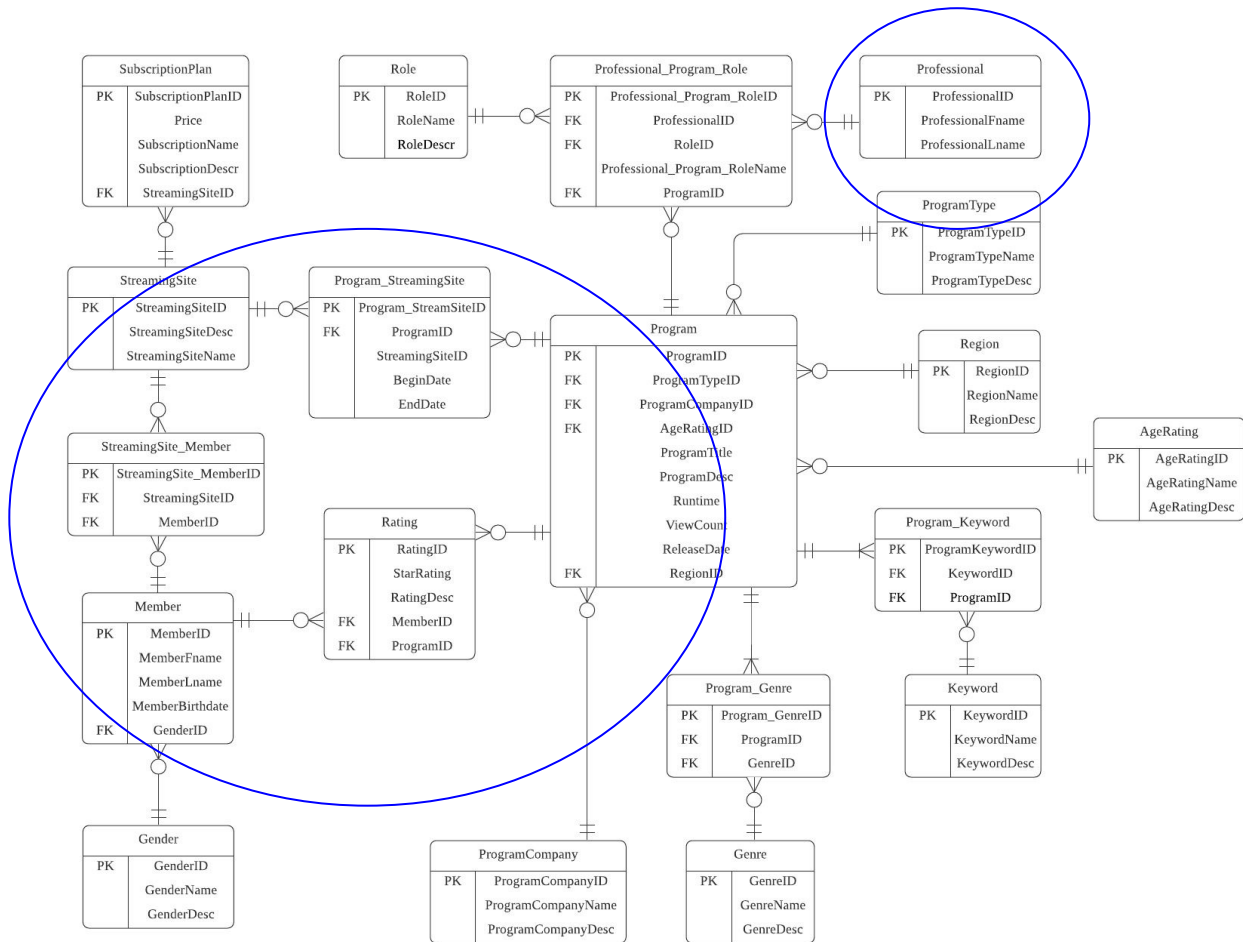
- Inverse Relationship cardinalities
- Unnecessary entities



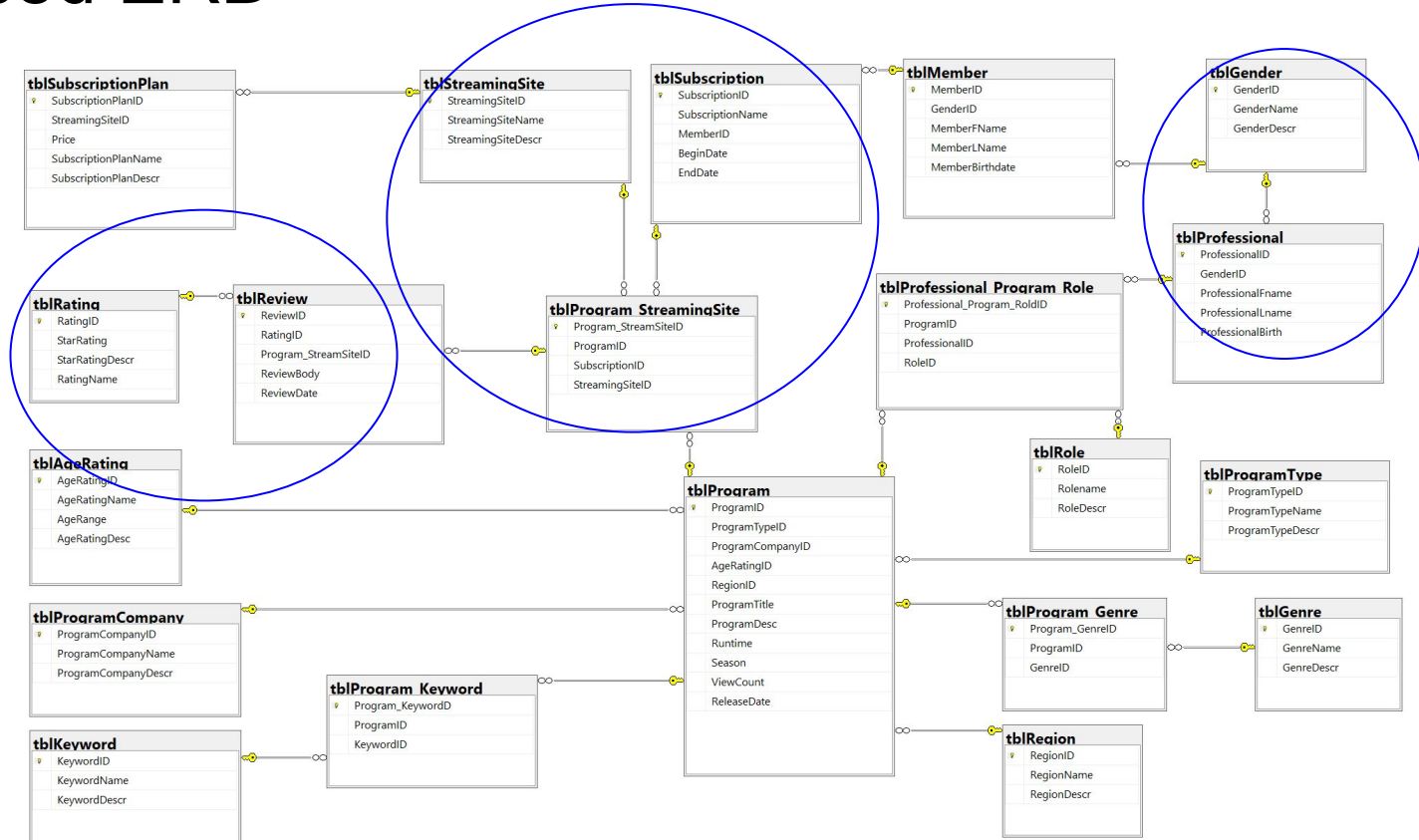
Draft ERD

Problems:

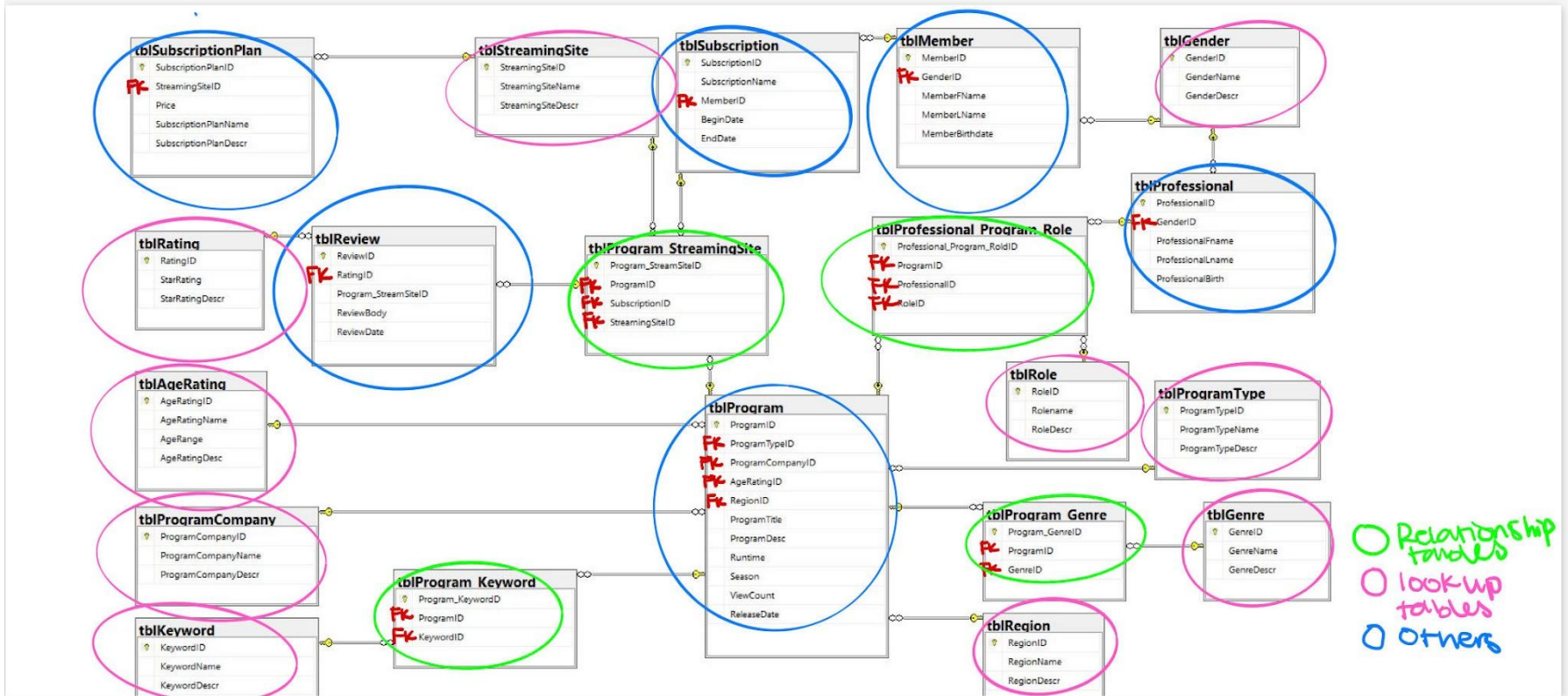
- Relational Loop that causes circular reference
- Users might want to search programs by the gender of professionals



Revised ERD



DDL/Physical Database Design



Stored Procedures

--Insert new row into Professional Table

```
CREATE PROCEDURE PA5INSERT_tblProfessional
@PFname varchar(20),
@PLname varchar(20),
@PBirth Date,
@G_Name varchar(50)

AS
DECLARE @G_ID INT

SET @G_ID = (SELECT GenderID FROM tblGender WHERE GenderName = @G_Name)

IF @G_ID IS NULL
BEGIN
    PRINT 'Error present in @G_ID';
    THROW 51007, '@G_ID cannot be NULL; process terminated', 1;
END

BEGIN TRANSACTION A1
INSERT INTO tblProfessional(ProfessionalFname, ProfessionalLname, ProfessionalBirth, GenderID)
VALUES(@PFname, @PLname, @PBirth, @G_ID)
IF @@ERROR <> 0
    ROLLBACK TRANSACTION A1
ELSE
    COMMIT TRANSACTION A1
GO
```

--Insert a row into Program_Keyword table

```
CREATE PROCEDURE PA5INSERT_tblProgram_Keyword
@KeywordName varchar(50),
@ProgramName varchar(500)

AS
DECLARE @P_ID INT, @K_ID INT

SET @P_ID = (SELECT ProgramID FROM tblProgram WHERE ProgramTitle = @ProgramName)

IF @P_ID IS NULL
BEGIN
    PRINT 'Error present in @P_ID';
    THROW 51007, '@P_ID cannot be NULL; process terminated', 1;
END

SET @K_ID = (SELECT KeywordID FROM tblKeyword WHERE KeywordName = @KeywordName)

IF @K_ID IS NULL
BEGIN
    PRINT 'Error present in @K_ID';
    THROW 51007, '@K_ID cannot be NULL; process terminated', 1;
END

BEGIN TRANSACTION A7
INSERT INTO tblProgram_Keyword(ProgramID, KeywordID)
VALUES(@P_ID, @K_ID)
IF @@ERROR <> 0
    ROLLBACK TRANSACTION A7
ELSE
    COMMIT TRANSACTION A7
GO
```


Business Rules

```
/*
constraints:
Only people over 18 can subscribe to Disney Plus
Members under age 13 cannot write reviews on programs rated PG-13
Members under age 17 cannot write reviews on programs rated R
One member cannot review the same program more than three times
Each program can't have more than 5 program keywords
Each program can't have more than 5 Genres
*/
```

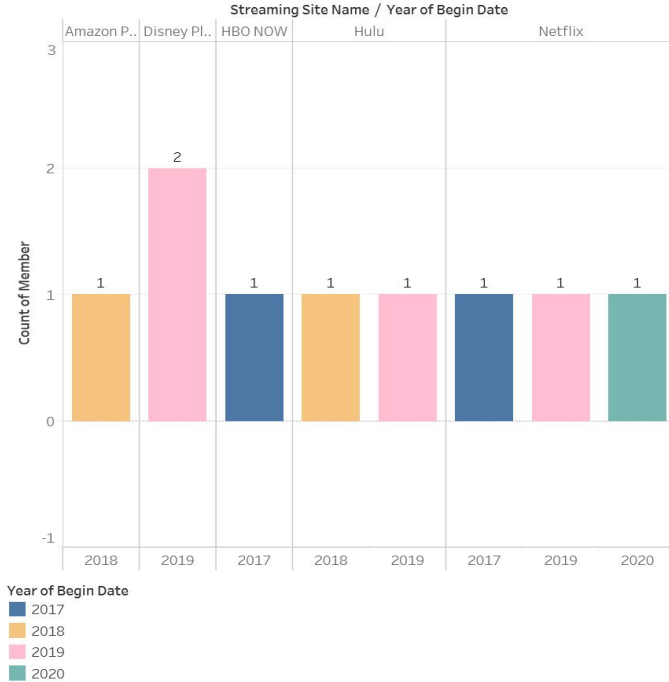
```
ALTER FUNCTION fn_Over18_joinDP()
RETURNS INT
AS
BEGIN
    DECLARE @DP INT = 0
    IF EXISTS (SELECT M.MemberID
               FROM tblMember M
               JOIN tblSubscription SM ON M.MemberID = SM.MemberID
               JOIN tblProgram_StreamingSite PSS ON SM.SubscriptionID = PSS.SubscriptionID
               JOIN tblStreamingSite SS ON PSS.StreamingSiteID = SS.StreamingSiteID
               WHERE DATEDIFF(year, M.MemberBirthdate, GETDATE()) < 18
               AND SS.StreamingSiteName = 'Disney Plus'
              )
    BEGIN
        SET @DP = 1
    END
    RETURN @DP
END
GO
```

```
CREATE FUNCTION fn_ThreeRatingperProgram()
RETURNS INT
AS
BEGIN
    DECLARE @OR INT = 0
    IF EXISTS (SELECT *
               FROM tblProgram P
               JOIN tblProgram_StreamingSite PS ON P.ProgramID = PS.ProgramID
               JOIN tblSubscription SM ON PS.SubscriptionID = SM.SubscriptionID
               JOIN tblMember M ON SM.MemberID = M.MemberID
               JOIN tblReview RE ON PS.Program_StreamingSiteID = RE.Program_StreamingSiteID
               JOIN tblRating RA ON RE.RatingID = RA.RatingID
               GROUP BY P.ProgramID
               HAVING COUNT(*) > 3
              )
    BEGIN
        SET @OR = 1
    END
    RETURN @OR
END
GO

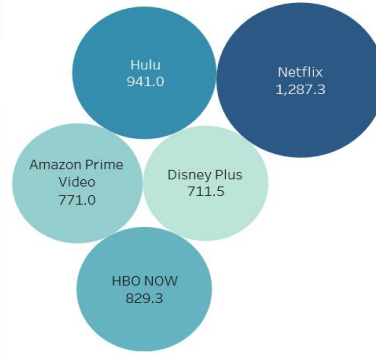
ALTER TABLE tblReview
ADD CONSTRAINT CK_no3reviews
CHECK (dbo.fn_ThreeRatingperProgram() = 0)
GO
```

Group 5 - Video Streaming Site

Number of Streaming Site Subscriptions each year



Average Number of Subscription days of each Streaming site



Metrics:

- Number of subscription increase
- Average subscription date of each Streaming Site
- Increase in streaming time

Average Streaming time for each Streaming Site

