

Normalization

After inspecting the activity diagram of the website, we figured that following data must be stored into the database.

User_Id	F_Name	L_Name	DOB	Phone	Email	Country
City	State	Po_Code	Addr1	Addr2	Card_Type	Card_Num
Card_Exp	Card_Sec	Balance	Password	Pro_Id	Title	Icon
Price	Description	Snap_Id	Snapshot	Fea_Id	Feature	Platform
Category	Tag_Id	Tag	F_Size	F_Link	Date_Add	Rating
Ch_Log	Tool_Id	Tool	Com_Id	Title	Text	Com_Date
Rating	Up_Vote	Dw_Vote	Bank_Id	B_Name	B_Country	Swift
Acc_No	Rec_Name	Rec_Typ	R_Country	R_City	R_Addr	Trnf_Id
Process	Amount	Date_Tim	Details	Trnsc_Id	Sel_Id	Buy_Id
Date_Tim						

As we can see here, the attributes relating to screenshots, tags, tools, features are making the data more redundant as they offer multiple values. So first, let's make them separate and provide those primary keys which will be added as foreign keys in the main table:

1st Normal Form

Main Table:

User_Id (pk)	F_Name	L_Name	DOB	Phone	Email	Country
City	State	Po_Code	Addr1	Addr2	Card_Type	Card_Num
Card_Exp	Card_Sec	Balance	Password	Pro_Id (pk)	Title	Icon
Price	Description	Platform	Category	F_Size	F_Link	Date_Add
Rating	Ch_Log	Com_Id (pk)	Title	Text	Com_Date	Rating
Up_Vote	Dw_Vote	Bank_Id (pk)	B_Name	B_Country	Swift	Acc_No
Rec_Name	Rec_Typ	R_Country	R_City	R_Addr	Trnf_Id (pk)	Process

Amount	Date_Tim	Details	Trnsc_Id (pk)	Sel_Id	Buy_Id	Date_Tim
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Snapshot Table:

Snap_Id(pk)	Snapshot
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Tag Table:

Tag_Id(pk)	Tag
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Tool Table:

Tool_Id(pk)	Tool
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Feature Table:

Fea_Id(pk)	Feature
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Now in the main table we see, product attributes doesn't depend on other primary keys except Pid. Same goes for Bank, Comment, User, Transfer and Transaction attributes. So to be in 2NF, let's separate them. If there's one to many relation between two tables, then putting pk of one as fk in manys' table:

2nd Normal Form

User Table:

User_Id(pk)	F_Name	L_Name	DOB	Phone	Email	Country
City	State	Po_Code	Addr1	Addr2	Card_Type	Card_Num
Card_Exp	Card_Sec	Balance	Password			

Project Table:

Pro_Id(pk)	Title	Icon	Price	Description	Platform
Category	F_Size	Link	Date_Add	Rating	Ch_Log
Com_Id (fk)	Snap_Id(fk)	Tag_Id (fk)	Tool_Id (fk)	Fea_Id (fk)	User_Id (fk)

Comment Table:

Com_Id(pk)	Title	Text	Com_Date
Rating	User_Id (fk)	Up_Vote	Dw_Vote

Bank Table:

Bank_Id(pk)	B_Country	B_Name	Swift
Acc_No	R_Name	R_Type	R_Country
R_City	R_Addr	User_Id (fk)	

Transaction Table:

Trnsc_Id (pk)	Sel_Id (fk)	Buy_Id (fk)	Date_Time
Pro_Id (fk)	User_Id (fk)		

Transfer Table:

Trnf_Id (pk)	User_Id (fk)	Process	Amount	Date_Time	Details
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Snapshot Table:

Snap_Id(pk)	Snapshot
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Tag Table:

Tag_Id(pk)	Tag
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Tool Table:

Tool_Id(pk)	Tool
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Feature Table:

Fea_Id(pk)	Feature
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3rd Normal Form

User Table:

User_Id(pk)	F_Name	L_Name	DOB	Phone	Email	Country
City	State	Po_Code	Addr1	Addr2	Balance	Password

Admin Table:

User_Name(pk)	Password	Details
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Message Table:

Mess_Id(pk)	Admin (fk)	User_Id(fk)	Text	File	Date_Time	Mess_Type
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Card Table:

Card_Type	Card_Num (pk)	Card_Exp	Card_Sec	User_Id (fk)
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Bank Table:

Bank_Id(pk)	B_Country	B_Name	User_Id (fk)	Swift	
Acc_No	R_Name	R_Type	R_Country	R_City	R_Addr

Project Table:

Pro_Id(pk)	Title	Icon	Price	Description	Plat_Id (fk)
Cat_Id (fk)	F_Size	Link	Date_Add	Rating	Ch_Log
Discount	User_Id(fk)				

Comment Table:

Com_Id(pk)	Title	Text	Com_Date	
Rating	User_Id (fk)	Up_Vote	Dw_Vote	Pro_Id(fk)

Transaction Table:

Trnsc_Id (pk)	Sel_Id (fk)	Buy_Id (fk)	Date_Time
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Pro_Id (fk)	Amount		
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Tranfer Table:

Trnf_Id (pk)	User_Id (fk)	Process	Amount	Date_Time	Details
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Snapshot Table:

Snap_Id(pk)	Snapshot	Pro_Id(fk)
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Tag Table:

Tag_Id(pk)	Tag
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Tag_Project Table:

Tag_Id(fk)	Pro_Id(fk)
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Tool Table:

Tool_Id(pk)	Tool
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Tool_Project Table:

Tool_Id(fk)	Pro_Id(fk)
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Feature Table:

Fea_Id(pk)	Pro_Id(fk)	Feature
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Platform Table:

Plat_Id(pk)	Platform
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Category Table:

Cat_Id(pk)	Category
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