Normalization Exercise

Unnormalized Form:

Client No	cName	property No	pAddress	rentStart	rentFinish	rent	ownerNo	oName
CR76	John Kay	PG4	6 Lawrence St., Glasgow	1-Jul-00	31-Aug-01	350	CO40	Tina Murphy
		PG16	5 Novar Dr., Glasgow	1-Sep-02	1-Sep-02	450	CO93	Tony Shaw
CR56	Aline Stewatt	PG4	6 Lawrence St., Glasgow	1-Sep-99	10-Jun-00	350	CO40	Tina Murphy
		PG36	2 Manor Rd., Glasgow	10-Oct-00	1-Dec-01	370	CO93	Tony Shaw
		PG16	5 Novar Dr., Glasgow	1-Nov-02	1-Aug-03	450	C093	Tony Shaw

1NF Form: representing each row as a single property

Client No	cName	propertyNo	pAddress	rentStart	rentFinish	rent	ownerNo	oName
CR76	John Kay	PG4	6 Lawrence St., Glasgow	1-Jul-00	31-Aug-01	350	CO40	Tina Murphy
CR76	John Kay	PG16	5 Novar Dr., Glasgow	1-Sep-02	1-Sep-02	450	CO93	Tony Shaw
CR56	Aline Stewatt	PG4	6 Lawrence St., Glasgow	1-Sep-99	10-Jun-00	350	CO40	Tina Murphy
CR56	Aline Stewatt	PG36	2 Manor Rd., Glasgow	10-Oct-00	1-Dec-01	370	CO93	Tony Shaw
CR56	Aline Stewatt	PG16	5 Novar Dr., Glasgow	1-Nov-02	1-Aug-03	450	C093	Tony Shaw

2NF Form: removing partial dependencies, composite key is {ClientNo, propertyNo}

Client Table:

ClientNo (primary key)	cName
CR76	John Kay
CR56	Aline Stewatt

Property Table:

propertyNo (primary key)	pAddress	rent	ownerNo	oName
PG4	6 Lawrence St., Glasgow	350	CO40	Tina Murphy

| PG16 | 5 Novar Dr., Glasgow | 450 | CO93 | Tony Shaw |
| PG36 | 2 Manor Rd., Glasgow | 370 | CO93 | Tony Shaw |

Rental Table:

ClientNo (foreign key)	propertyNo (foreign key)	rentStart	rentFinish
CR76	PG4	1-Jul-00	31-Aug-01
CR76	PG16	1-Sep-02	1-Sep-02
CR56	PG4	1-Sep-99	10-Jun-00
CR56	PG36	10-Oct-00	1-Dec-01
CR56	PG16	1-Nov-02	1-Aug-03

3NF Form: removing transitive dependencies

Client Table:

ClientNo (primary key)	cName
CR76	John Kay
CR56	Aline Stewatt

Property Table:

propertyNo (primary key)	pAddress	rent	ownerNo (foriegn key)
PG4	6 Lawrence St., Glasgow	350	CO40
PG16	5 Novar Dr., Glasgow	450	CO93
PG36	2 Manor Rd., Glasgow	370	CO93

Rental Table:

ClientNo (foreign key)	propertyNo (foreign key)	rentStart	rentFinish
CR76	PG4	1-Jul-00	31-Aug-01
CR76	PG16	1-Sep-02	1-Sep-02
CR56	PG4	1-Sep-99	10-Jun-00
CR56	PG36	10-Oct-00	1-Dec-01
CR56	PG16	1-Nov-02	1-Aug-03

Owner Table:

ownerNo (primary key)	oName
CO40	Tina Murphy
CO93	Tony Shaw
C093	Tony Shaw