

Assignment 2 – Logical Modeling

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IS 6420: Database Theory and Design
Video Rental Database Logical Model

Task 1 – Process Normal Entity Types

Actor

<u>First_Name</u>	<u>Middle_Name</u>	<u>Last_Name</u>	<u>Date_of_Birth</u>	Gender
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Film

<u>Release_Year</u>	<u>Title</u>	Duration
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Director

<u>First_Name</u>	<u>Middle_Name</u>	<u>Last_Name</u>	<u>Date_of_Birth</u>	Country_of_Birth
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Copy?

<u>Copy_Number</u>	Condition
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Task 2 – Process weak Entity Types

Actor

First_Name	Middle_Name	Last_Name	Date_of_Birth	Gender
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Film

Release_Year	Title	Duration
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Director

First_Name	Middle_Name	Last_Name	Date_of_Birth	Country_of_Birth
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Copy

Condition	Copy_Number	Film_Release_Year	Film_Title
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Composite primary key

Task 3 – Process 1-to-m Relationship Types

Actor

First_Name Middle_Name Last_Name Date_of_Birth Gender

Film_Actor

Role

Film

Release_Year Title Duration Director_First_Name Director_Middle_Name Director_Last_Name Director_DOB

Director

First_Name Middle_Name Last_Name Date_of_Birth Country_of_Birth

Copy

Composite primary key

Condition Copy_Number Film_Release_Year Film_Title

Composite primary key

Task 4 – Process m-to-m Relationship Types

Actor

First_Name	Middle_Name	Last_Name	Date_of_Birth	Gender
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Film_Actor

Foreign Key

Role	Actor_First_Name	Actor_Middle_Name	Actor_Last_Name	Actor_Date_of_Birth	Film_Release_Year	Film_Title
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Film

Composite primary key

Release_Year	Title	Duration	Director_First_Name	Director_Middle_Name	Director_Last_Name	Director_DOB
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Director

First_Name	Middle_Name	Last_Name	Date_of_Birth	Country_of_Birth
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Copy

Composite primary key

Condition	Copy_Number	Film_Release_Year	Film_Title
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Composite primary key

Task 5 – Process 1-to-1 Relationship Types

Nothing to submit

Task 6 – Process Unary Relationship Types

Nothing to submit

Task 7 – Process n-ary Relationship Types

Nothing to submit

Task 8 – Process Supertypes/Subtypes

Film

Release_Year	Title	Duration	Director_First_Name	Director_Middle_Name	Director_Last_Name	Director_DOB
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Educational

Film_Release_Year	Film_Title	Educational_Category
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Foreign Key

Foreign

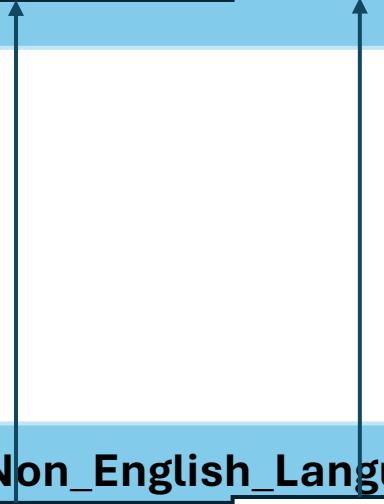
Film_Release_Year	Film_Title	Non_English_Language
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Foreign Key

Task 9 – Process Multi-valued Attributes

Foreign

Film_Release_Year Film_Title



Foreign_Non_English_Language

Film_Release_Year Film_Title Non_English_Language

Actor

First_Name	Middle_Name	Last_Name	Date_of_Birth	Gender
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Film_Actor

Role	Actor_First_Name	Actor_Middle_Name	Actor_Last_Name	Actor_Date_of_Birth	Film_Release_Year	Film_Title
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Film

Release_Year	Title	Duration	Director_First_Name	Director_Middle_Name	Director_Last_Name	Director_DOB
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Director

First_Name	Middle_Name	Last_Name	Date_of_Birth	Country_of_Birth
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Copy

Condition	Copy_Number	Film_Release_Year	Film_Title
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Educational

Film_Release_Year	Film_Title	Educational_Category
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Foreign

Film_Release_Year	Film_Title
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Foreign_Non_English_Language

Film_Release_Year	Film_Title	Non_English_Language
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Foreign Key

Foreign Key

Composite primary key

Foreign Key

Composite primary key

Composite primary key

Foreign Key

Foreign Key