DBMS Report

The ∞ World (Gaming Store)

Kabeer Ahmed SE-19028

Rehan Mumtaz SE-19036

Abstract

TheInfinityWorld is the ecommerce website that provide the

easy excess to the world greatest consoles and games of the two main companies that are PlayStation and Xbox. Here user can see the features of the consoles of both companies. The Games are also available for the gamer with the proper detail, trailer and the screenshots of the gameplays of the games which include almost all the games new as well as old and also games that won Game of The Year Award and their nominees' games. This is very easy for user to purchase this thing of this website.

Introduction

The Scope of this project is to shrink the gap between the gamers and the market, improve and organize the whole process of buying, tracking and managing products for the customers. Provide a valuable shopping environment for both gamers and shopkeepers. Reduce manual payment processes, their errors by providing fully automated, a Reliable and secured payment transaction system.
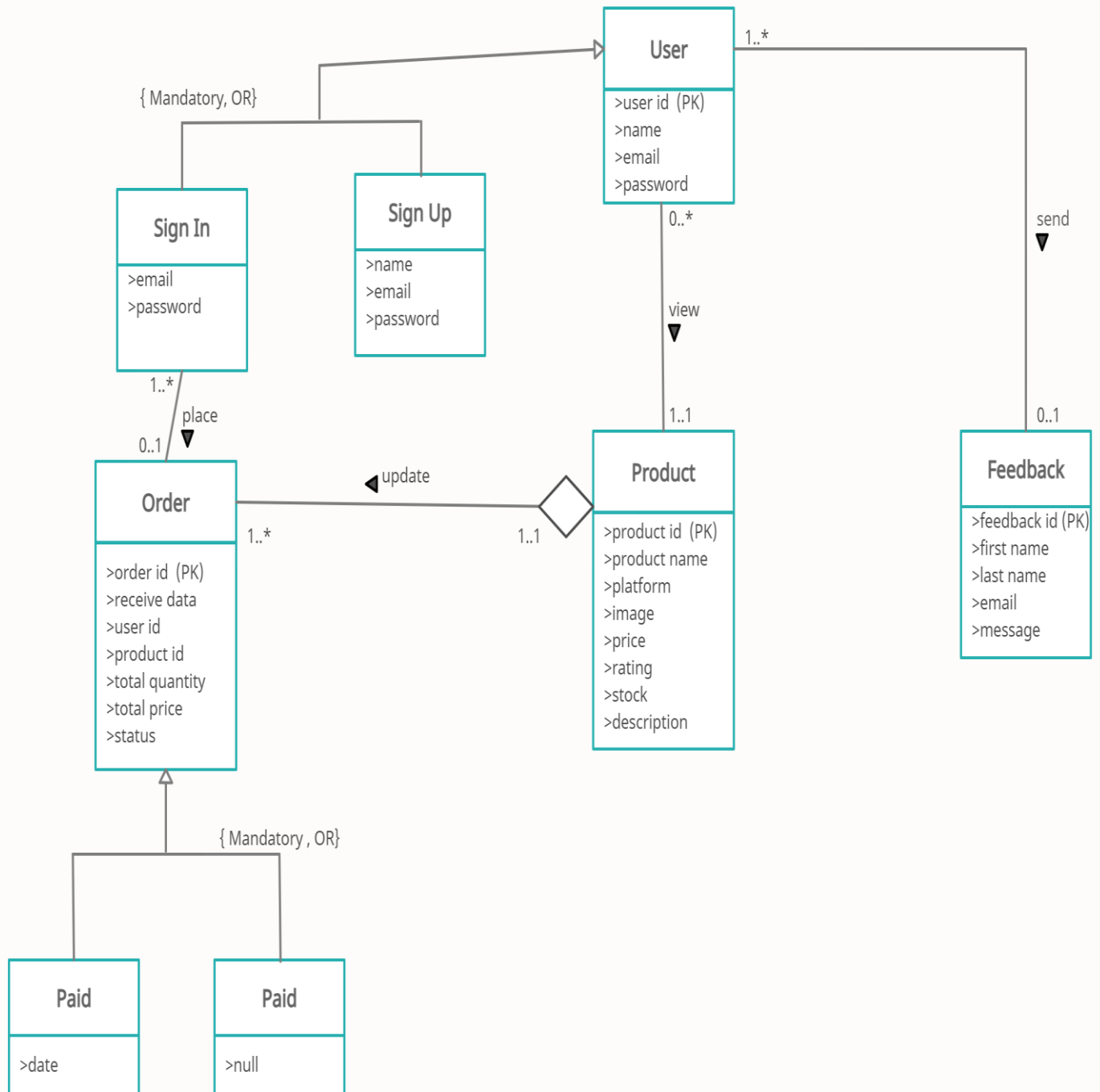
DOCUMENT PURPOSE:

This document provides Enhanced ER Diagram and Database about tables which are converted from de-normalized form to normalized form with the process of normalization which includes 1NF, 2NF, 3NF and BCNF. These normalization techniques will be applied to our smart E-commerce platform named as **TheInfinityWorld** Database.

- ✓ Smart E-Trading System is a platform for buying, selling and providing services related to electronic weighing machines and its components where one can buy weighing products with online payment or by requesting a quotation.

- ✓ System will provide complete functionality to user with authentication, security and add-to-cart option with online payment system.

- ✓ This website also contains an inquiry page where machine experts will provide users to fix their machine and provide solutions to some known errors

EER DIAGRAM

The Infinity World (Game Store)

User
- >user id (PK)
- >name
- >email
- >password

1..*

{ Mandatory, OR}

Sign In
- >email
- >password

Sign Up
- >name
- >email
- >password

1..*

place

0..1

0..*

view

1..1

Order
- >order id (PK)
- >receive data
- >user id
- >product id
- >total quantity
- >total price
- >status

1..*

update

1..1

Product
- >product id (PK)
- >product name
- >platform
- >image
- >price
- >rating
- >stock
- >description

send

0..1

Feedback
- >feedback id (PK)
- >first name
- >last name
- >email
- >message

{ Mandatory , OR}

Paid
- >date

Paid
- >null

Normalization

It is a process to remove redundancy in tables with the help of 1NF, 2NF, 3NF and BCNF. In our E-trading scenario we will apply normalization according to our tables.
Following are the tables in our E-trading database:

- ✓ User-info
- ✓ Products
- ✓ OrderTable
- ✓ feedbackTable

User-Info Table

✓ 1NF

It says that multivalued attributes should be removed from tables. The purpose of this normalization is to increase flexibility, data independence, and simplify the data language. This table is in 1NF form.

✓ 2NF

The table is already in 2NF because there is no partial dependency

✓ 3NF

The table is already in 3NF because there is no transitive dependency and no non-prime(not in primary and candidate) key attribute determine non-prime(not in primary and candidate) key attribute.

✓ BCNF

The table is already in BCNF.

+ Options

	uid	name	email	password	cpassword
☐ 🖉 Edit 🏗 Copy ⊖ Delete	101	Afsar	afs32@yahoo.com	$8743b52063cd84097a65d1633f5c74f5	$8743b52063cd84097a65d1633f5c74f5
☐ 🖉 Edit 🏗 Copy ⊖ Delete	102	rehan	rehan990@gmail.com	$45545452063cd84097a65d1633f74f5	$45545452063cd84097a65d1633f74f5
☐ 🖉 Edit 🏗 Copy ⊖ Delete	103	rehmaann	reh90@gmail.com	$997979797984097a65d1633f587878	$997979797984097a65d1633f587878

Functional Dependencies

uId->name,email,password,cpassword

name->uid, email, password,cpassword

uId,name-> email,password,cpassword

uId,email->name, password,cpassword

SAMPLE QUERIES

INSERT

INSERT INTO ` signup-user `(`name`, `email`) VALUES ('maya`,`shutytrt@yahoo.coom`)

DELETE

DELETE FROM `signup-user` WHERE uId=103

UPDATE

UPDATE ` signup-user ` SET `name`='HELLO',`email`='shutytrt@yahoo.coom' WHERE uId=101

Feedback Table

✓ 1NF

It says that multivalued attributes should be removed from tables. The purpose of this normalization is to increase flexibility, data independence, and simplify the data language. This table is in 1NF form.

✓ 2NF

The table is already in 2NF because there is no partial dependency

✓ 3NF

The table is already in 3NF because there is no transitive dependency and no non-prime(not in primary and candidate) key attribute determine non-prime(not in primary and candidate) key attribute.

✓ BCNF

The table is already in BCNF.

+ Options

	fId	fname	lname	email	message
☐ ✏️ Edit ⧉ Copy ⊖ Delete	1	ahme	sarf	ah32@gmail.com	hello dear
☐ ✏️ Edit ⧉ Copy ⊖ Delete	2	hammad	nazim	ytu002@gmail.com	Can Anyone help me out there??

↑ ☐ Check all   With selected: ✏️ Edit   ⧉ Copy   ⊖ Delete   🖼️ Export

Functional Dependencies

fId->name,email, message

fname,lname->fid, email, message

fId,fname,lname-> email, message

fId,email->fname,lname,message

SAMPLE QUERIES

INSERT

INSERT INTO ` feedback`(`name`, `lname`) VALUES ('maya`,`taya`)

DELETE

DELETE FROM ` feedback ` WHERE fid=02

UPDATE

UPDATE `feedback` SET `fname`='HELLO' WHERE fId=01

Product Table

✓ 1NF

It says that multivalued attributes should be removed from tables. The purpose of this normalization is to increase flexibility, data independence, and simplify the data language. This table is in 1NF form.

	pid	pname	coverImage	price	rating	description	inStock
☐ 🖊 Edit 🗎 Copy ⊖ Delete	1001	Metro Exodus	https://mega00.blob.core.windows.net/gamesimages/Metro Exodus-ps-cover.jpg	1200	4	Metro Exodus is a first-person shooter video game developed by 4A Games and published by Deep Silver. It is the third installment in the Metro video game trilogy based on Dmitry Glukhovskys novels, following the events of Metro 2033 and Metro: Last Light.	10
☐ 🖊 Edit 🗎 Copy ⊖ Delete	1002	Resident Evil V	https://mega00.blob.core.windows.net/gamesimages/Resident Evil Village-cover-PS.jpg	2000	5	Resident Evil Village is a first-person survival horror game developed and published by Capcom. The sequel to Resident Evil 7 Biohazard, players control Ethan Winters, who is searching for his kidnapped child.	8
☐ 🖊 Edit 🗎 Copy ⊖ Delete	2001	Metro Exodus	https://mega00.blob.core.windows.net/gamesimages/Metro Exodus-XBOX-cover.jpg	1200	4	Metro Exodus is a first-person shooter video game developed by 4A Games and published by Deep Silver. It is the third installment in the Metro video game trilogy based on Dmitry Glukhovskys novels, following the events of Metro 2033 and Metro: Last Light.	4
☐ 🖊 Edit 🗎 Copy ⊖ Delete	2002	Resident Evil V	https://mega00.blob.core.windows.net/gamesimages/Resident Evil Village-cover-xbox.jpg	2000	5	Resident Evil Village is a first-person survival horror game developed and published by Capcom. The sequel to Resident Evil 7 Biohazard, players control Ethan Winters, who is searching for his kidnapped child.	5

The above table is in first normal form. In order to convert it into 2NF (Second Normal Form), we will first find the functional dependencies.

Functional Dependencies
(pId,pname) => coverImage, price, description,inStock,rating (primary key)

pId => coverImage (partial dependency)

pname => rating,description,price (partial dependency)

✓ 2NF

To convert 1NF to 2NF, we have to remove the partial dependencies from the above table which will convert the above table into the following 3 tables:

- ❖ productInfo(**pId**, pname , inStock)
- ❖ productCover(**pId**,coverImage)
- ❖ productDetail(**pname**, rating,description,price)

productInfo

pId	Pname	inStock
1001	Metro Exodus	4
1002	Resident Evil V	5
2001	Metro Exodus	4
2002	Resident Evil V	5

productCover

pId	coverImage
1001	https://mega00.blob.core.windows.net/gamesimages/Metro Exodus-ps-cover.jpg
1002	https://mega00.blob.core.windows.net/gamesimages/Resident Evil Village-cover-PS.jpg
2001	https://mega00.blob.core.windows.net/gamesimages/Metro Exodus-XBOX-cover.jpg
2002	https://mega00.blob.core.windows.net/gamesimages/Resident Evil Village-cover-xbox.jpg

productDetails

pname	Rating	price	description
Metro Exodus	4	1200	PS-Metro Exodus is a first-person shooter video game developed by 4A Games and published by Deep Silver. It is the …
Resident Evil V	5	2000	PS - Resident Evil Village is a first-person survival horror game developed and …
Metro Exodus	4	1200	XBOX-Metro Exodus is a first-person shooter video game developed by 4A Games and published by Deep Silver. It is the …
Resident Evil V	5	2000	XBOX - Resident Evil Village is a first-person survival horror game developed and …

✓ 3NF

The table is already in 3NF because there is no transitive dependency and no non-prime(not in primary and candidate) key attribute determine non-prime(not in primary and candidate) key attribute.

✓ BCNF

The table is already in BCNF.

OrderTable

✓ 1NF

It says that multivalued attributes should be removed from tables. The purpose of this normalization is to increase flexibility, data independence, and simplify the data language. This table is in 1NF form.

The above table is in first normal form. In order to convert it into 2NF (Second Normal Form), we will first find the functional dependencies.

Functional Dependencies

(orderId,uId) => username, address,pId , price,date(primary key)

uId => username,address (partial dependency)

orderId => date (partial dependency)

pId => price (transitive dependency)

✓ 2NF

To convert 1NF to 2NF, we have to remove the partial dependencies from the above table which will convert the above table into the following 3 tables:

- ❖ orderdet(**orderId ,** uld, pId , price)
- ❖ orderAddress(**uld ,** username,address)
- ❖ orderDate(**orderId ,** date)

orderdet

orderId	uId	pId	Price
5001	101	1001	1200
5002	102	2001	4500
5003	103	2002	4200
5004	102	1001	1200

orderAddress

uId	Username	Address
101	Rehan	4-C block10 KHi
102	Mehran	11C Area-51 USA
103	Rehman	40A block 74 nazimabad Khi
102	Mehran	11C Area-51 USA

orderDate

orderId	Date
5001	2021-08-11
5002	2021-05-25
5003	2021-08-01
5004	2021-07-12

✓ 3NF

In order to convert above tables into 3NF, we have to remove transitive dependency. Removing this would break Property table into the following 2 tables:

❖ orderTitle(**orderId** . uId, pId)
❖ orderPrice (**pId** , price)

orderTitle

orderId	uId	pId
5001	101	1001
5002	102	2001
5003	103	2002
5004	102	1001

orderPrice

OrderId	Price
5001	1200
5002	4500
5003	4200
5004	1200

✓ BCNF

The table is already in BCNF.