

## Report for E-Commerce website Database management system



International University of Business  
Agriculture and Technology

Final Report Writing

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Course Name: Database Management System Lab

Prepared For

Toyeer-E-Ferdous

Senior lecturer, Department of Computer Science and Engineering

Prepared By:

Serial	Name	ID
04	Md.Al-Amin	19303055
03	Saida Binte Saifuddin Surave	19303041
01	Md.Rashel Khan	18103300
11	Md Salauddin	20103164
37	Abdus Salam	20203056

### Summary of the report:

The ultimate goal of making this report to implement the idea of Database Management System that we have. We chose our topic "E-Commerce website database management system". The E-commerce sector is very big, we tried to implement our idea in this report and tried to make something different and challenging. The report is showing us the advance diagrams and quarry technique. Our data is 100% original and analytical. From this report anyone can gain knowledge about E-Commerce database and also can implement their ideas by updating the report. Though we are publishing the report on github. Also we will try to publish the report on newspapers.

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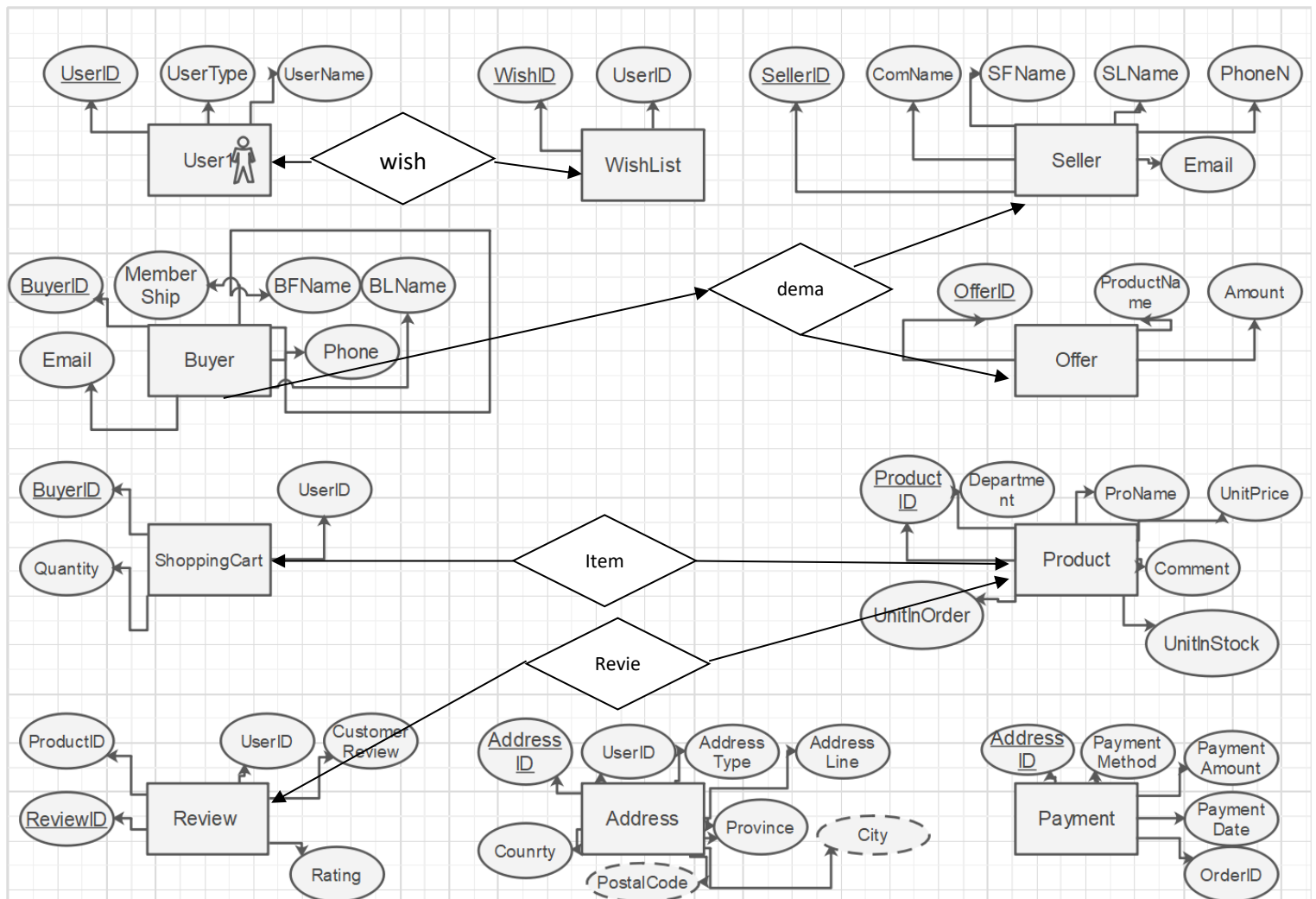
**Introduction:**

This report is for “E-Commerce” web application database management system. In this particular report we are going to discuss about our project and its ultimate goals. An E-commerce database building is always challenging because here have to input many sub-databases (Table) for managing all thing. Our database is mainly focused on customer services for e-commerce website. How they manage everything for providing best services to their customers.

**Why the report is useful:**

Now-a-days e-commerce websites are very new normal all over the country. Maximum educated people use e-commerce sites for easy shopping and discount. But most of the people don't know how the website is running or how the company manage all the data. The student can be beneficial by reading the report. As the report is open for everyone, one can update the report and also can gather knowledge. The report is also telling about the ER diagram, Use-case-diagram, UML diagram and many advance analytical things. So, this report will also give the readers knowledge about these advance data management procedures.

## ER Diagram for “E-Commerce website database management system”:



### ER DIAGRAM (Entities, attributes, types of attributes, relationship):

This Entity relationship diagram shows us the over-all view of our project like a template. Here we took the tables as entity and the elements of the table are acting as attributes.

For example: The “Buyer” table is an entity and the table columns are the attributes. Like as “BuyerID”, “MemberShip”, “Email” and other columns.

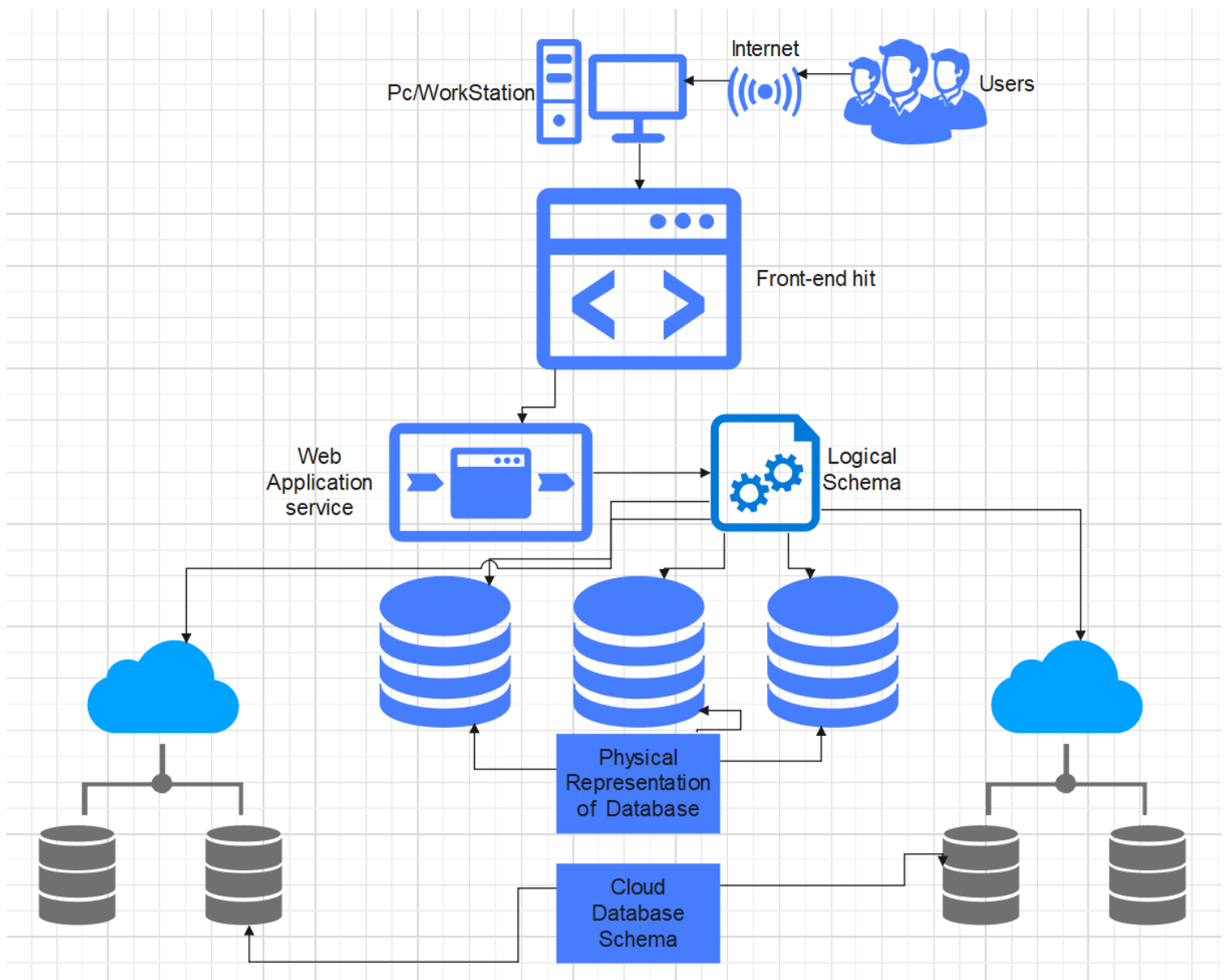
The diagram is designed such a way that a one can easily understand the over-all project or database.

The entities are connected with each other in many relationships. For example: “Buyer”, “Seller” and “Offer” these three entities are connected with a relation called “Demand”. The

reason behind this name is, the “Seller” will understand the “Buyer” s demand and give “Offer” s to that particular product.

We have derived attributes like, “PostalCode” & “City”. Form the “Province” name we can know these attributes.

### Database clint to server connection:



**Fig: Database schema for E-commerce website (Our project based)**

## Database schema:

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	UserID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	USER_TYPE	varchar(20)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	UserName	varchar(30)	utf8mb4_general_ci		No	None

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	AddressID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	UserID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	Address_Type	varchar(20)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 4	AddressLine1	varchar(50)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 5	City	varchar(50)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 6	Province	varchar(50)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 7	Country	varchar(50)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 8	PostalCode	varchar(10)	utf8mb4_general_ci		Yes	NULL

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	OfferID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	ProductID	varchar(8)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 3	OfferAmount	varchar(8)	utf8mb4_general_ci		Yes	NULL

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	ProductID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	Department	varchar(50)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	ProductName	varchar(50)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 4	UnitPrice	varchar(100)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 5	ProductDescription	varchar(255)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 6	UnitsInStock	int(11)			Yes	NULL
<input type="checkbox"/> 7	UnitsInOrder	int(11)			Yes	NULL

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	SellerID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	CompanyName	varchar(50)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	SellerFirstName	varchar(50)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 4	SellerLastName	varchar(50)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 5	PhoneNumber	varchar(15)	utf8mb4_general_ci		No	xxx-xxx-xxxx
<input type="checkbox"/> 6	Email	varchar(50)	utf8mb4_general_ci		No	None

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	BuyerID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	Membership	varchar(39)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	BuyerFirstName	varchar(50)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 4	BuyerLastName	varchar(50)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 5	PhoneNumber	varchar(15)	utf8mb4_general_ci		No	xxx-xxx-xxxx
<input type="checkbox"/> 6	Email	varchar(50)	utf8mb4_general_ci		No	None

Table structure

Relation view

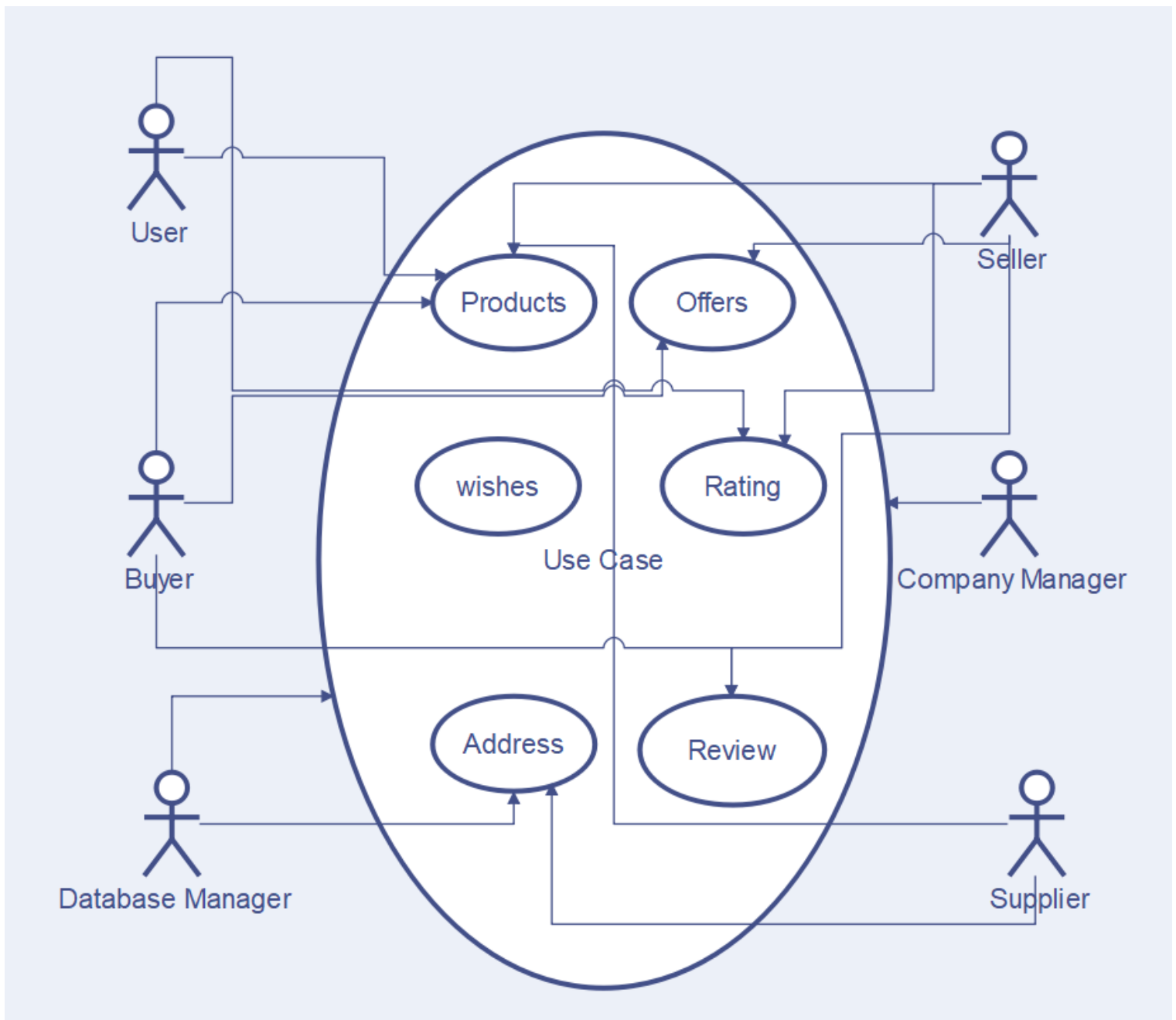
#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	PaymentID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	OrderID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	Payment_Method	varchar(20)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 4	PaymentAmount	varchar(30)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 5	PaymentDate	varchar(20)	utf8mb4_general_ci		Yes	NULL

Table structure

Relation view

#	Name	Type	Collation	Attributes	Null	Default
<input type="checkbox"/> 1	ReviewID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 2	ProductID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 3	UserID	varchar(8)	utf8mb4_general_ci		No	None
<input type="checkbox"/> 4	CustomerReview	varchar(100)	utf8mb4_general_ci		Yes	NULL
<input type="checkbox"/> 5	Rating	varchar(30)	utf8mb4_general_ci		No	None

## UML Use-Case-Diagram:



**Fig: Use-Case-Diagram for E-Commerce website (Our project based)**

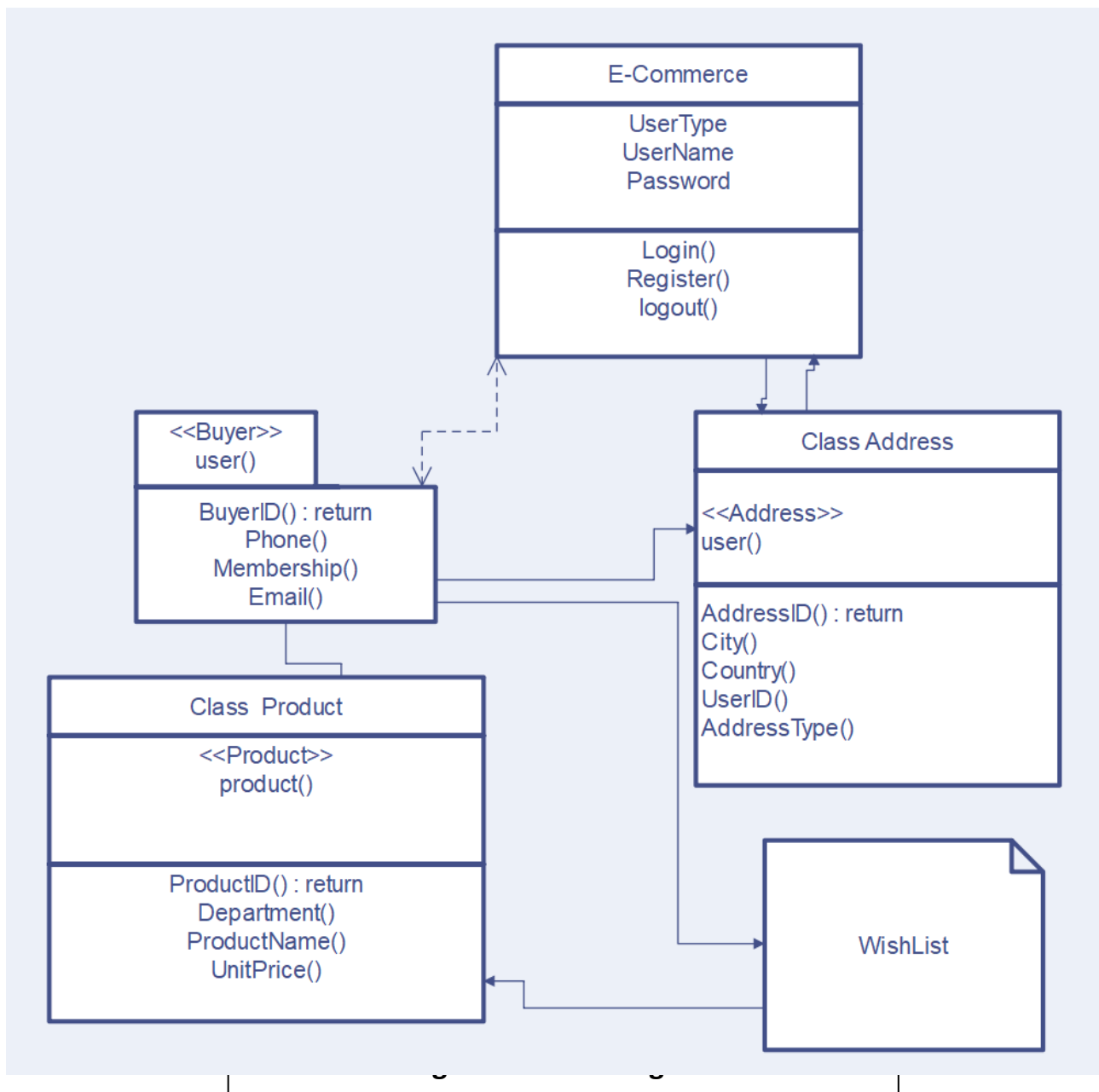
The use case diagram shows us that, which entity will access which attribute in case of use.

For example:



- 1.The “Buyer” s can access the “Rating”, “Product”.
- 2.The “Database Manager” can access the full management system.
- 3.The suppliers can access the address.
- 4.The company manager can access the full use case of the particular company.

### UML Class Diagram:



## Relational Algebra:

Buyer			WishList	
(Name	ID	M_Level)	(WId	Items)
-----			-----	
Ram	14	Gold	w1	T-shirt
Sona	15	silver	w2	Watch
kim	20	Platinum		

Buyer X WishList				
Name	ID	M_Level	WId	Items
-----				
Ram	14	M	w1	T-shirt
Ram	15	M	w2	Watch
Sona	16	F	w1	Pant
Sona	19	F	w3	Laptop
Kim	20	M	w10	Tv
Kim	25	M	w15	Book

**Fig: Relational Algebra**

We can use all properties and symbol of relational algebra to our database.

Some symbols are:

Selection	$\sigma$	
Projection	$\pi$	
Renaming	$\rho$	
Union	$\cup$	
Intersection	$\cap$	
Difference	$-$	
Cartesian product	$\times$	
Join	$\bowtie$	
Logical AND	$\wedge$	
Logical OR	$\vee$	[Fig: of relational algebra]
Logical NOT	$\sim$	

[Fig: Symbols of relational algebra]

**Normalization for some part of our database:**

ProductID	OrderID	UserID	Price	Address
pd89	or54	156	150/=	Uttara
Pd78	Or98	134	500/=	Mirpur
Pd67	Or56	178	900/=	Badda
Pd78	Or37	168	259/=	Dohar

## ACID for “Payment” part:

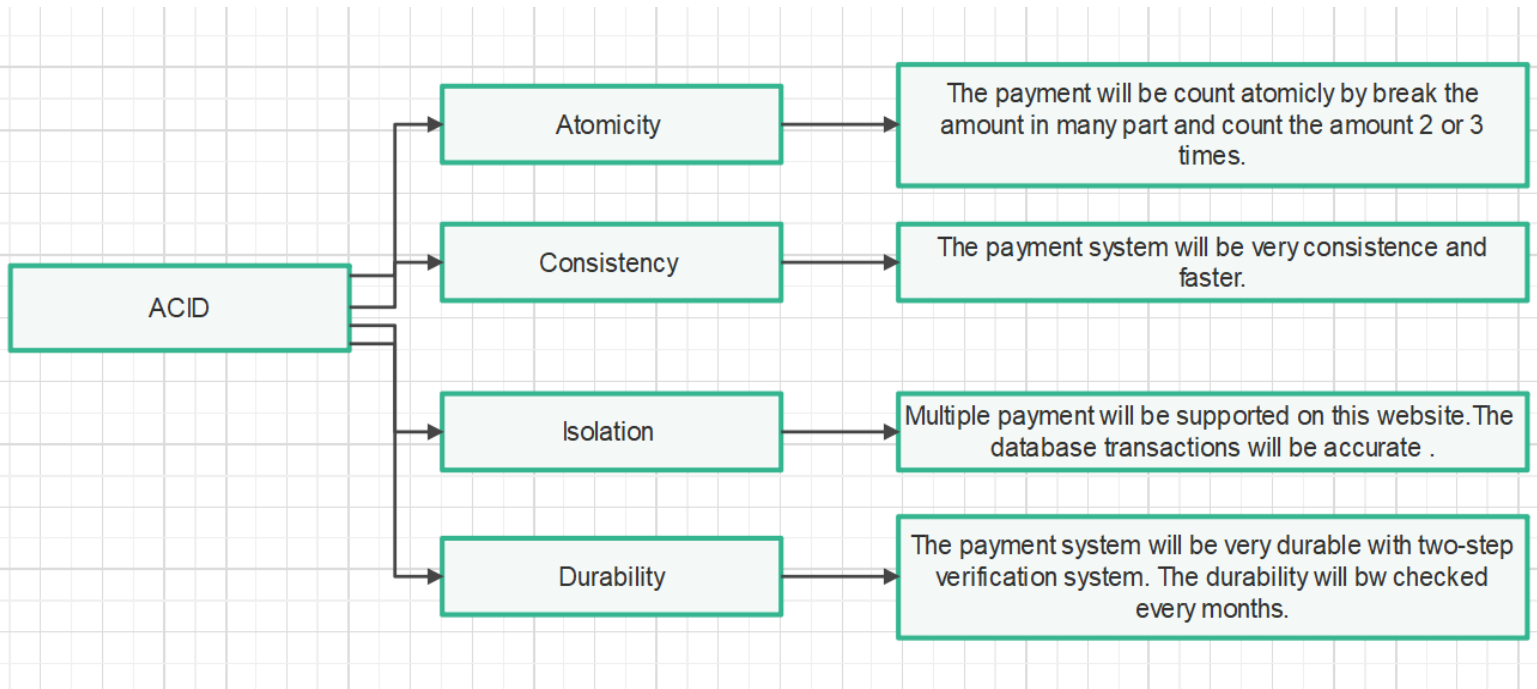
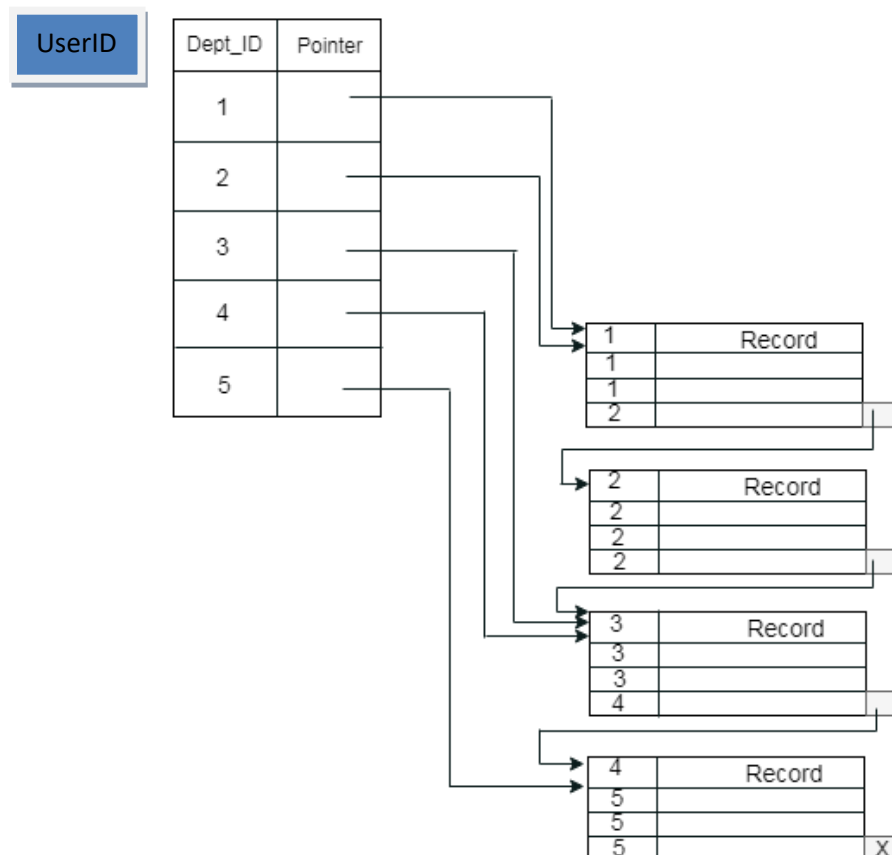


Fig: ACID for E-Commerce (Our project based)

## Indexing:



**Judgment:**

After doing all these works, we can understand that an E-Commerce website database management system is very hard job to maintain all data. The employee needs to be very careful in every step of inserting or moving data. The work was very tough to be done by this group tried to make this report as applicable for publishing in newspapers and social sites. All the data are original and no internet source used to complete the project report. The full report is done that way, which topics was covered on our (Database management system and lab) courses. All the diagram and analytical things are done originally using many advance softwares. The tables that are used in the report is done by deep analysis and hard work. Hope this report will help other students to update their knowledge about E-Commerce database management system and also, they can update the report from this link.

**Conclusion:**

In the conclusion part we want to say that, without knowing about database nothing is possible in IT field. E-Commerce website database is very hard to display in one report. But we tried our best to make this report more informative and useful.