A N D Technologies (P) Ltd.

CS603C - Late Spring

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BHARGAV LAKKUR KUSHA KUMAR

ABOUT US

A N D Technologies is an E Commerce Solutions Company providing end to end solutions from customer of any place. We deal with variety of products used for designing products and some end products too.

We are well positioned and equipped to help any business or individual realize great improvement in their ability to use the IT tools that help you perform their daily tasks.We Design and develop embedded products based on Intel Microprocessors, Memory and Networking products , Texas Instruments ARM, DSP and analog products. We have focused on domains like Wireless, Infotainment, Consumer Electronics, Digital signage, Industrial Automation, Medical and Smart Grid related products.

ATTRIBUTE DOMAIN LISTING

Table payslip:

ATTRIBUTES	DATATYPES
payslipID	SMALLINT
categoryName	VARCHAR(2)
basePay	DECIMAL
Allowances	DECIMAL

Primary Key: payslipID

Foreign Key: none

Table department:

ATTRIBUTES	DATATYPES
deptID	SMALLINT
deptName	VARCHAR2(20)

Primary Key: deptID

Foreign Key: none

Table employee:

ATTRIBUTES	DATATYPES
empID	SMALLINT
empFName	VARCHAR2(20)
empLName	VARCHAR2(20)
Designation	VARCHAR2(15)
dateOfJoining	DATE
DOB	DATE
empStatus	CHAR(1)
deptID	SMALLINT
payslipID	SMALLINT

Primary Key: empID

Foreign Key: deptID, payslipID

Table membershipPlan:

ATTRIBUTES	DATATYPES
planNum	SMALLINT
planName	VARCHAR2(20)
planDesc	VARCHAR2(75)

Primary Key: planNum

Foreign Key: none

Table vendor:

ATTRIBUTES	DATATYPES
vendorID	SMALLINT
vendorName	VARCHAR2(20)
vendorAdd	VARCHAR2(130)
vendorPhone	CHAR(10)

Primary Key: vendorID

Foreign Key: none

Table inventoryCategory:

ATTRIBUTES	DATATYPES
categoryID	SMALLINT
categoryName	VARCHAR2(20)

Primary Key: categoryID

Foreign Key: none

Table shippingCompany:

ATTRIBUTES	DATATYPES
shipCompID	SMALLINT
shipCompName	VARCHAR2(20)

Primary Key: shipCompID

Foreign Key: none

Table customer:

ATTRIBUTES	DATATYPES
cusID	SMALLINT
cusName	VARCHAR2(20)
cusAdd	VARCHAR2(130)
cusPhone	CHAR(10)

Primary Key: cusID

Foreign Key: none

Table planExpiry:

ATTRIBUTES	DATATYPES
planNum	SMALLINT
cusID	SMALLINT
expirationDate	DATE

Primary Key: planNum+cusID

Foreign Key: planNum, cusID

Table invoice:

ATTRIBUTES	DATATYPES
invoiceNum	SMALLINT
invoiceDate	DATE
invoiceShippedDate	DATE
payMethod	VARCHAR2(12)
paymentStatus	VARCHAR2(12)
shippingSpeed	VARCHAR2(12)
cusID	SMALLINT

Primary Key: invoiceNum

Foreign Key: cusID

Table trackingDetails:

ATTRIBUTES	DATATYPES
invoiceID	SMALLINT
shipComID	SMALLINT
trackingNum	CHAR(12)

Primary Key: invoiceID+shipComID

Foreign Key: invoiceID, shipComID

Table products:

ATTRIBUTES	DATATYPES
prodID	SMALLINT
prodName	VARCHAR2(15)
prodDesc	VARCHAR2(75)
Quantity	SMALLINT
Cost	NUMBER(5,2)
expectedIncome	Derived column
categoryID	SMALLINT

Primary Key: prodID

Foreign Key: categoryID

Table line:

ATTRIBUTES	DATATYPES
prodId	SMALLINT
invoiceID	SMALLINT
Quantity	SMALLINT
Cost	NUMBER(5,2)

Primary Key: prodID+invoiceID

Foreign Key: prodID, invoiceID

Table purchaseOrder:

ATTRIBUTES	DATATYPES
vendorID	SMALLINT
prodID	SMALLINT
Quantity	SMALLINT
Cost	Number(5,2)
totalCost	Derived column

Primary Key: prodId+vendorID

Foreign Key: prodID, vendorID

ATTRIBUTES-USERVIEW MATRIX

Attributes	User View 1	User View 2	User View 3	User View 4	User View 5	User View 6	User View 7
CusID		Y	Y	Y		Y	
CusName		Y	Y	Y		Y	
CusAdd		Y	Y	Y		Y	
CusPhone		Y		Y		Y	
EmpID	Y						
EmpFName	Y						
EmpLName	Y						
Date of joining	Y						
Designation	Y						
DOB	Y						
DeptID	Y						
DeptName	Y						
PaySlipID	Y						
CategoryName	Y						
Base Pay	Y						
Allowances	Y						
ProdID		Y		Y	Y		Y
ProdName		Y			Y		Y
ProdDesc		Y			Y		Y
Quantity (Hand)							Y
Cost (Selling)		Y					Y
TotalExpecInco							Y
CategoryID(Pro)							Y
CategoryName							Y

InvoiceID		Y		Y		Y
InvoiceDate		Y		Y		
InvoiceShipDat		Y		Y		
payMethod		Y		Y		
PaymentStatus		Y		Y		
ShippingSpeed		Y		Y		Y
VendorID					Y	
VendorName					Y	
VendorAdd					Y	
VendorPhone					Y	
ShipCompID						Y
ShipCompName						Y
planNum			Y			
planName			Y			
planDesc			Y			
Quantity (Sold)		Y		Y		
Cost(Prod*Sold)		Y		Y		
Expirat.Date			Y			
Quantity (Pur)					Y	
Cost (Buy Cost)					Y	
Total Cost(Q*C)					Y	
TrackingNum						Y

USER VIEWS

User View 1: Employee Pay Slip

Department Number: 1

Department Name: Finance Department

Pay Slip ID	Category Name
2	Manager

Employee ID	First Name	Last Name	Design.	DOB	DOJ	Salary	Allowance
1267	Rohan	Bhadru	Finance Manager	04-DEC-1991	12-APR-2013	$250K	$35K

User View 2: Invoice

Invoice ID: 4125

Invoice Date: 19-MAY-2009

Ship Date: 24-MAY-2009

Pay Method: COD

Pay Status: Pending

Ship Speed: Standard

Customer ID	Customer Name	Customer Address	Contact Number
1007	Ramakrishna	1007,Broadway Ave,Orange,CT 06608	2030071007

Product ID	Product Name	Product Description	Quantity	Cost	Total Cost
1911	Wires	--its decs.--	20	$.62	$12.40
1297	Transistors	--its desc.--	10	$2.25	$22.50
1412	Ard Mega	--its desc.--	1	$53.75	$53.75

User View 3: Customer Membership Plan Report

Plan Number: 3

Plan Name: Platinum

Plan Description: --plan Desc.-

Customer ID	Customer Name	Customer Address	Plan Expiry
1001	Mithun	1001,Washington ave, Darien, CT 06608	17-OCT-2016
1003	Chandrahaas	1003,staten, New haven, CT 06610	22-DEC-2018

User View 4: Customer Order History

Customer ID: 1009

Customer Name: Chanakya

Customer Address: 1009, Indiana Ave, Shelton, CT 08976

Contact Number: 2030071009

Invoice Num	Invoice Date	Ship Date	Pay Method	Pay Status	Ship Speed	Product Name	Qty	Cost
9932	15-NOV-2012	18-NOV-2012	COD	Paid	Economy	IC 555	5	$36
						Wires	10	$6.20

Total: $42.20

User View 5: Purchase Orders

Vendor ID: 4150

Vendor Name: OM Electronics

Vendor Address: #182, Panchkarna Street, Delhi 110005

Contact Number: 973811033

Product ID	Product name	Product Description	Quantity	Cost/piece	Total
1495	IC 7408	AND Gate	80	$7.00	$560.00
1465	IC 7406	OR Gate	95	$6.95	$660.25

Grand Total: $1220.25

User View 6: Shipping Label

Ship ID: 2

Shipping Company Name: Fedex

Shipping Speed: Economy

Tracking Number: FED09EX73912

Invoice ID: 9932

Customer ID: 1009

Customer Name: Chanakya

Customer Address: --cus Add-

Customer Phone: 2030071009

User View 7: Inventory Report

Category ID: 2

Category Name: Analog Components

Product ID	Product Name	Product Description	Quantity	Cost/Piece	Expected Income
1297	Transistors	--prodDes--	150	$2.25	$337.50
1298	Capacitors	--prodDes--	300	$1.50	$450.00
1299	Resistors	--prodDes--	225	$1.00	$225.00

Total Assets: $1012.50

NORMALIZATION STEPS

User View 1: Employee Pay Slip

EPS(empID, empFName, empLName, DOB, DOJ, salary, allowances, payslipID, payslipCategory, deptID, deptName**)**

↓ (**Partial Dependencies**)

None

↓ (**Transitive Dependencies**)

Employee(empID, empFName, empLName, designation, DOB, DOJ, *deptID*, deptName, *payslipID*)

Payslip(<u>payslipID</u>, payslipCategory, salary, allowances)

Department(<u>deptID</u>, deptName)

User View 2: Invoice

Invoice(<u>invoiceID</u>, invoiceDate, shipDate, payMethod, payStatus, shipSpeed, <u>cusID</u>, cusName, cusAdd, cusPhone, <u>prodID</u>, prodName, prodDesc, quantity, cost, totalCost**)**

(Partial Dependencies)

Customer(<u>cusID</u>, cusName, cusAdd, cusPhone)

Products(<u>prodID</u>, prodName, prodDesc)

Invoice(<u>invoiceID</u>, invoiceDate, shipDate, payMethod, payStatus, shipSpeed, *<u>cusID</u>*)

Line(*<u>prodID</u>*, *<u>invoiceID</u>*, quantity, cost)

(**Transitive Dependencies**)

↓

None

User View 3: Customer Membership Plan Report

CMPR(<u>planNum</u>, planName, planDesc, <u>cusID</u>, cusName, cusAdd, planExpiry**)**

(**Partial Dependencies**)

↓

Plan(<u>planNum</u>, planName, planDesc)

Customer(<u>cusID</u>, cusName, cusAdd)

PlanExpiry(<u>*planNum*</u>, <u>*cusID*</u>, expirationDate)

(Transitive Dependencies)

↓

None

User View 4: Customer Order History

COH(<u>cusID</u>, cusName, cusAdd, cusPhone, <u>invoiceID</u>, <u>prodID</u>, prodName, quantity, cost, payStatus**)**

↓

(Partial Dependencies)

Customer(<u>cusID</u>, cusName, cusAdd, cusPhone**)**

Products(<u>prodID</u>, prodName**)**

Invoice(<u>invoiceID</u>, payStatus, *cusID***)**

Line(*<u>invoiceID</u>*, *<u>prodID</u>*, quantity, cost**)**

↓ **(Transitive Dependencies)**

None

User View 5: Purchase Orders

PO(vendorID, vendorName, vendorAdd, vendorPhone, prodID, prodName, prodDesc, Quantity, cost, totalCost**)**

↓ **(Partial Dependencies)**

Vendor(vendorID, vendorName, vendorAdd, vendorPhone)

Products(prodID, prodName, prodDesc)

PurchaseOrder(*vendorID*, *prodID*, Quantity, cost, totalCost)

↓ (**Transitive Dependencies**)

None

User View 6: Shipping Label

SL(<u>invoiceID</u>, <u>cusID</u>, cusName, cusAdd, cusPhone, <u>shipCompId</u>, shipCompName, shipSpeed, trackingNumber**)**
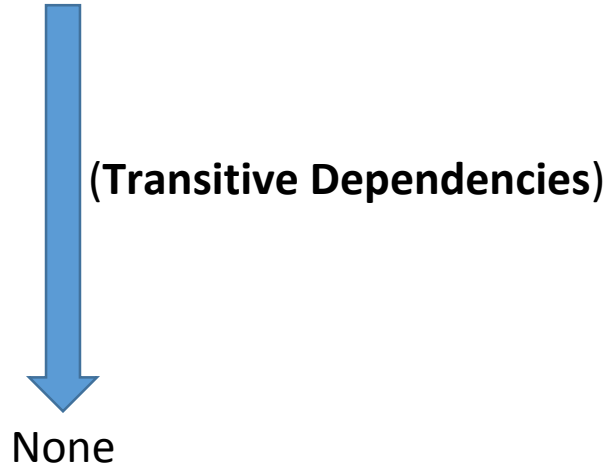
↓ (**Partial Dependencies**)
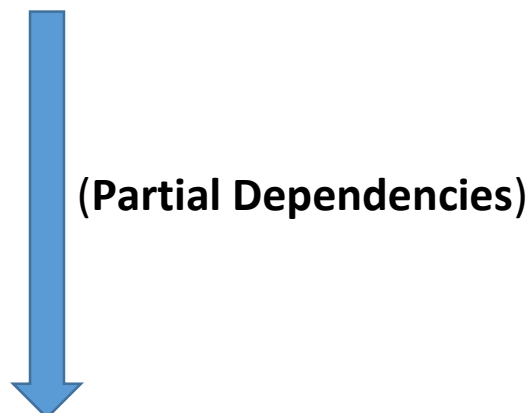
Customer(<u>cusID</u>, cusName, cusAdd, cusPhone)

shippingCompany(<u>shipCompID</u>, shipComName)

Invoice(<u>invoiceID</u>, *<u>cusID</u>*, shipSpeed)

trackingDeatils(*<u>invoiceID</u>*, *<u>shipCompID</u>*, trackingNumber)

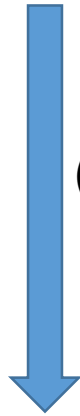(**Transitive Dependencies**)

None

User View 7: Inventory Report

IR(<u>prodID</u>, prodName, prodDec, quantity, cost, totalExpectedIncome, categoryID, categoryName**)**

(**Partial Dependencies**)

None

(**Transitive Dependencies**)

Products(<u>prodID</u>, prodName, prodDesc, quantity, cost, totalExpectedIncome, *<u>categoryID</u>*)

InventoryCategory(<u>categoryID</u>, categoryName)

LIST OF TABLES AFTER NORMALIZING

Customer(<u>cusID</u>, cusName, cusAdd, cusPhone**)**

Employee(empID, empFName, empLName, designation, DOJ, DOB, *<u>deptID</u>*, *<u>payslipID</u>***)**

Products(<u>prodID</u>, prodName, prodDesc, Quantity, cost, totalExpectedIncome, *<u>categoryID</u>***)**

Invoice(<u>invoiceID</u>, invoiceDate, shipDate, payMethod, payStatus, shipSpeed, *<u>cusID</u>***)**

Department(<u>deptID</u>, deptName**)**

Vendors(<u>vendorID</u>, vendorName, vendorAdd, vendorPhone**)**

ShippingCompany(<u>shipCompID</u>, shipCompName**)**

MembershipPlan(<u>planNum</u>, planName, planDesc**)**

InventoryCategory(<u>categoryID</u>, categoryName**)**

Line(<u>*prodID*</u>, <u>*invoiceID*</u>, quantity, cost**)**

payslipCategory(<u>payslipID</u>, basePay, allowances, payslipCategoryName**)**

PlanExpiry(<u>*planNum*</u>, <u>*cusID*</u>, expirationDate**)**

PurchaseOrder(<u>*vendorID*</u>, <u>*prodID*</u>, quantity, cost, totalCost**)**

TrackingDetails(<u>*invoiceID*</u>, <u>*shipCompID*</u>, trackingNumber**)**

NOTE: PRIMARY KEYS are Underlined and FOREIGN KEYS are Underlined and Italicized

Entity Relationship DIAGRAM