Exercise 1

UNF

Gallery Customer History Form

Customer Details

Jackson,   Elizabeth
Phone (206) 284-6783
123 — 4th Avenue
Fonthill
Zip Code: L3J 4S4

Purchases Made

Code	Artist	Painting code and Title	Purchase Date	Sales Price
03 -	Carol Channing	P1 - Laugh with Teeth	09/17/2000	7000.00
15 -	Dennis Frings	P2 - Toward Emerald Sea 0	5/11/2000	1800.00
03 -	Carol Channing	P9 - At the Movies	02/14/2002	5550.00
15 -	Dennis Frings	P2 - Toward Emerald Sea	07/15/2003	2200.00

1NF

Code	Artist	Painting code and Title	Purchase Date
03 -	Carol Channing	P1	09/17/2000
		P9	02/13/2002
15 -	Dennis Frings	P2	05/11/2000
		P2	07/16/2003

2NF

Customer

customer_id

name
phone
address1
address2
zipcode

Purchases

purchases_id
painting_code
purchases_code
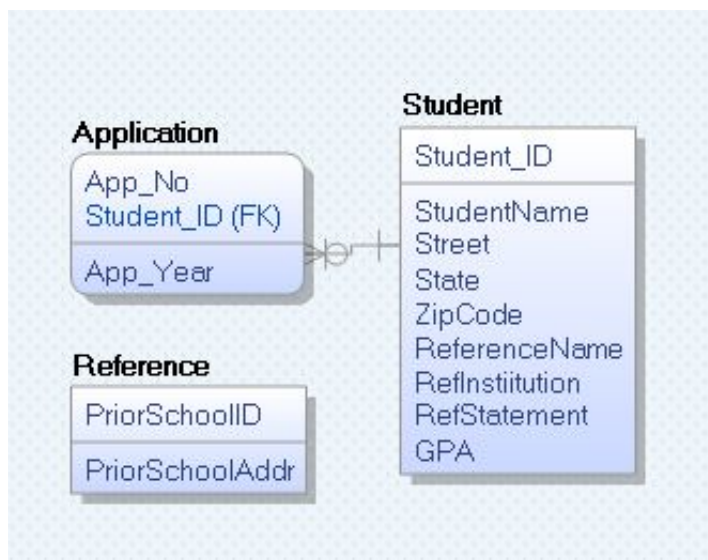
painting_title
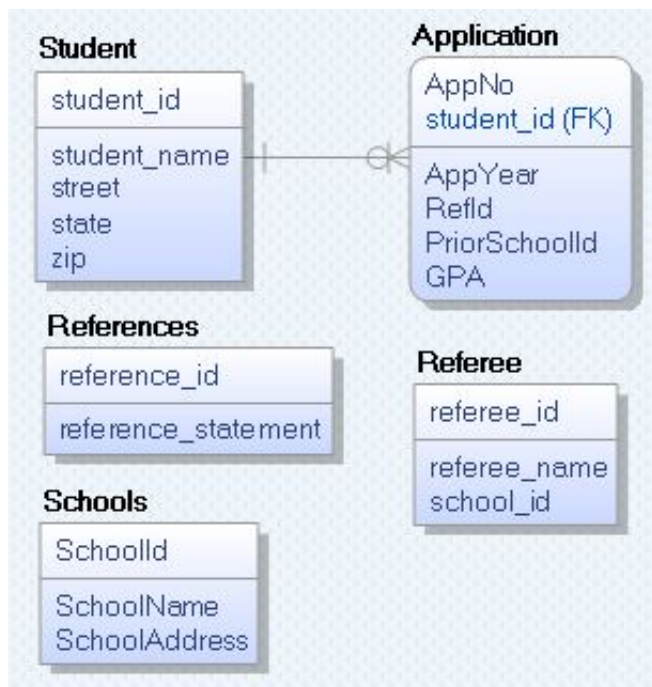artist
purchase_date
sales_price

3NF
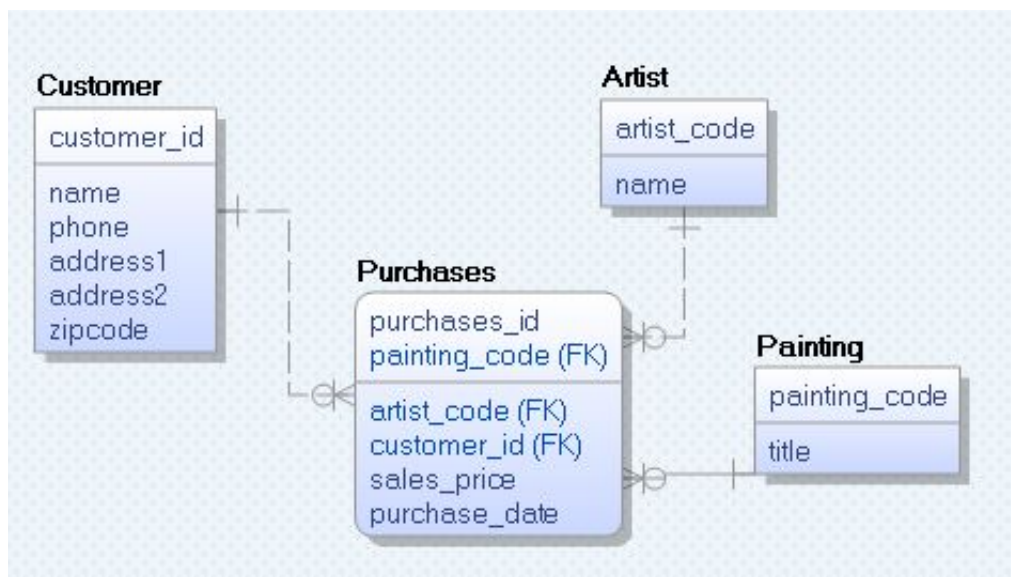
Exercise 2

UNF
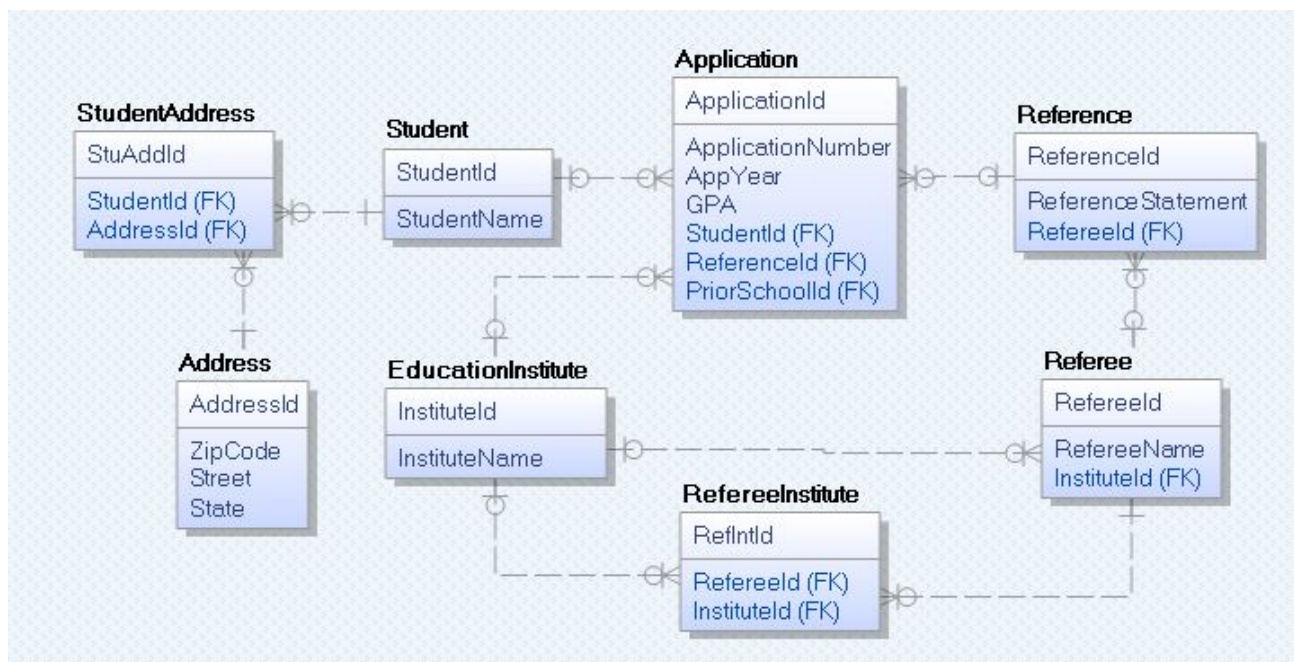

1NF

2NF

3NF

Storage Effiency:

Unnormalised:

(4 + 4 + 50 + 100 + 30 + 7 + 4 + 100 + 100 + 500 + 4 + 100 + 4) *36 = <u>1007</u>

Normalised:

Education Institute:
(4+100) * 10 = <u>1040</u>

Referee
(4 + 50) * 4 = <u>208</u>

RefreeInstitute:
(4 + 4 + 4) * 6 = <u>72</u>

Address:
(4 + 7 + 30 + 100) * = <u>1128</u>

Student:
(4 + 50) * 6 = <u>324</u>

Application:
(4 + 4 + 4 + 4 + 4 + 4 + 4) * 36 = <u>1008</u>

Reference:

(4 + 500) * 9 = <u>4536</u>

StudentAddress:

(4 + 4 + 4) * 9 = <u>108</u>

Total Normalised

1040 + 1008 + 208 + 4536 + 72 + 108 + 1128 + 324 = <u>8424</u>

Gain in Storage Efficiency

26252/8424 * 100 = <u>**418%**</u> Increase in Efficiency