TO: **Design Team Leader**

FROM: **Jeremiah Flowers**

DATE: **8/16/2015**

SUBJECT: Memo 6/7 – Deliverable (Final Report)

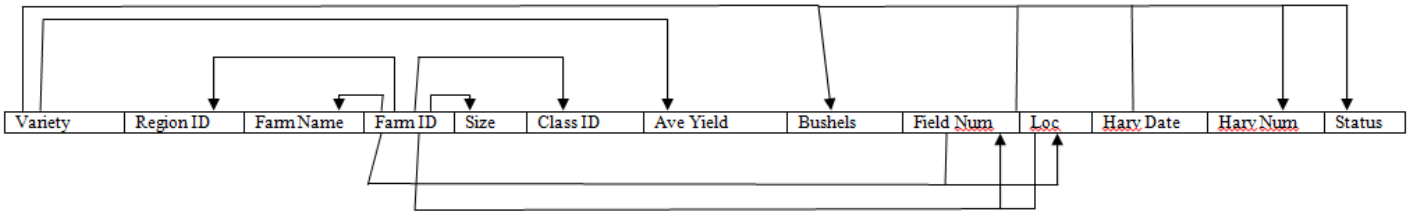
Introduction

This report will give an overview of my work done for Count of Bushels (COB) project. The COB project was to design and implement a prototype database. With the data given to me, I was to build a database that would represent their data that was on paper. I will go chronologically to explain the finished product.

Memo 1 and 2 – Functional Dependency

I made functional dependencies with the data that was sent to me, that would later be used to create diagrams for the database. This is before any of the newer data was handed out.

Graphical FDs:



Text Representation of FDs:

Variety→Ave Yield ---------- FarmID→Farm Name FarmID→RegionID FarmID→Size FarmID→ClassID ---------- HarvestNum→*everything*	{FarmID,FieldNum}→Loc {FarmID,Loc}→FieldNum ---------- {Variety,HarvestDate,FieldNum}→Bushel,HarvestNum,Status {Variety,HarvestDate,Loc}→Bushel,HarvestNum,Status ---------- {FarmID,FieldNum,Variety,HarvestDate}→Bushel,HarvestNum,Status {FarmID,Loc,Variety,HarvestDate}→Bushel,HarvestNum,Status

Memo 3 and 4 - Queries

This memo gave a few examples of possible queries that would be needed used. Below are answers to these with my current design:

1.
```
SELECT variety, bushel
FROM Harvest
WHERE variety = 'BC39'
ORDER BY bushel DESC
```

```
variety bushel
------- --------------------------------------
BC39    205.50
BC39    204.00
BC39    190.00
BC39    170.00
BC39    0.00

(5 row(s) affected)
```

2.
```
SELECT farmID,fieldID,date,bushel
FROM Harvest
ORDER BY farmID,fieldID,date
```

```
farmID     fieldID     date       bushel
---------- ----------- ---------- --------------------------------------
AA4        63          2013-09-01 46.00
AA4        95          2013-09-01 175.00
AF-100     19          2013-10-01 44.00
AF-100     63          2014-08-01 170.00
AF-100     63          2014-08-01 205.50
AF-100     88          2013-10-01 170.00
F-8        19          2013-09-01 0.00
F-8        21          2013-10-01 46.00
F-8        21          2014-08-01 140.00
F-8        21          2014-09-01 43.00
MILL-1     19          2013-08-01 48.00
MILL-1     82          2013-09-01 204.00
MILL-1     82          2013-10-01 0.00
MILL-2     88          2013-09-01 54.00
RI-200     63          2014-09-01 175.00
VA-300     95          2013-10-01 190.00

(16 row(s) affected)
```

3.
```
SELECT farmID,classID
FROM Farm
WHERE farmName = 'Ace-agri'
```

```
farmID     classID
---------- -------
AA4        A

(1 row(s) affected)
```

4.
```
SELECT h.variety,h.harvestNum,h.bushel
FROM Harvest h
JOIN Crop c
ON c.variety = h.variety
WHERE h.bushel < (c.aveYield+5) AND h.bushel > (c.aveYield-5)
```

```
variety harvestNum  bushel
------- ----------- --------------------------------------
BC39    46          204.00
BS81    35          46.00
BS81    57          54.00
P81Y    43          44.00

(4 row(s) affected)
```

5.
```
SELECT h.variety,h.date,f.regionID,h.bushel
FROM Harvest h
JOIN Farm f
ON f.farmID=h.farmID
WHERE f.regionID='SI' AND (date='2013-08-01' OR date='2013-09-01')
```

```
variety date       regionID bushel
------- ---------- -------- --------------------------------------
BC39    2013-09-01 SI       204.00
BS4N    2013-08-01 SI       48.00
BS81    2013-09-01 SI       54.00

(3 row(s) affected)
```

6.
```
SELECT farmID,date
FROM Harvest
WHERE date='2013-10-01'
```

```
farmID     date
---------- ----------
MILL-1     2013-10-01
VA-300     2013-10-01
AF-100     2013-10-01
F-8        2013-10-01
AF-100     2013-10-01

(5 row(s) affected)
```

7.
```
SELECT farmName,regionID,size
FROM Farm
WHERE farmName='ace-agri'
```

```
farmName                    regionID size
--------------------------- -------- -----------
Ace-Agri                    NI       1300

(1 row(s) affected)
```

8.
```
SELECT m.memberID,m.name,f.regionID
FROM Member m
JOIN Owner o
ON m.memberID=o.memberID
JOIN Farm f
ON f.farmID=o.farmID
WHERE regionID='SI'
```

```
memberID name                           regionID
-------- ------------------------------ --------
M1013    Jose Castro                    SI
M1203    Gabrelle Miller                SI
M1204    Marco Miller                   SI

(3 row(s) affected)
```

9.
```
SELECT m.memberID,m.name,f.regionID
FROM Member m
JOIN Owner o
ON m.memberID=o.memberID
JOIN Farm f
ON f.farmID=o.farmID
WHERE regionID='CI'
```

```
memberID name                           regionID
-------- ------------------------------ --------
M1012    Jackson Smith                  CI
M1023    Max Adams                      CI
M1201    Laura Fergeson                 CI

(3 row(s) affected)
```

10.
```
SELECT farmID,fieldID,loc,NumHarv
FROM Field
ORDER BY farmID
```

```
farmID     fieldID     loc        NumHarv
---------- ----------- ---------- -----------
AA4        63          S4E2       1
AA4        95          S4E3       1
AF-100     63          N1W1       1
AF-100     19          N1W2       1
AF-100     88          N1W1       1
F-8        21          N1W1       3
F-8        19          N1E4       1
MILL-1     19          N1W1       1
MILL-1     82          N2W1       2
MILL-2     88          N1E5       1
RI-200     63          S2E2       1
VA-300     95          N2E4       1

(12 row(s) affected)
```

11.
```
SELECT hh.memberID,h.harvestNum,h.bushel
FROM Harvest h
JOIN Farm f
ON h.farmID=f.farmID
JOIN Harvester hh
ON f.classID=hh.classID
WHERE hh.memberID='M0201'
```

```
memberID harvestNum  bushel
-------- ----------- ---------------------------------------
M0201    54          205.50
M0201    80          170.00
M0201    80          46.00
M0201    43          44.00
M0201    20          175.00
M0201    66          170.00

(6 row(s) affected)
```

a. M0207 will give results from the query. Is it because the farm is Co-Op, so multiple people are harvesting the farms.

12.
```
SELECT f.farmName,m.name
FROM Farm f
JOIN Owner o
ON o.farmID=f.farmID
JOIN Member m
ON m.memberID=o.memberID
ORDER BY farmName
```

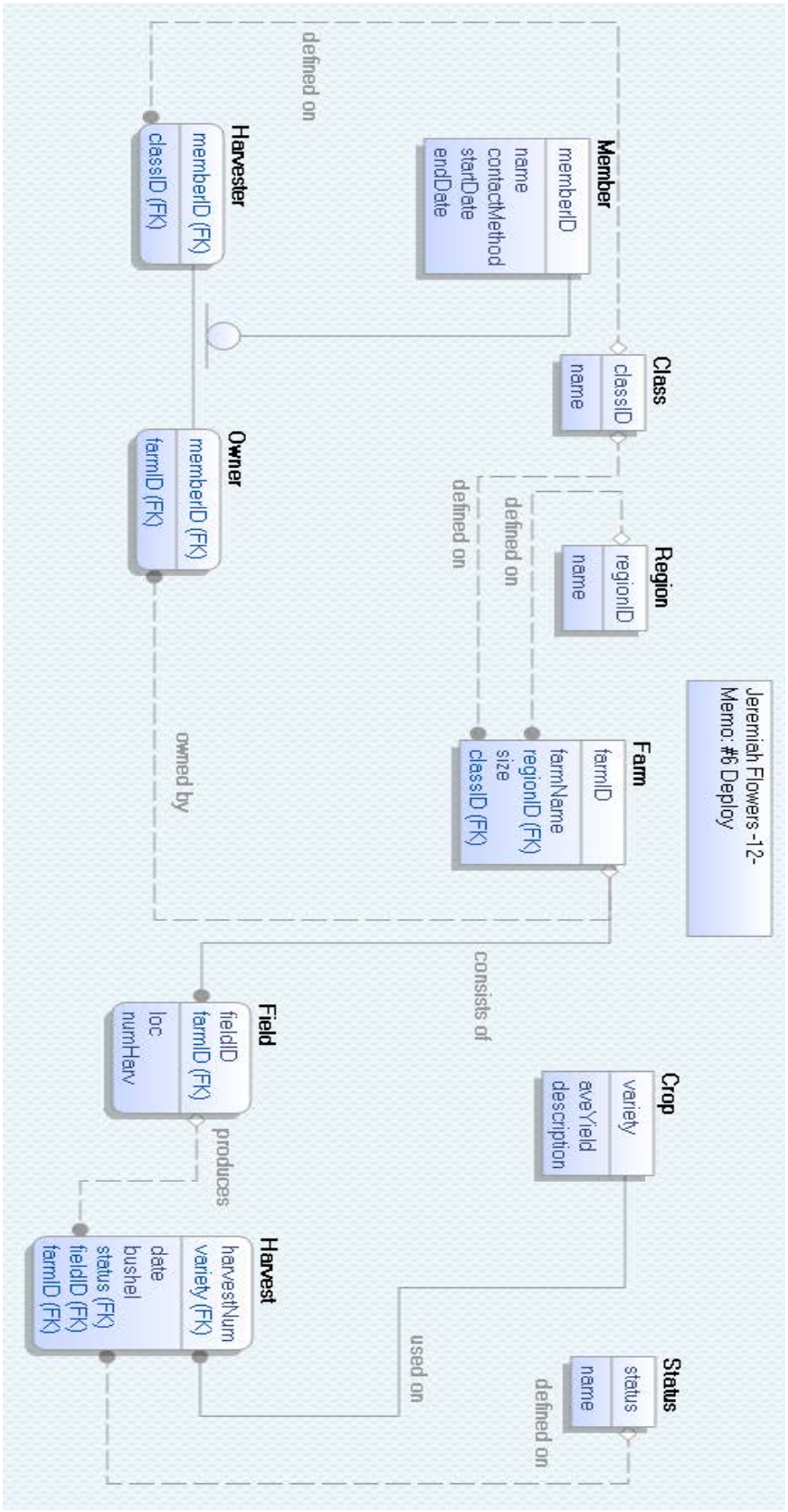
```
farmName                    name
--------------------------- ----------------------------
Ace-Agri                    Kevin Kilroy
Acme Farms                  Jose Castro
Farm 8                      Carl Carlson
Miller Farm                 Gabrelle Miller
Miller Farm                 Marco Miller
Rancho Inc                  Jackson Smith
Verde Acres                 Max Adams
Verde Acres                 Laura Fergeson

(8 row(s) affected)
```

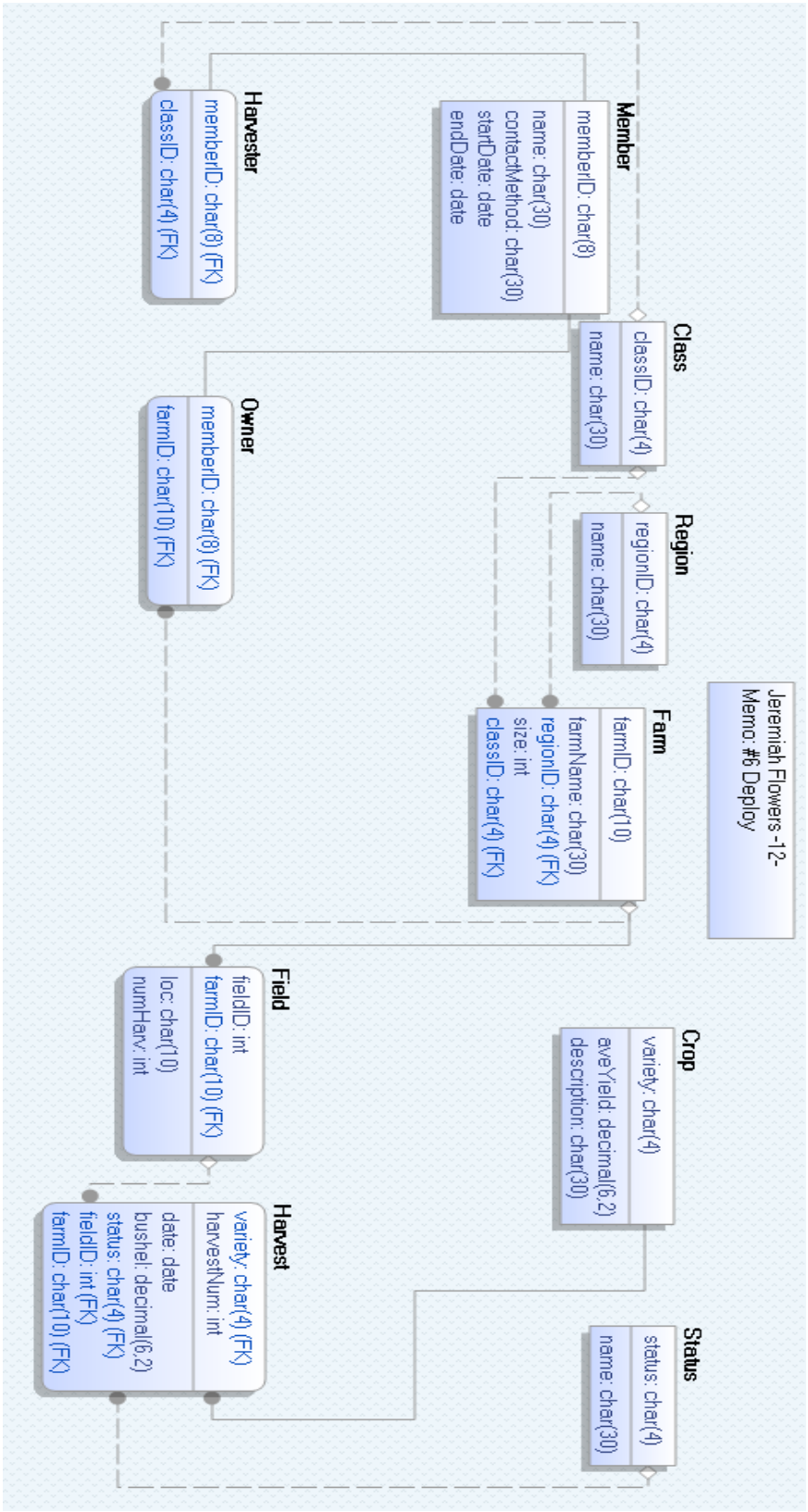
Memo 5 and 6 – ER Diagrams and DB creation

Last step is deployment. After finishing the ER diagrams for LDM and PDM, the database is created and then filled will data.

Logical data model:



Physical Data Model:



All data shown with tables joined together inside database:

SQLQuery2.sql - in-...OB12 (12Flo12 (63))*

```
select c.variety, r.regionID, f.farmName,  f.farmID, f.size, cc.classID, c.aveYield, h.bushel, ff.fieldID, ff.loc, ff.numHarv, h.date, h.harvestNum, h.status, m.memberID, m.nam
from Harvest h
JOIN Crop c
ON h.variety=c.variety
JOIN Field ff
ON ff.fieldID=h.fieldID AND ff.farmID=h.farmID
JOIN Farm f
ON f.farmID=ff.farmID
JOIN Region r
ON r.regionID=f.regionID
JOIN Class cc
ON cc.classID=f.classID
JOIN Owner o
ON o.farmID=f.farmIDA
JOIN Member m
ON m.memberID=o.memberID
```

100 %

Results | Messages

	variety	regionID	farmName	farmID	size	classID	aveYield	bushel	fieldID	loc	numHarv	date	harvestNum	status	memberID	name
1	BC28	CI	Rancho Inc	RI-200	400	C	180.00	175.00	63	S2E2	1	2014-09-01	98	1	M1012	Jackson Smith
2	BC39	SI	Miller Farm	MILL-1	400	F	200.00	0.00	82	N2W1	2	2013-10-01	42	0	M1203	Gabrelle Miller
3	BC39	CI	Verde Acres	VA-300	300	F	200.00	190.00	95	N2E4	1	2013-10-01	45	1	M1023	Max Adams
4	BC39	CI	Verde Acres	VA-300	300	F	200.00	190.00	95	N2E4	1	2013-10-01	45	1	M1201	Laura Fergeson
5	BC39	SI	Miller Farm	MILL-1	400	F	200.00	204.00	82	N2W1	2	2013-09-01	46	1	M1203	Gabrelle Miller
6	BC39	SI	Acme Farms	AF-100	1000	A	200.00	205.50	63	N1W1	1	2014-08-01	54	1	M1013	Jose Castro
7	BC39	SI	Acme Farms	AF-100	1000	A	200.00	170.00	88	N1W1	1	2013-10-01	80	1	M1013	Jose Castro
8	BS4N	SI	Miller Farm	MILL-1	400	F	43.50	48.00	19	N1W1	1	2013-08-01	77	1	M1203	Gabrelle Miller
9	BS4N	NI	Ace-Agri	AA4	1300	A	43.50	46.00	63	S4E2	1	2013-09-01	80	1	M1202	Kevin Kilroy
10	BS81	NI	Farm 8	F-8	870	C	50.00	140.00	21	N1W1	3	2014-08-01	15	1	M1024	Carl Carlson
11	BS81	NI	Farm 8	F-8	870	C	50.00	43.00	21	N1W1	3	2014-09-01	25	1	M1024	Carl Carlson
12	BS81	NI	Farm 8	F-8	870	C	50.00	46.00	21	N1W1	3	2013-10-01	35	1	M1024	Carl Carlson
13	BS81	SI	Miller Farm	MILL-2	244	F	50.00	54.00	88	N1E5	1	2013-09-01	57	1	M1204	Marco Miller
14	P81Y	SI	Acme Farms	AF-100	1000	A	45.00	44.00	19	N1W2	1	2013-10-01	43	1	M1013	Jose Castro
15	P98C	NI	Ace-Agri	AA4	1300	A	180.00	175.00	95	S4E3	1	2013-09-01	20	1	M1202	Kevin Kilroy
16	P98C	NI	Farm 8	F-8	870	C	180.00	0.00	19	N1E4	1	2013-09-01	46	0	M1024	Carl Carlson
17	P98C	SI	Acme Farms	AF-100	1000	A	180.00	170.00	63	N1W1	1	2014-08-01	66	1	M1013	Jose Castro

Query executed successfully. | in-csci-mssql\SQLSERVER2014... | 12Flo12 (63) | COB12 | 00:00:00 | 17 rows

Memo 7 – Latest Data

The newest data I received from Bob caused some problems but the data from Sam did not.

Bob:

The first row – Missing data from Harvest Number will cause it not to go in because Harvest number is a primary key. The Field Num and Loc do not match up to what they should be, the will go into the table but Field Num 14 will be in the same Loc as Field Num 21.

The second row – No real issue, except seeing aveYield blank when the variety for that crop is already in the table.

The third row – This is an exact copy of row 17 from that data given to me. This will not go into the database.

Sam:

Hardly any effort to make this change. UPDATE the values at Farm.farmName and Crop.aveYield will fix this

Bob again:

First issue – This would not work in my database as the Harvest Number and Variety are the same as an already existing row. There is a change to aveYield that P98C previous did not have in the data. If this is the correct value, updating the change would be simple.

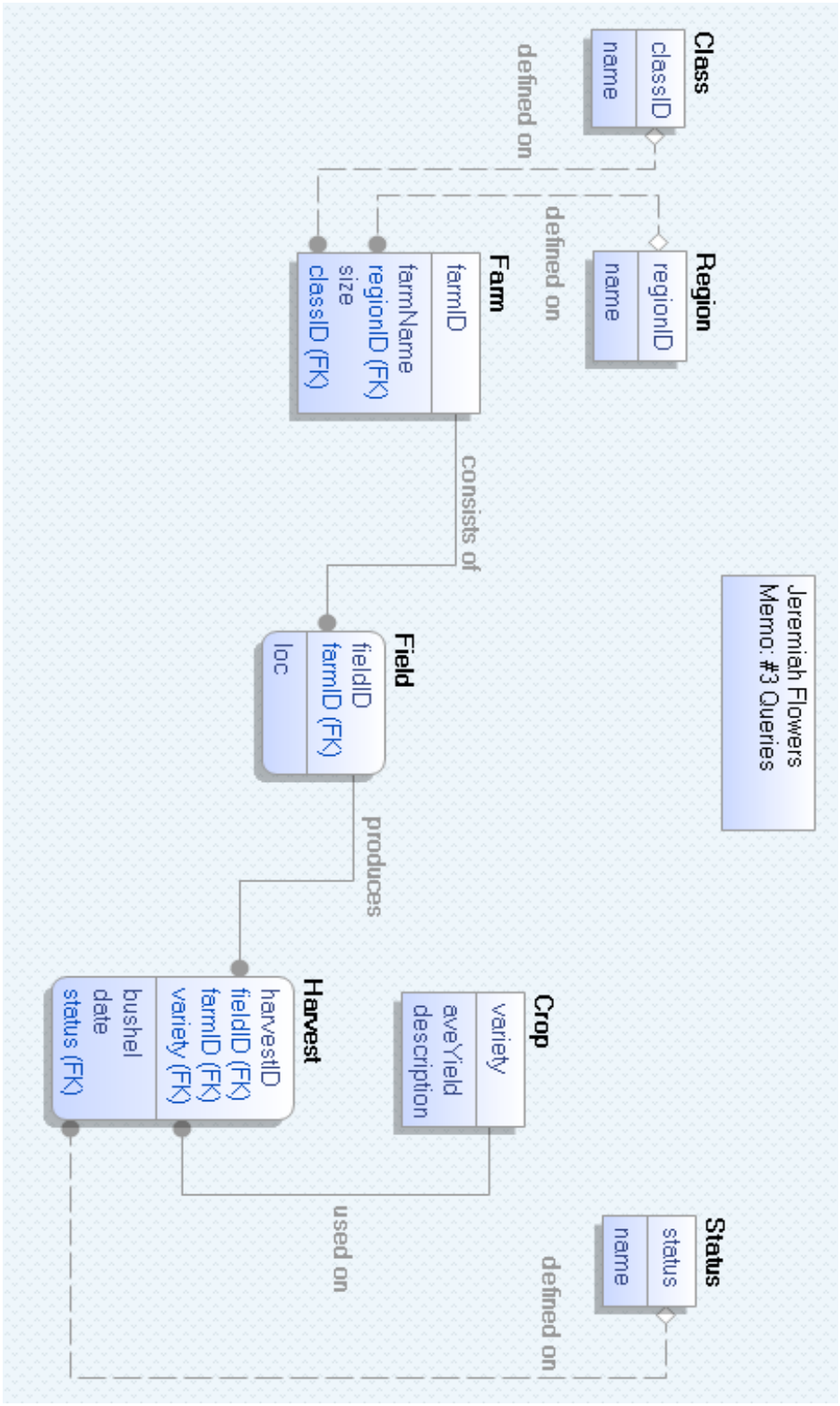
Second issue – I would have to had M0103 into the Member table then into Owner table assigned to the right farmID

Number of Harvest:

This value could be display with a query using COUNT() on the Harvest table for a specific field.

Appendix

Design before new data. First pass at designing the database before getting any new data:



ERwin's script for generating the database:

```
CREATE TABLE [Class]
(
	[classID]	char(4)  NOT NULL ,
	[name]	 char(30)  NULL
)
go
ALTER TABLE [Class]
	ADD  PRIMARY KEY  CLUSTERED ([classID] ASC)
go
CREATE TABLE [Crop]
(
	[variety]	char(4)  NOT NULL ,
	[aveYield]	 decimal(6,2)  NULL ,
	[description]	 char(30)  NULL
)
go
ALTER TABLE [Crop]
	ADD  PRIMARY KEY  CLUSTERED ([variety] ASC)
go
CREATE TABLE [Farm]
(
	[farmID]	 char(10)  NOT NULL ,
	[farmName]	  char(30)  NULL ,
	[regionID]	 char(4)  NULL ,
	[size]	int  NULL ,
	[classID]	 char(4)  NULL
)
go
ALTER TABLE [Farm]
	ADD  PRIMARY KEY  CLUSTERED ([farmID] ASC)
go
CREATE TABLE [Field]
(
	[fieldID]	int  NOT NULL ,
	[farmID]	 char(10)  NOT NULL ,
	[loc]	char(10)  NULL ,
	[numHarv]	  int  NULL
```

```
)
go
ALTER TABLE [Field]
	ADD  PRIMARY KEY  CLUSTERED ([fieldID] ASC,[farmID] ASC)
go
CREATE TABLE [Member]
(
	[memberID]	char(8)  NOT NULL ,
	[name]		char(30)  NULL ,
	[contactMethod]	char(30)  NULL ,
	[startDate]	date  NULL ,
	[endDate]	date  NULL
)
go
ALTER TABLE [Member]
	ADD  PRIMARY KEY  CLUSTERED ([memberID] ASC)
go
CREATE TABLE [Harvester]
(
	[memberID]	char(8)  NOT NULL ,
	[classID]	char(4)  NULL
)
go
ALTER TABLE [Harvester]
	ADD  PRIMARY KEY  CLUSTERED ([memberID] ASC)
go
CREATE TABLE [Owner]
(
	[memberID]	char(8)  NOT NULL ,
	[farmID]	char(10)  NULL
)
go
ALTER TABLE [Owner]
	ADD  PRIMARY KEY  CLUSTERED ([memberID] ASC)
go
CREATE TABLE [Region]
(
	[regionID]	char(4)  NOT NULL ,
	[name]		char(30)  NULL
)
go
ALTER TABLE [Region]
```

```
	ADD  PRIMARY KEY  CLUSTERED ([regionID] ASC)
go
CREATE TABLE [Status]
(
	[status]	char(4)  NOT NULL ,
	[name]		 char(30)  NULL
)
go
ALTER TABLE [Status]
	ADD  PRIMARY KEY  CLUSTERED ([status] ASC)
go
CREATE TABLE [Harvest]
(
	[variety]	 char(4)  NOT NULL ,
	[harvestNum]	int  NOT NULL ,
	[date]		date  NULL ,
	[bushel]	 decimal(6,2)  NULL ,
	[status]	char(4)  NULL ,
	[fieldID]	int  NULL ,
	[farmID]	 char(10)  NULL
)
go
ALTER TABLE [Harvest]
	ADD  PRIMARY KEY  CLUSTERED ([variety] ASC,[harvestNum] ASC)
go
ALTER TABLE [Farm]
	ADD  FOREIGN KEY ([regionID]) REFERENCES [Region]([regionID])
go
ALTER TABLE [Farm]
	ADD  FOREIGN KEY ([classID]) REFERENCES [Class]([classID])
go
ALTER TABLE [Field]
	ADD  FOREIGN KEY ([farmID]) REFERENCES [Farm]([farmID])
go
ALTER TABLE [Harvester]
	ADD  FOREIGN KEY ([classID]) REFERENCES [Class]([classID])
go
ALTER TABLE [Harvester]
	ADD  FOREIGN KEY ([memberID]) REFERENCES [Member]([memberID])
go
ALTER TABLE [Owner]
	ADD  FOREIGN KEY ([farmID]) REFERENCES [Farm]([farmID])
```

```
go
ALTER TABLE [Owner]
        ADD  FOREIGN KEY ([memberID]) REFERENCES [Member]([memberID])
go
ALTER TABLE [Harvest]
        ADD  FOREIGN KEY ([variety]) REFERENCES [Crop]([variety])
go
ALTER TABLE [Harvest]
        ADD  FOREIGN KEY ([status]) REFERENCES [Status]([status])
go
ALTER TABLE [Harvest]
        ADD  FOREIGN KEY ([fieldID],[farmID]) REFERENCES [Field]([fieldID],[farmID])
go
```

Insert statements for the loaded data – I personally used Excel copy/paste for SSMS:

```
INSERT Class (classID, name) VALUES (N'A', N'Agribusinness')
INSERT Class (classID, name) VALUES (N'C', N'Co-op ')
INSERT Class (classID, name) VALUES (N'F', N'Farmer Owner')

INSERT Region (regionID, name) VALUES (N'CI', N'Central IN')
INSERT Region (regionID, name) VALUES (N'NI', N'Northern IN ')
INSERT Region (regionID, name) VALUES (N'SI', N'Southern IN ')

INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'AA4 ', N'Ace-Agri ',
N'NI', 1300, N'A')
INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'AF-100 ', N'Acme
Farms', N'SI', 1000, N'A')
INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'F-8 ', N'Farm 8',
N'NI', 870, N'C')
INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'MILL-1 ', N'Miller Farm
', N'SI', 400, N'F')
INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'MILL-2 ', N'Miller Farm
', N'SI', 244, N'F')
INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'RI-200 ', N'Rancho
Inc', N'CI', 400, N'C')
INSERT Farm (farmID, farmName, regionID, size, classID) VALUES (N'VA-300 ', N'Verde Acres
', N'CI', 300, N'F')

INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M0201', N'ABC
Combine ', N'AC@COB.net', CAST(N'2012-08-15' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M0207',
N'Bill Smith', N'BS@COB.net', CAST(N'2012-08-15' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M0214', N'Doe
Farming ', N'DF@COB.net', CAST(N'2012-08-15' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M0217',
N'Deere Equip ', N'DE@COB.net', CAST(N'2012-08-15' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M0219',
N'Southern Harvest', N'SE@COB.net', CAST(N'2012-08-15' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M0220',
N'Harvest, Inc', N'HI@COB.net', CAST(N'2012-08-15' AS Date), NULL)
```

```
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1012',
N'Jackson Smith', NULL, CAST(N'2012-06-01' AS Date), CAST(N'2014-07-23' AS Date))
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1013',
N'Jose Castro ', N'555-1212 ', CAST(N'2012-06-01' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1023', N'Max
Adams', N'NA@REDD.net ', CAST(N'2012-06-15' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1024',
N'Carl Carlson', N'CC@REDD.net ', CAST(N'2012-06-20' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1201',
N'Laura Fergeson ', N'LF@REDD.net ', CAST(N'2012-08-20' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1202',
N'Kevin Kilroy', NULL, CAST(N'2012-08-20' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1203',
N'Gabrelle Miller', N'P.O. Box 333', CAST(N'2012-08-25' AS Date), NULL)
INSERT Member (memberID, name, contactMethod, startDate, endDate) VALUES (N'M1204',
N'Marco Miller', N'P.O. Box 333', CAST(N'2012-08-25' AS Date), NULL)

INSERT Harvester (memberID, classID) VALUES (N'M0201', N'A')
INSERT Harvester (memberID, classID) VALUES (N'M0207', N'C')
INSERT Harvester (memberID, classID) VALUES (N'M0214', N'F')
INSERT Harvester (memberID, classID) VALUES (N'M0217', N'F')
INSERT Harvester (memberID, classID) VALUES (N'M0219', N'C')
INSERT Harvester (memberID, classID) VALUES (N'M0220', N'C')

INSERT Crop (variety, aveYield, description) VALUES (N'BC28', CAST(180.00 AS Decimal(6,
2)), N'Corn: Stress tolerant')
INSERT Crop (variety, aveYield, description) VALUES (N'BC39', CAST(200.00 AS Decimal(6,
2)), N'Corn: Top Yield')
INSERT Crop (variety, aveYield, description) VALUES (N'BS4N', CAST(43.50 AS Decimal(6,
2)), N'Soybean: Excellent yield')
INSERT Crop (variety, aveYield, description) VALUES (N'BS81', CAST(50.00 AS Decimal(6,
2)), N'Soybean: Top yield')
INSERT Crop (variety, aveYield, description) VALUES (N'P81Y', CAST(45.00 AS Decimal(6,
2)), N'Soybean: od with low iron')
INSERT Crop (variety, aveYield, description) VALUES (N'P98C', CAST(180.00 AS Decimal(6,
2)), N'Corn: Hybred corn ')

INSERT Field (fieldID, farmID, loc, numHarv) VALUES (19, N'AF-100 ', N'N1W2', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (19, N'F-8 ', N'N1E4', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (19, N'MILL-1 ', N'N1W1', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (21, N'F-8 ', N'N1W1', 3)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (63, N'AA4 ', N'S4E2', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (63, N'AF-100 ', N'N1W1', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (63, N'RI-200 ', N'S2E2', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (82, N'MILL-1 ', N'N2W1', 2)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (88, N'AF-100 ', N'N1W1', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (88, N'MILL-2 ', N'N1E5', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (95, N'AA4 ', N'S4E3', 1)
INSERT Field (fieldID, farmID, loc, numHarv) VALUES (95, N'VA-300 ', N'N2E4', 1)

INSERT Status (status, name) VALUES (N'0', N'Late')
INSERT Status (status, name) VALUES (N'1', N'Ok ')

INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BC28', 98, CAST(N'2014-09-01' AS Date), CAST(175.00 AS Decimal(6, 2)), N'1', 63, N'RI-
200 ')
```

```
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BC39', 42, CAST(N'2013-10-01' AS Date), CAST(0.00 AS Decimal(6, 2)), N'0', 82, N'MILL-
1 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BC39', 45, CAST(N'2013-10-01' AS Date), CAST(190.00 AS Decimal(6, 2)), N'1', 95, N'VA-
300 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BC39', 46, CAST(N'2013-09-01' AS Date), CAST(204.00 AS Decimal(6, 2)), N'1', 82,
N'MILL-1 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BC39', 54, CAST(N'2014-08-01' AS Date), CAST(205.50 AS Decimal(6, 2)), N'1', 63, N'AF-
100 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BC39', 80, CAST(N'2013-10-01' AS Date), CAST(170.00 AS Decimal(6, 2)), N'1', 88, N'AF-
100 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BS4N', 77, CAST(N'2013-08-01' AS Date), CAST(48.00 AS Decimal(6, 2)), N'1', 19,
N'MILL-1 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BS4N', 80, CAST(N'2013-09-01' AS Date), CAST(46.00 AS Decimal(6, 2)), N'1', 63, N'AA4
')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BS81', 15, CAST(N'2014-08-01' AS Date), CAST(140.00 AS Decimal(6, 2)), N'1', 21, N'F-8
')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BS81', 25, CAST(N'2014-09-01' AS Date), CAST(43.00 AS Decimal(6, 2)), N'1', 21, N'F-8
')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BS81', 35, CAST(N'2013-10-01' AS Date), CAST(46.00 AS Decimal(6, 2)), N'1', 21, N'F-8
')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'BS81', 57, CAST(N'2013-09-01' AS Date), CAST(54.00 AS Decimal(6, 2)), N'1', 88,
N'MILL-2 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'P81Y', 43, CAST(N'2013-10-01' AS Date), CAST(44.00 AS Decimal(6, 2)), N'1', 19, N'AF-
100 ')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'P98C', 20, CAST(N'2013-09-01' AS Date), CAST(175.00 AS Decimal(6, 2)), N'1', 95, N'AA4
')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'P98C', 46, CAST(N'2013-09-01' AS Date), CAST(0.00 AS Decimal(6, 2)), N'0', 19, N'F-8
')
INSERT Harvest (variety, harvestNum, date, bushel, status, fieldID, farmID) VALUES
(N'P98C', 66, CAST(N'2014-08-01' AS Date), CAST(170.00 AS Decimal(6, 2)), N'1', 63, N'AF-
100 ')

INSERT Owner (memberID, farmID) VALUES (N'M1012', N'RI-200 ')
INSERT Owner (memberID, farmID) VALUES (N'M1013', N'AF-100 ')
INSERT Owner (memberID, farmID) VALUES (N'M1023', N'VA-300 ')
INSERT Owner (memberID, farmID) VALUES (N'M1024', N'F-8 ')
INSERT Owner (memberID, farmID) VALUES (N'M1201', N'VA-300 ')
INSERT Owner (memberID, farmID) VALUES (N'M1202', N'AA4 ')
INSERT Owner (memberID, farmID) VALUES (N'M1203', N'MILL-1 ')
INSERT Owner (memberID, farmID) VALUES (N'M1204', N'MILL-2 ')
```