PHYSICAL MODEL

FOR PROJECT
Videorental Project

MODEL
Videorental

Version

-

Quest Software, Inc.
(c) by Radim Mario Tkacik

Created: 3/15/2007
Last Modified: 6/1/2011

Model Description

Entity Report

Entity Name	Primary Key	# Attributes
SCOTT.T_BORROWING	exemplar_id	6
SCOTT.T_CUSTOMER	customer_id	3
SCOTT.T_CUSTOMER_RATING	title, director	3
SCOTT.T_EXEMPLAR	exemplar_id	4
SCOTT.T_FILM	film_id	7
SCOTT.T_GENRE	genre_id	2
SCOTT.T_MEDIUM	medium_id	2
SCOTT.T_ORDER_RECORD	customer_id, film_id	3

Entity 'SCOTT.T_BORROWING'

Caption	Borrowing

Primary Key 'pk_T_BORROWING'

Attribute Name	type	Parent Entity
exemplar_id	PFK	SCOTT.T_EXEMPLAR

Attributes

Key	Attribute Name	Domain	Data Type	N[1]	U[2]	C[3]	D[4]	Comments
PFK	exemplar_id		Integer	YES	NO	NO	NO	
FK	customer_id		Integer	YES	NO	NO	NO	
	start_date		Date	NO	NO	NO	YES	
	end_date		Date	NO	NO	NO	NO	
	total_price		SCOTT.Price_Type	NO	NO	NO	NO	
VAT	VAT	VAT	Number(4,2)	NO	NO	NO	YES	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
makes	Non-identifying	SCOTT.T_CUSTOMER	SCOTT.T_BORROWING	1:5
is_related_to	Identifying	SCOTT.T_EXEMPLAR	SCOTT.T_BORROWING	1:1

Check Constraints

Check Constraint Name	check_end_after_start
Check	(end_date>start_date) or (end_date is null)

Triggers

Trigger Name
SCOTT.tri_BORROWING
SCOTT.tru_BORROWING

View Relationships

View Relationship Name	Alias	Parent Object	Child View
Borrowing rel	b	SCOTT.T_BORROWING	SCOTT.v_Customer_Has_Film

Comments

Borrowed items

Attribute 'exemplar_id'

Caption	Exemplar ID		
Entity Name	SCOTT.T_BORROWING		
Primary Key	YES		
Foreign Key	YES	**Parent Entity**	SCOTT.T_EXEMPLAR
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'customer_id'

Caption	Customer ID		
Entity Name	SCOTT.T_BORROWING		
Primary Key	NO		
Foreign Key	YES	**Parent Entity**	SCOTT.T_CUSTOMER
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'start_date'

Caption	Start Date
Entity Name	SCOTT.T_BORROWING
Primary Key	NO
Foreign Key	NO
Data Type	Date
Not Null	NO
Unique	NO
Default Rule	today
Default	sysdate

Attribute 'end_date'

Caption	End Date
Entity Name	SCOTT.T_BORROWING
Primary Key	NO
Foreign Key	NO
Data Type	Date
Not Null	NO
Unique	NO

Attribute 'total_price'

Caption	Total Price
Entity Name	SCOTT.T_BORROWING
Primary Key	NO
Foreign Key	NO
User Data Type	SCOTT.Price_Type
Not Null	NO
Unique	NO

Attribute 'VAT'

Caption	VAT
Entity Name	SCOTT.T_BORROWING
Primary Key	NO
Foreign Key	NO
Domain	VAT
Data Type	Number(4,2)
Not Null	NO
Unique	NO
Default	19

Entity 'SCOTT.T_CUSTOMER'

Caption	Customer

Primary Key 'pk_T_CUSTOMER'

Attribute Name	type	Parent Entity
customer_id	PK	-----

Attributes

Key	Attribute Name	Domain	Data Type	N[1]	U[2]	C[3]	D[4]	Comments
PK	customer_id		Integer	YES	NO	NO	NO	
	name		Varchar2(20 CHAR)	NO	NO	NO	NO	Name column can contain First and Middle name. Surname must be in different column.
	address		SCOTT.Cust_Address_Type	NO	NO	NO	NO	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
makes	Non-identifying	SCOTT.T_CUSTOMER	SCOTT.T_BORROWING	1:5
places	Identifying	SCOTT.T_CUSTOMER	SCOTT.T_ORDER_RECORD	1:N

Indexes

Index Name	Attributes	Unique
i_name	name	NO

View Relationships

View Relationship Name	Alias	Parent Object	Child View
Customer rel	c	SCOTT.T_CUSTOMER	SCOTT.v_Customer_Has_Film

Attribute 'customer_id'

Caption	Customer ID
Entity Name	SCOTT.T_CUSTOMER
Primary Key	YES
Foreign Key	NO
Data Type	Integer
Not Null	YES
Unique	NO
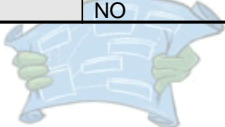
Attribute 'name'

Caption	Name
Entity Name	SCOTT.T_CUSTOMER
Primary Key	NO
Foreign Key	NO
Data Type	Varchar2(20 CHAR)
Not Null	NO
Unique	NO

Comments

```
Name column can contain First and Middle name. Surname must be in different
column.
```

Attribute 'address'

Caption	Address
Entity Name	SCOTT.T_CUSTOMER
Primary Key	NO
Foreign Key	NO
User Data Type	SCOTT.Cust_Address_Type
Not Null	NO
Unique	NO

Entity 'SCOTT.T_CUSTOMER_RATING'

Caption	Customer Rating

Primary Key 'pk_T_CUSTOMER_RATING'

Attribute Name	type	Parent Entity
title	PFK	SCOTT.T_FILM
director	PFK	SCOTT.T_FILM

Attributes

Key	Attribute Name	Domain	Data Type	N[1)	U[2)	C[3)	D[4)	Comments
PFK	title		Varchar2(50 CHAR)	YES	NO	NO	NO	
PFK	director		Varchar2(30 CHAR)	YES	NO	NO	NO	
	rating		Integer	NO	NO	YES	YES	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
is_rated	Identifying	SCOTT.T_FILM	SCOTT.T_CUSTOMER_RATING	1:N

Comments

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Movie ratings (by customers)
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Attribute 'title'

Caption	Title		
Entity Name	SCOTT.T_CUSTOMER_RATING		
Primary Key	YES		
Foreign Key	YES	Parent Entity	SCOTT.T_FILM
Data Type	Varchar2(50 CHAR)		
Not Null	YES		
Unique	NO		

Attribute 'director'

Caption	Director		
Entity Name	SCOTT.T_CUSTOMER_RATING		
Primary Key	YES		
Foreign Key	YES	Parent Entity	SCOTT.T_FILM
Data Type	Varchar2(30 CHAR)		
Not Null	YES		
Unique	NO		

Attribute 'rating'

Caption	Rating
Entity Name	SCOTT.T_CUSTOMER_RATING
Primary Key	NO
Foreign Key	NO
Data Type	Integer
Not Null	NO
Unique	NO
Default	3

Check Constraints

Check Constraint Name	check_rating
Check	rating > 0

Entity 'SCOTT.T_EXEMPLAR'

Caption	Exemplar

Primary Key 'pk_T_EXEMPLAR'

Attribute Name	type	Parent Entity
exemplar_id	PK	-----

Attributes

Key	Attribute Name	Domain	Data Type	N[1]	U[2]	C[3]	D[4]	Comments
PK	exemplar_id		Integer	YES	NO	NO	NO	
FK	film_id		Integer	YES	NO	NO	NO	
FK	medium_id		Integer	YES	NO	NO	NO	
	price_per_day		Integer	NO	NO	NO	NO	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
is_related_to	Identifying	SCOTT.T_EXEMPLAR	SCOTT.T_BORROWING	1:1
is_available_on	Non-identifying	SCOTT.T_MEDIUM	SCOTT.T_EXEMPLAR	1:N
has	Non-identifying	SCOTT.T_FILM	SCOTT.T_EXEMPLAR	1:N

Keys

Key Type	Constraint Name	Attributes
PK	pk_T_EXEMPLAR	exemplar_id
AK	ak_exemplar_ppd	exemplar_id, price_per_day

View Relationships

View Relationship Name	Alias	Parent Object	Child View
Exemplar rel	e	SCOTT.T_EXEMPLAR	SCOTT.v_Customer_Has_Film

Attribute 'exemplar_id'

Caption	Exemplar ID
Entity Name	SCOTT.T_EXEMPLAR
Primary Key	YES
Foreign Key	NO
Data Type	Integer
Not Null	YES
Unique	NO

Attribute Properties

Used Sequence	SeqExemplar

Attribute 'film_id'

Caption	Film ID		
Entity Name	SCOTT.T_EXEMPLAR		
Primary Key	NO		
Foreign Key	YES	**Parent Entity**	SCOTT.T_FILM
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'medium_id'

Caption	Medium ID		
Entity Name	SCOTT.T_EXEMPLAR		
Primary Key	NO		
Foreign Key	YES	**Parent Entity**	SCOTT.T_MEDIUM
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'price_per_day'

Caption	Price per Day
Entity Name	SCOTT.T_EXEMPLAR
Primary Key	NO
Foreign Key	NO
Data Type	Integer
Not Null	NO
Unique	NO

Entity 'SCOTT.T_FILM'

Caption	Film

Primary Key 'pk_T_FILM'

Attribute Name	type	Parent Entity
film_id	PK	-----

Attributes

Key	Attribute Name	Domain	Data Type	N[1]	U[2]	C[3]	D[4]	Comments
PK	film_id		Integer	YES	NO	NO	NO	
	title		Varchar2(50 CHAR)	YES	NO	NO	NO	
	director		Varchar2(30 CHAR)	YES	NO	NO	NO	
	production _company		Varchar2(50 CHAR)	NO	NO	NO	NO	Company name must contain also information about company type - LTD, Inc. and so on.
FK	genre_id		Integer	YES	NO	NO	NO	
	min_age		Integer	NO	NO	NO	NO	
FK	film_ID_ep isodes		Integer	NO	NO	NO	NO	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
is_required_by	Identifying	SCOTT.T_FILM	SCOTT.T_ORDER_RECORD	1:N
is_of	Non-identifying	SCOTT.T_GENRE	SCOTT.T_FILM	1:N
has	Non-identifying	SCOTT.T_FILM	SCOTT.T_EXEMPLAR	1:N
is_rated	Identifying	SCOTT.T_FILM	SCOTT.T_CUSTOMER_RATING	1:N
has_more_episodes	Non-identifying	SCOTT.T_FILM	SCOTT.T_FILM	1:N

Keys

Key Type	Constraint Name	Attributes
PK	pk_T_FILM	film_id
AK	ak_title_director	title, director

View Relationships

View Relationship Name	Alias	Parent Object	Child View
Film rel	f	SCOTT.T_FILM	SCOTT.v_Customer_Has_Film

Attribute 'film_id'

Caption	Film ID
Entity Name	SCOTT.T_FILM
Primary Key	YES
Foreign Key	NO
Data Type	Integer
Not Null	YES
Unique	NO

Attribute 'title'

Caption	Title
Entity Name	SCOTT.T_FILM
Primary Key	NO
Foreign Key	NO
Data Type	Varchar2(50 CHAR)
Not Null	YES
Unique	NO

Attribute 'director'

Caption	Director
Entity Name	SCOTT.T_FILM
Primary Key	NO
Foreign Key	NO
Data Type	Varchar2(30 CHAR)
Not Null	YES
Unique	NO

Attribute 'production_company'

Caption	Production Company	
Entity Name	SCOTT.T_FILM	
Primary Key	NO	
Foreign Key	NO	▪
Data Type	Varchar2(50 CHAR)	
Not Null	NO	
Unique	NO	

Comments

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Company name must contain also information about company type – LTD, Inc. and
so on.
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Attribute 'genre_id'

Caption	Genre ID		
Entity Name	SCOTT.T_FILM		
Primary Key	NO		
Foreign Key	YES	Parent Entity	SCOTT.T_GENRE
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'min_age'

Caption	Minimal Age
Entity Name	SCOTT.T_FILM
Primary Key	NO
Foreign Key	NO
Data Type	Integer
Not Null	NO
Unique	NO

Attribute 'film_ID_episodes'

Caption	Film ID Episodes		
Entity Name	SCOTT.T_FILM		
Primary Key	NO		
Foreign Key	YES	Parent Entity	SCOTT.T_FILM
Data Type	Integer		
Not Null	NO		
Unique	NO		

Entity 'SCOTT.T_GENRE'

Caption	Genre

Primary Key 'pk_T_GENRE'

Attribute Name	type	Parent Entity
genre_id	PK	-----

Attributes

Key	Attribute Name	Domain	Data Type	N[1)	U[2)	C[3)	D[4)	Comments
PK	genre_id		Integer	YES	NO	NO	NO	
	name		Varchar2(20 CHAR)	NO	NO	NO	NO	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
is_of	Non-identifying	SCOTT.T_GENRE	SCOTT.T_FILM	1:N

Attribute 'genre_id'

Caption	Genre ID
Entity Name	SCOTT.T_GENRE
Primary Key	YES
Foreign Key	NO
Data Type	Integer
Not Null	YES
Unique	NO

Attribute 'name'

Caption	Name
Entity Name	SCOTT.T_GENRE
Primary Key	NO
Foreign Key	NO
Data Type	Varchar2(20 CHAR)
Not Null	NO
Unique	NO

Entity 'SCOTT.T_MEDIUM'

Caption	Medium

Primary Key 'pk_T_MEDIUM'

Attribute Name	type	Parent Entity
medium_id	PK	-----

Attributes

Key	Attribute Name	Domain	Data Type	N[1)]	U[2)]	C[3)]	D[4)]	Comments
PK	medium_id		Integer	YES	NO	NO	NO	
	medium_type		Varchar2(20 BYTE)	NO	NO	NO	NO	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
is_available_on	Non-identifying	SCOTT.T_MEDIUM	SCOTT.T_EXEMPLAR	1:N

Attribute 'medium_id'

Caption	Medium ID
Entity Name	SCOTT.T_MEDIUM
Primary Key	YES
Foreign Key	NO
Data Type	Integer
Not Null	YES
Unique	NO

Attribute 'medium_type'

Caption	Medium Type
Entity Name	SCOTT.T_MEDIUM
Primary Key	NO
Foreign Key	NO
Data Type	Varchar2(20 BYTE)
Not Null	NO
Unique	NO

Entity 'SCOTT.T_ORDER_RECORD'

Caption	Order Record

Primary Key 'pk_T_ORDER_RECORD'

Attribute Name	type	Parent Entity
customer_id	PFK	SCOTT.T_CUSTOMER
film_id	PFK	SCOTT.T_FILM

Attributes

Key	Attribute Name	Domain	Data Type	N[1]	U[2]	C[3]	D[4]	Comments
PFK	customer_id		Integer	YES	NO	NO	NO	
PFK	film_id		Integer	YES	NO	NO	NO	
	order_date		Date	NO	NO	NO	NO	

Relationships

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
places	Identifying	SCOTT.T_CUSTOMER	SCOTT.T_ORDER_RECORD	1:N
is_required_by	Identifying	SCOTT.T_FILM	SCOTT.T_ORDER_RECORD	1:N

Comments

All records are stored in list of records. It will be possible to book a movie.

Attribute 'customer_id'

Caption	Customer ID		
Entity Name	SCOTT.T_ORDER_RECORD		
Primary Key	YES		
Foreign Key	YES	Parent Entity	SCOTT.T_CUSTOMER
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'film_id'

Caption	Film ID		
Entity Name	SCOTT.T_ORDER_RECORD		
Primary Key	YES		
Foreign Key	YES	Parent Entity	SCOTT.T_FILM
Data Type	Integer		
Not Null	YES		
Unique	NO		

Attribute 'order_date'

Caption	Order Date
Entity Name	SCOTT.T_ORDER_RECORD
Primary Key	NO
Foreign Key	NO
Data Type	Date
Not Null	NO
Unique	NO

1)Not Null
2)Unique
3)Check
4)Default

Attribute Report

Attribute Name	Entity Name	Domain	Data Type	PK	FK
customer_id	SCOTT.T_BORROWING		Integer	NO	YES
end_date	SCOTT.T_BORROWING		Date	NO	NO
exemplar_id	SCOTT.T_BORROWING		Integer	YES	YES
start_date	SCOTT.T_BORROWING		Date	NO	NO
total_price	SCOTT.T_BORROWING		SCOTT.Price_Type	NO	NO
VAT	SCOTT.T_BORROWING	VAT	Number(4,2)	NO	NO
address	SCOTT.T_CUSTOMER		SCOTT.Cust_Address_Type	NO	NO
customer_id	SCOTT.T_CUSTOMER		Integer	YES	NO
name	SCOTT.T_CUSTOMER		Varchar2(20 CHAR)	NO	NO
director	SCOTT.T_CUSTOMER_RATING		Varchar2(30 CHAR)	YES	YES
rating	SCOTT.T_CUSTOMER_RATING		Integer	NO	NO
title	SCOTT.T_CUSTOMER_RATING		Varchar2(50 CHAR)	YES	YES
exemplar_id	SCOTT.T_EXEMPLAR		Integer	YES	NO
film_id	SCOTT.T_EXEMPLAR		Integer	NO	YES
medium_id	SCOTT.T_EXEMPLAR		Integer	NO	YES
price_per_day	SCOTT.T_EXEMPLAR		Integer	NO	NO
director	SCOTT.T_FILM		Varchar2(30 CHAR)	NO	NO
film_id	SCOTT.T_FILM		Integer	YES	NO
film_ID_episodes	SCOTT.T_FILM		Integer	NO	YES
genre_id	SCOTT.T_FILM		Integer	NO	YES
min_age	SCOTT.T_FILM		Integer	NO	NO
production_company	SCOTT.T_FILM		Varchar2(50 CHAR)	NO	NO
title	SCOTT.T_FILM		Varchar2(50 CHAR)	NO	NO
genre_id	SCOTT.T_GENRE		Integer	YES	NO
name	SCOTT.T_GENRE		Varchar2(20 CHAR)	NO	NO
medium_id	SCOTT.T_MEDIUM		Integer	YES	NO
medium_type	SCOTT.T_MEDIUM		Varchar2(20 BYTE)	NO	NO
customer_id	SCOTT.T_ORDER_RECORD		Integer	YES	YES
film_id	SCOTT.T_ORDER_RECORD		Integer	YES	YES
order_date	SCOTT.T_ORDER_RECORD		Date	NO	NO

Key Report

Key Type	Key Name	Entity Name
PK	pk_T_BORROWING	SCOTT.T_BORROWING
PK	pk_T_CUSTOMER	SCOTT.T_CUSTOMER
PK	pk_T_CUSTOMER_RATING	SCOTT.T_CUSTOMER_RATING
AK	ak_exemplar_ppd	SCOTT.T_EXEMPLAR
PK	pk_T_EXEMPLAR	SCOTT.T_EXEMPLAR
AK	ak_title_director	SCOTT.T_FILM
PK	pk_T_FILM	SCOTT.T_FILM
PK	pk_T_GENRE	SCOTT.T_GENRE
PK	pk_T_MEDIUM	SCOTT.T_MEDIUM
PK	pk_T_ORDER_RECORD	SCOTT.T_ORDER_RECORD

Key 'pk_T_BORROWING'

Caption	pk_T_BORROWING		
Key Type	Primary Key		
Entity Name	SCOTT.T_BORROWING		
Attribute		**Order**	**Foreign Key**
exemplar_id		ASC	YES

Key 'pk_T_CUSTOMER'

Caption	pk_T_CUSTOMER		
Key Type	Primary Key		
Entity Name	SCOTT.T_CUSTOMER		
Attribute		**Order**	**Foreign Key**
customer_id		ASC	NO

Key 'pk_T_CUSTOMER_RATING'

Caption	pk_T_CUSTOMER_RATING		
Key Type	Primary Key		
Entity Name	SCOTT.T_CUSTOMER_RATING		
Attribute		**Order**	**Foreign Key**
title		ASC	YES
director		ASC	YES

Key 'ak_exemplar_ppd'

Caption	exemplar_id-price_per_day		
Key Type	Alternate Key		
Entity Name	SCOTT.T_EXEMPLAR		
Attribute		**Order**	**Foreign Key**
exemplar_id		ASC	NO
price_per_day		ASC	NO

Key 'pk_T_EXEMPLAR'

Caption	pk_T_EXEMPLAR		
Key Type	Primary Key		
Entity Name	SCOTT.T_EXEMPLAR		
Attribute		**Order**	**Foreign Key**
exemplar_id		ASC	NO

Key 'ak_title_director'

Caption	title-director		
Key Type	Alternate Key		
Entity Name	SCOTT.T_FILM		
Attribute		**Order**	**Foreign Key**
title		ASC	NO
director		ASC	NO

Key 'pk_T_FILM'

Caption	pk_T_FILM		
Key Type	Primary Key		
Entity Name	SCOTT.T_FILM		
Attribute		**Order**	**Foreign Key**
film_id		ASC	NO

Key 'pk_T_GENRE'

Caption	pk_T_GENRE		
Key Type	Primary Key		
Entity Name	SCOTT.T_GENRE		
Attribute		**Order**	**Foreign Key**
genre_id		ASC	NO

Key 'pk_T_MEDIUM'

Caption	pk_T_MEDIUM		
Key Type	Primary Key		
Entity Name	SCOTT.T_MEDIUM		
Attribute		**Order**	**Foreign Key**
medium_id		ASC	NO

Key 'pk_T_ORDER_RECORD'

Caption	pk_T_ORDER_RECORD		
Key Type	Primary Key		
Entity Name	SCOTT.T_ORDER_RECORD		
Attribute		**Order**	**Foreign Key**
customer_id		ASC	YES
film_id		ASC	YES

Index Report

Index Name	Unique	Entity Name
i_name	NO	SCOTT.T_CUSTOMER

Index 'i_name'

Caption	i_name		
Entity Name	SCOTT.T_CUSTOMER		
Unique	NO		
Attribute	Order	Primary Key	Foreign Key
name	ASC	NO	NO

Relationship Report

Relationship Name	Relationship Type	Parent Entity	Child Entity	Card.
has	Non-identifying	SCOTT.T_FILM	SCOTT.T_EXEMPLAR	1:N
has_more_episodes	Non-identifying	SCOTT.T_FILM	SCOTT.T_FILM	1:N
is_available_on	Non-identifying	SCOTT.T_MEDIUM	SCOTT.T_EXEMPLAR	1:N
is_of	Non-identifying	SCOTT.T_GENRE	SCOTT.T_FILM	1:N
is_rated	Identifying	SCOTT.T_FILM	SCOTT.T_CUSTOMER_RATING	1:N
is_related_to	Identifying	SCOTT.T_EXEMPLAR	SCOTT.T_BORROWING	1:1
is_required_by	Identifying	SCOTT.T_FILM	SCOTT.T_ORDER_RECORD	1:N
makes	Non-identifying	SCOTT.T_CUSTOMER	SCOTT.T_BORROWING	1:5
places	Identifying	SCOTT.T_CUSTOMER	SCOTT.T_ORDER_RECORD	1:N
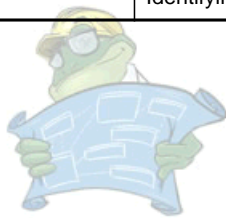
Relationship Name 'has'

Caption	Has		
Relationship Type	Non-identifying	Cardinality	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_FILM		
Child Entity	SCOTT.T_EXEMPLAR		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_FILM'	film_id	film_id

Relationship Name 'has_more_episodes'

Caption	Has More Episodes		
Relationship Type	Non-identifying	Cardinality	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_FILM		
Child Entity	SCOTT.T_FILM		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_FILM'	film_id	film_ID_episodes

Relationship Name 'is_available_on'

Caption	Is Available on		
Relationship Type	Non-identifying	Cardinality	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_MEDIUM		
Child Entity	SCOTT.T_EXEMPLAR		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_MEDIUM'	medium_id	medium_id

Relationship Name 'is_of'

Caption	Is of		
Relationship Type	Non-identifying	Cardinality	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_GENRE		
Child Entity	SCOTT.T_FILM		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_GENRE'	genre_id	genre_id

Relationship Name 'is_rated'

Caption	Is Rated		
Relationship Type	Identifying	Cardinality	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_FILM		
Child Entity	SCOTT.T_CUSTOMER_RATING		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Alternate Key 'ak_title_director'	title	title
	director	director

Relationship Name 'is_related_to'

Caption	Is Related to		
Relationship Type	Identifying	Cardinality	1:1
Mandatory Parent	YES		
Mandatory Child	NO		
Parent Entity	SCOTT.T_EXEMPLAR		
Child Entity	SCOTT.T_BORROWING		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_EXEMPLAR'	exemplar_id	exemplar_id

Relationship Name 'is_required_by'

Caption	Is Required by		
Relationship Type	Identifying	**Cardinality**	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_FILM		
Child Entity	SCOTT.T_ORDER_RECORD		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_FILM'	film_id	film_id

Relationship Name 'makes'

Caption	Makes		
Relationship Type	Non-identifying	**Cardinality**	1:5
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_CUSTOMER		
Child Entity	SCOTT.T_BORROWING		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_CUSTOMER'	customer_id	customer_id

Relationship Name 'places'

Caption	Places		
Relationship Type	Identifying	Cardinality	1:N
Mandatory Parent	YES		
Mandatory Child	YES		
Parent Entity	SCOTT.T_CUSTOMER		
Child Entity	SCOTT.T_ORDER_RECORD		

Referential Integrity

	Insert	Update	Delete
Parent	----	RESTRICT	RESTRICT
Child	NONE	NONE	----

Keys

Key Type	Parent Key	Child Key
Primary Key 'pk_T_CUSTOMER'	customer_id	customer_id

Domain Report

Domain Name	type	Data Type
VAT	Data Type	Number(4,2)

Domain 'VAT'

Caption	VAT
Data Type	Number(4,2)

Used in

Entity Name	Attribute Name
SCOTT.T_BORROWING	VAT

User Data Type Report

User Data Type Name	Type of User Data Type
SCOTT.Cust_Address_Type	Object Type
SCOTT.Price_Type	Object Type
SCOTT.Phone_List_Type	Varray Type

Object Type 'SCOTT.Cust_Address_Type'

Caption	Cust_Address_Type

Object Type Specification	AS OBJECT
	  (street_address VARCHAR2(40)
	  , postal_code VARCHAR2(10)
	  , city VARCHAR2(30)
	  , state_province VARCHAR2(10)
	  , country_id CHAR(2)
	  , phone Phone_List_Type
	  )

Used in

Entity Name	Attribute Name
SCOTT.T_CUSTOMER	address

Object Type 'SCOTT.Price_Type'

Caption	Price_Type
Object Type Specification	AS OBJECT (price NUMBER(10,2), MEMBER FUNCTION total_price_VAT (vat number) RETURN NUMBER)

Object Type Body Definition	IS
	   MEMBER FUNCTION total_price_VAT (vat NUMBER)
	   RETURN NUMBER IS
	   BEGIN
	     RETURN (price*((vat+100)/100));
	   END;
	END;

Used in

Entity Name	Attribute Name
SCOTT.T_BORROWING	total_price

Varray Type 'SCOTT.Phone_List_Type'

Caption	Phone_List_Type
Definition of Varray Type	AS VARRAY(5) OF VARCHAR2(25)

Default Report

Default Name
today

Default 'today'

Caption	today
Default	sysdate

Used in

Entity Name	Attribute Name
SCOTT.T_BORROWING	start_date

Check Constraint Report

Check Constraint Name	type	Object Name
check_end_after_start	Entity	SCOTT.T_BORROWING
check_rating	Attribute	rating (SCOTT.T_CUSTOMER_RATING)

Check Constraint 'check_end_after_start'

Caption	check_end_after_start
Entity Name	SCOTT.T_BORROWING

```
(end_date>start_date) or (end_date is null)
```

Check Constraint 'check_rating'

Caption	check_rating
Entity Name	SCOTT.T_CUSTOMER_RATING
Attribute Name	rating

```
rating > 0
```

Trigger Report

Trigger Name	Entity Name
SCOTT.tri_BORROWING	SCOTT.T_BORROWING
SCOTT.tru_BORROWING	SCOTT.T_BORROWING

Trigger 'SCOTT.tri_BORROWING' (Entity 'SCOTT.T_BORROWING')

Caption	tri_BORROWING

```
    declare price number(10,2);
begin
    select price_per_day
    into price
    from T_EXEMPLAR
    where T_EXEMPLAR.exemplar_id = :new.exemplar_id;
    :new.total_price := Price_Type((:new.end_date-:new.start_date)*price);
end;
```

Trigger Properties

Trigger Fire	BEFORE
Trigger Events	Insert
For Each Row	YES

Trigger 'SCOTT.tru_BORROWING' (Entity 'SCOTT.T_BORROWING')

Caption	tru_BORROWING

```
declare
    price number(10,2);
    total_price_old number(10,2);
    end_d date;
    start_d date;
begin
    select e.price_per_day
    into price
    from T_EXEMPLAR e
    where e.exemplar_id = :new.exemplar_id;
    total_price_old := :new.total_price.price;
    end_d := :new.end_date;
    start_d := :new.start_date;
    if (total_price_old is null) then
        total_price_old := 0;
    end if;
    if ((end_d-start_d)*price != total_price_old) then
        :new.total_price := Price_Type((end_d-start_d)*price);
    end if;
end;
```

Trigger Properties

Trigger Fire	BEFORE
Trigger Events	Update
For Each Row	YES

Procedure Report

Procedure Name
SCOTT.p_Customer_Has_Num_Film

Procedure 'SCOTT.p_Customer_Has_Num_Film'

Caption	p_Customer_Has_Num_Film

```
AS
BEGIN
    SELECT count(*)
    INTO num
    FROM T_CUSTOMER c, T_BORROWING b, T_EXEMPLAR e, T_FILM f
    WHERE c.customer_id=cid
        and c.customer_id=b.customer_id
        and b.exemplar_id=e.exemplar_id
        and e.film_id=f.film_id;
END;
```

Procedure Properties

Procedure Arguments	cid IN integer, num OUT integer

Function Report

Function Name
SCOTT.f_Customer_Has_Num_Film

Function 'SCOTT.f_Customer_Has_Num_Film'

Caption	f_Customer_Has_Num_Film

```
IS
sol integer;
BEGIN
    p_Customer_Has_Num_Film(cid,sol);
    RETURN (sol);
END;
```

Function Properties

Function Arguments	cid IN integer
Datatype of the Return Value	integer

View Report

View Name
SCOTT.v_Customer_Has_Film

## View 'SCOTT.v_Customer_Has_Film'

Caption	Customer has film
View Attributes	c.name, c.address.city AS city, f.title, f.director
From	T_CUSTOMER AS c, T_BORROWING AS b, T_EXEMPLAR AS e, T_FILM AS f
Where	c.customer_id=b.customer_id and b.exemplar_id=e.exemplar_id and e.film_id=f.film_id

Select Settings

Distinct	YES

View Relationships

View Relationship Name	Alias	Parent Object	Child View
Customer rel	c	SCOTT.T_CUSTOMER	SCOTT.v_Customer_Has_Film
Borrowing rel	b	SCOTT.T_BORROWING	SCOTT.v_Customer_Has_Film
Exemplar rel	e	SCOTT.T_EXEMPLAR	SCOTT.v_Customer_Has_Film
Film rel	f	SCOTT.T_FILM	SCOTT.v_Customer_Has_Film
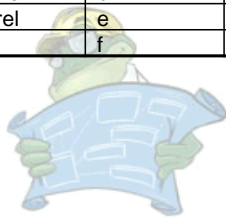
View Relationship Report

View Relationship Name	Alias	Parent Object	Child View
Borrowing rel	b	SCOTT.T_BORROWING	SCOTT.v_Customer_Has_Film
Customer rel	c	SCOTT.T_CUSTOMER	SCOTT.v_Customer_Has_Film
Exemplar rel	e	SCOTT.T_EXEMPLAR	SCOTT.v_Customer_Has_Film
Film rel	f	SCOTT.T_FILM	SCOTT.v_Customer_Has_Film

View Relationship Name 'Borrowing rel'

Caption	Borrowing rel
Alias	b
Parent Entity	SCOTT.T_BORROWING
Child View	SCOTT.v_Customer_Has_Film

View Relationship Name 'Customer rel'

Caption	Customer rel
Alias	c
Parent Entity	SCOTT.T_CUSTOMER
Child View	SCOTT.v_Customer_Has_Film

View Relationship Name 'Exemplar rel'

Caption	Exemplar rel
Alias	e
Parent Entity	SCOTT.T_EXEMPLAR
Child View	SCOTT.v_Customer_Has_Film

View Relationship Name 'Film rel'

Caption	Film rel
Alias	f
Parent Entity	SCOTT.T_FILM
Child View	SCOTT.v_Customer_Has_Film

Sequence Report

Sequence Name
SCOTT.SeqExemplar

Sequence 'SCOTT.SeqExemplar'

Increment By	1
Start With	1
Max Value	NOMAXVALUE
Min Value	NOMINVALUE
Cycle	NO
Cache	NOCACHE
Order	NO

User Report

User Name
SCOTT

User 'SCOTT'

Caption	SCOTT

Note Report

Note Name
All Items WS - information
Borrowing WS - information
Customer Rating WS - information
Ordering WS - information
Views WS - information

Note 'All Items WS - information'

```
Display notes:

- IE notation
- Customer and Customer Rating tables in special Category
- Indexes displayed
- Logical names displayed
- View and View relationships
```

Note 'Borrowing WS - information'

```
Display notes:

- Notation IDF1X
- Relation between entities Customer and Borrowing is not visible.
- Table Customer formatted
- Table Exemplar displayed twice (Two Shortcuts visible)
```

Note 'Customer Rating WS - information'

```
Display notes:

- IE notation
- Display level set to "Keys" in the Film entity.
- Graphical representation of keys in the Customer Rating entity
- Columns aligned in the Customer Rating entity
```

Note 'Ordering WS - information'

```
Display notes:

- IDF1X notation
- Graphical representation of keys
- Right angled lines
- Fully colored boxes
```

Note 'Views WS - information'

```
Display notes:

- View and view relationships
- Line from note to View
```

Statistic Information

Entities	8	**Entity Check Constraints**	1		
Attributes	30	**Attribute Check Constrains**	1		
Domains	1	**Domain Check Constrains**	0		
User Data Types	3				
Relationships	9	**Identifying**	4	**Non-identifying**	5
Indexes	1				
Keys	10	**Primary Keys**	8	**Alternate Keys**	2
Entity Triggers	2				
Views	1				
View Relationships	4				
View Triggers	0				
Procedures	1				
Functions	1				
Defaults	1				
Check Constraint Rules	0				
Synonyms	0				
Materialized Views	0				
Sequences	1				
Packages	0				
Tablespaces	0				
Directories	0				
Java Objects	0				
Users	1				
User Groups	0				
Notes	5				