

Accounting System

Group ID: 5

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Lab: Lab 9

Functional dependencies, identify the normal form and normalize the relations if they are not in BCNF form.

1. RealAccount

RealAccount		
FK [Not Null]	<u>AccountID</u>	varchar

Candidate Key:-

{ AccountID }

Functional Dependencies:-

1. AccountID → AccountID

Verify condition of normal forms:-

The table has only one column hence it satisfies BCNF form.

2. NominalAccount

NominalAccount		
FK [Not Null]	<u>AccountID</u>	varchar

Candidate Key:-

{ AccountID }

Functional Dependencies:-

1. AccountID \rightarrow AccountID

Verify condition of normal forms:-

The table has only one column hence it satisfies BCNF form.

3. PersonalAccount_Email

PersonalAccount_Email		
FK [Not Null]	<u>AccountID</u>	varchar
	<u>EmailAddress</u>	Varchar

Candidate Key:-

{ AccountID, EmailAddress }

Functional Dependencies:-

1. { AccountID, EmailAddress } \rightarrow { AccountID, EmailAddress }

Verifying Condition of different Normal Forms:-

1. The table has no multivalued attribute hence it satisfies 1 NF condition.
2. The LHS of the above functional dependencies, it is a candidate key. Hence it satisfies 2nd NF condition.
3. The LHS of the above functional dependencies, it is a super key. Hence it satisfies 3rd NF condition.
4. The LHS of the above functional dependencies, it is a super key. Hence it satisfies the BCNF condition.

4. PersonalAccount_Contact

PersonalAccount_ContactNumber		
FK [Not Null]	AccountID	varchar
	ContactNumber	numeric

Candidate Key:-

{ ContactNumber }

Functional Dependencies:-

2. { ContactNumber } → { AccountID }

Verifying Condition of different Normal Forms:-

1. The table has no multivalued attribute hence it satisfies 1 NF condition.
2. The LHS of the above functional dependencies, it is a candidate key. Hence it satisfies 2nd NF condition.
3. The LHS of the above functional dependencies, it is a super key. Hence it satisfies 3rd NF condition.
4. The LHS of the above functional dependencies, it is a super key. Hence it satisfies the BCNF condition.

5. AccountGroup

Account Group		
PK [Not Null]	<u>AccountGroupID</u>	varchar
	Header	boolean
	ShowIn	enum
	Name	Varchar
FK [Not Null]	CompanyID	varchar

Candidate key:-

1. { AccountGroupID }

Functional dependencies:-

1. { AccountGroupID } \rightarrow { AccountGroupID, Header, ShowIn, Name, CompanyID }

Verify normal form conditions:-

1. The table has no multivalued attribute hence it satisfies 1 NF condition.
2. The LHS of the above functional dependencies, it is a candidate key. Hence it satisfies 2nd NF condition.
3. The LHS of the above functional dependencies, it is a super key. Hence it satisfies 3rd NF condition.
4. The LHS of the above functional dependencies, it is a super key. Hence it satisfies the BCNF condition.