**Skilapverkefni 1**

Tækniskolinn, 14-09-2017. Due 05-02-2018

BigHit Video Inc. wants to create an information system for online sales of movies in both DVD and videotape format. People will be allowed to register as customers of the online site and to update their stored information. Information must be maintained about customers’ shipping addresses, e-mail ad-dresses and credit cards. In a single sale, customers will be allowed to purchase any quantity of videos. The items in a single sale will be shipped to a single address and will have a single credit card charge a customer will be provided with a virtual shopping cart to store items to be purchased. As each item is selected, it is added to the shopping cart. When the customer finishes shopping, he will be directed to a checkout area where he can purchase all of the items in the shopping cart. At this time, payment and shipping information is entered. Once the sale is complete, the shopping cart will be deleted and the customer will be sent a receipt by e-mail.

1. Data analysis
2. Identify Entities, Attributes and constraints

|  |  |  |
| --- | --- | --- |
| **ENTITY** | **ATTRIBUTE** | **CONSTRAINTS** |
| 1.customer  2. sales  3. Shopping  4. Video tape  5. DvD | accountId  lastName  firstName  shippingAddresses  emailAddress  creditCards  Qty  Sale\_date  Charge\_card  movieID, price  movieID, price | Key  Not null  Multivalued composite with components name,  Street, city, state and zipcode  Multivalued composite with components type,  accountNumber, expiration,csvNo,type(DR/CR),cardcolour, |

1. Identify the Relationships

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Relationship Type** | **Entity Class** | **Entity Class** | **Cardinality Ratio** | **Attributes** |
| Purchase  Selected  Includes  Selctd into shopg crt | customer  customer  sales  movie | Sales  Shopping  Movie  shopping | One to one  One to one  One to many  Many to one | custCredit  custMail  movieID  movieID |

1. Data Modeling
2. Based on the information that you collected in the data dictionary, draw an ER (Entity Relationship) diagram that depicts all entities, strong entities, weak entities, relationships and cardinalities.
3. Draw an ERD Mapping of all entities in a logical schema and link the foreign keys that references the primary keys.
4. Use database normal forms to eliminate database redundancy and data anomalies.



1. Database creation
2. Create database called BigHit\_db in MYSQL.
3. Write SQl queries to insert some data in each table
4. Write SQl SELECT statement to generate records from each table.
5. CREATE DATABASE 0301865919\_BigHit\_db
6. USE 0301865919\_BigHit\_db;
7. CREATE TABLE CUSTOMER(
8. accountID int,
9. firstName varchar(10),
10. lastName varchar(10),
11. emailAddress varchar(25)
12. );
13. create table ShippingAddress(
14. cust\_acctID int,
15. street varchar(25),
16. city varchar(10),
17. zipcode int,
18. state varchar(10)
19. );
20. create table creditCards(
21. acctNo int(10),
22. cust\_acctID int(10),
23. csvNo int(3),
24. expiration int(10),
25. ctypeDR\_CR varchar(3),
26. cardcolour varchar(10)
27. );
28. create table sale (
29. Qty int(10),
30. saleDate varchar(10),
31. charge\_card int(10),
32. custcredit int(25),
33. movieID int(10),
34. custAddr varchar(25)
35. );
36. create table shopping\_cart(
37. custMail varchar(25),
38. movieID int(10)
39. );
40. create table DvD (
41. MovieID int(10),
42. price int(10)
43. );
44. create table video\_tape (
45. MovieID int(10),
46. price int(10)
47. );
48. insert into
49. CUSTOMER(firstName,accountID)
50. values
51. ("smith",0201784524);
52. insert into
53. ShippingAddress(city,zipcode)
54. values
55. ("reykjavik",115),
56. ("selfoss",201);
57. insert into
58. creditCards(csvNo,cardcolour,expiration)
59. values
60. (334,"red",12-03-2030),
61. (231,"blue",10-08-2024);
62. insert into
63. sale(Qty,saleDate)
64. values
65. (50,30-02-18);
66. insert into
67. Shopping\_cart(custMail,movieID)
68. values
69. ("ebass@gmail.com",111);
70. insert into
71. DvD(MovieID,price)
72. values
73. (123,400);
74. insert into
75. video\_tape(MovieID,price)
76. values
77. (321,500);
78. select firstName, accountID from CUSTOMER;
79. select city, zipcode from ShippingAddress;
80. select csvNo,cardcolour,expiration from creditCards;
81. select Qty,saleDate from sale;
82. select custMail,movieID from Shopping\_cart;
83. select MovieID,price from DvD;
84. select MovieID,price from video\_tape;

Note: The project need to be submitted in word or pdf format, including ER diagram images and the SQL queries.

Kennari: abdel