Unit 13 Problem Set Submission Form

Overview

Your Name	Bhavya Shah
Your SU Email	bhshah@syr.edu

Instructions

Put your name and SU email at the top. Answer these questions all from the lab. When asked to include screenshots, please follow the screen shot guidelines from the first lab.

Remember as you complete the problem sets it is not only about getting it right / correct. We will discuss the answers in class so it's important to articulate anything you would like to contribute to the discussion in your answer:

- If you feel the question is vague, include any assumptions you've made.
- If you feel the answer requires interpretation or justification provide it.
- If you do not know the answer to the question, articulate what you tried and how you are stuck.

This how you receive credit for answering questions which might not be correct.

Questions

Answer these questions using the problem set submission template. You will need to consult the logical model in the overview section for details. For any screenshots provided, please follow the guidelines for submitting a screenshot.

Questions

Answer these questions using the problem set submission template. You will need to consult the logical model in the overview section for details. For any screenshots provided, please follow the guidelines for submitting a screenshot.

1. Provide a screenshot of your working migrations for steps 1.4, 1.4 3.1 and 3.2 in the walkthrough.
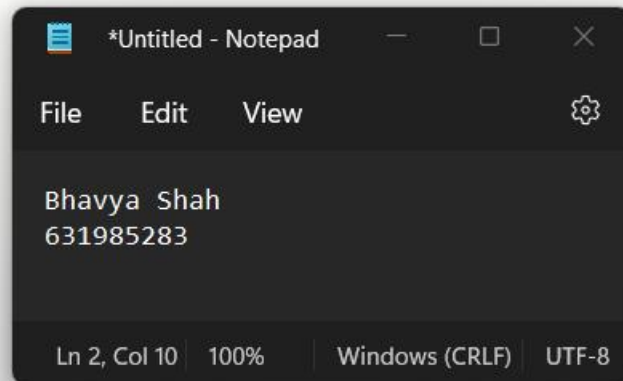
```sql
2    drop table if exists fb_book_authors
3    GO
4    select isbn, author_name
5        into fb_book_authors
6        from fudgenbooks unpivot (
7            author_name for author_column in (author1,author2,author3)
8        ) as upvt
9    GO
10   alter table fb_book_authors
11       alter column author_name varchar(20) not NULL
12   GO
13   alter table fb_book_authors
14       add constraint pk_fb_book_authors primary key (isbn, author_name)
15   GO
16   select *
17   from fb_book_authors
18   select distinct value as subject
19   from fudgenbooks
20       cross apply string_split(subjects, ',' )
21
```

Results Messages

	isbn	author_name
1	372317842	Made-Off
2	372317842	Mandafort
3	472325845	Made-Off
4	472325845	Moneesgon
5	535621977	Screwm
6	535621977	Sucka
7	635619239	Dewey
8	635619239	Howe
9	635619239	Screwm

	subject
1	id theft
2	imbezzle
3	money laundering
4	phising
5	ponzi
6	scams

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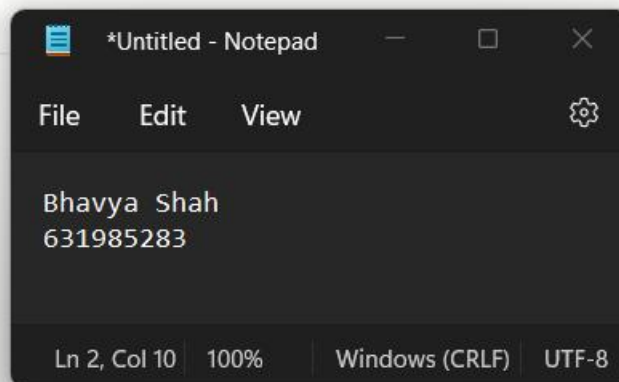Ln 2, Col 10   100%   Windows (CRLF)   UTF-8

```sql
25   drop table if exists fb_book_subjects
26   go
27   select distinct value as subject
28       into fb_book_subjects
29       from fudgenbooks cross apply string_split(subjects, ',')
30   GO
31   alter table fb_book_subjects
32       alter column subject varchar(40) not null
33   GO
34   alter table fb_book_subjects
35       add constraint pk_fb_subjects primary key (subject)
36   go
37   select *
38   from fb_book_subjects
39   go
40
```

Results Messages

	subject
1	id theft
2	imbezzle
3	money laundering
4	phising
5	ponzi
6	scams

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```
43   drop table if exists fudgenbooks_1nf
44   go
45   select isbn, title, price, pages, pub_no, pub_name, pub_website
46   into fudgenbooks_1nf
47   from fudgenbooks
48   go
49   alter table fudgenbooks_1nf
50      add constraint pk_fudgenbooks_1nf primary key (isbn)
51   go
52   select *
53   from fudgenbooks_1nf
54   go
55
56   drop table if exists fb_books
57   go
58   select isbn, title, price, pages, pub_no
59   into fb_books
60   from fudgenbooks_1nf
61   go
62   alter table fb_books
63      add constraint pk_fb_books primary key (isbn)
64   go
65   select *
66   from fb_books
67   go
68
```

Results   Messages

isbn	title	price	pages	pub_no	pub_name	pub_website
1	372317842	Introduction to Money Launde…	29.95	367	101	Rypoff	http://www.rypoffpublishing…
2	472325845	Imbezzle Like a Pro	34.95	670	101	Rypoff	http://www.rypoffpublishing…
3	535621977	The Internet Scammer's Bible	44.95	944	102	BS Press	http://www.bspress.com/books
4	635619239	Art of the Ponzi Scheme	39.95	450	102	BS Press	http://www.bspress.com/books

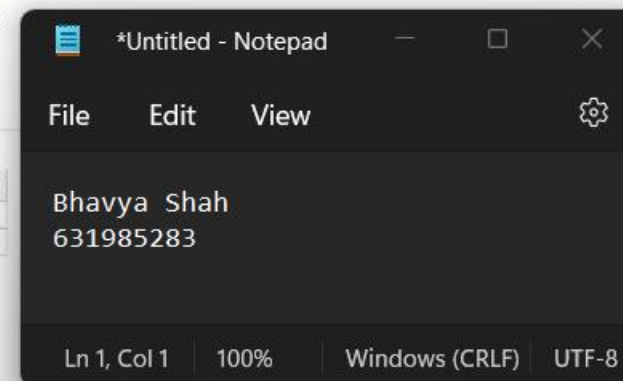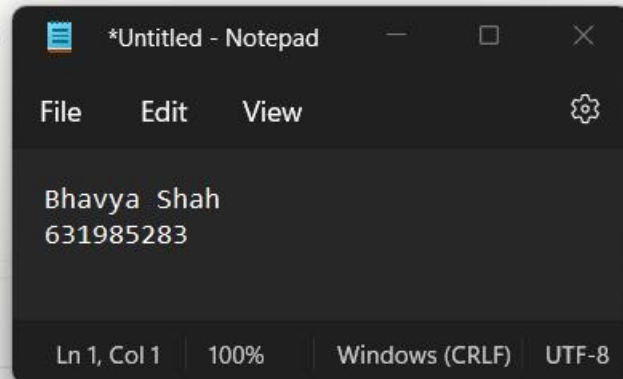| isbn	title	price	pages	pub_no
1	372317842	Introduction to Money Launde…	29.95	367	101
2	472325845	Imbezzle Like a Pro	34.95	670	101
3	535621977	The Internet Scammer's Bible	44.95	944	102
4	635619239	Art of the Ponzi Scheme	39.95	450	102

```
71   drop table if exists fb_publishers
72   go
73
74   select distinct pub_no, pub_name, pub_website
75   into fb_publishers
76   from fudgenbooks_1nf
77
78   go
79   alter table fb_publishers
80      alter column pub_no int not null
81   go
82   alter table fb_publishers
83      add constraint pk_fb_publishers primary key (pub_no)
84   go
85   select *
86   from fb_publishers
87   go
88
89
```

Results   Messages

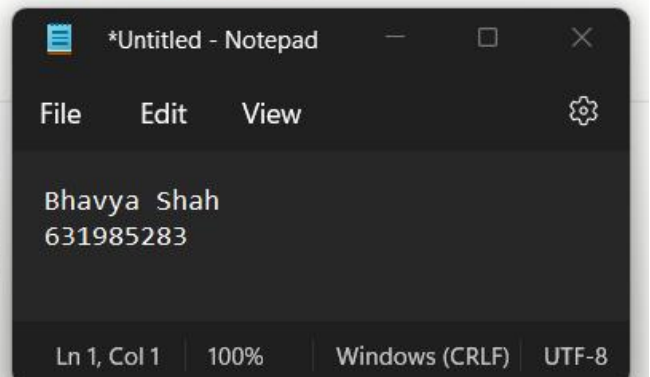| pub_no	pub_name	pub_website
1	101	Rypoff	http://www.rypoffpublishing…
2	102	BS Press	http://www.bspress.com/books

2. Provide a screenshot of your adding foreign keys in step 4 and a separate screenshot of your code to drop the foreign keys.

```
 92   alter table fb_book_authors add
 93       constraint fb_book_authors_isbn foreign key (isbn) references fb_books(isbn),
 94       constraint fk_fb_book_author_name foreign key (author_name) references fb_authors(author_name)
 95
 96   alter table fb_book_subjects add
 97       constraint fb_book_subjects_isbn foreign key (isbn) references fb_books(isbn),
 98       constraint fk_book_subjects_subjects foreign key (subject) references fb_subjects(subject)
 99
100   alter table fb_books add
101       constraint fk_books_pub_no foreign key (pub_no) REFERENCES fb_publishers(pub_no)
102
103
104   if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fk_books_pub_no')
105       alter table fb_books drop fk_books_pub_no
106
107   if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fb_book_subjects_isbn')
108     | alter table fb_book_subjects drop fb_book_subjects_isbn
109
110   if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fk_book_subjects_subjects')
111       alter table fb_book_subjects drop fk_book_subjects_subjects
112
113   if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fb_book_authors_isbn')
114       alter table fb_book_authors drop fb_book_authors_isbn
115
116   if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fk_fb_book_author_name')
117       alter table fb_book_authors drop fk_fb_book_author_name
118
119   GO
120   select * from INFORMATION_SCHEMA.TABLES
121   where TABLE_NAME like 'fb_%'
122
```

Results   Messages

TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	TABLE_TYPE
1	demo	dbo	fb_book_authors	BASE TABLE
2	demo	dbo	fb_book_subjects	BASE TABLE
3	demo	dbo	fb_books	BASE TABLE
4	demo	dbo	fb_publishers	BASE TABLE

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Normalize the **xyz_consulting** database. You can get this script in the same place you got this lab.
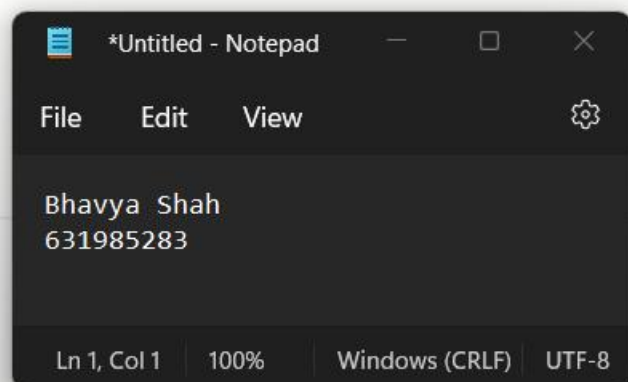
3. Provide a screenshot of your migration scripts (if any) to 1NF

```
124
125   drop table if exists xyz_projects
126   go
127   select distinct project_id, project_name
128   into xyz_projects
129   from xyz_consulting
130   go
131   alter table xyz_projects
132       add constraint pk_xyz_projects primary key (project_id)
133   go
134   select *
135   from xyz_projects
136
137
```

Results   Messages

project_id	project_name
1	1023	Madagascar travel site
2	1056	Online estate agency
3	1099	Open travel network

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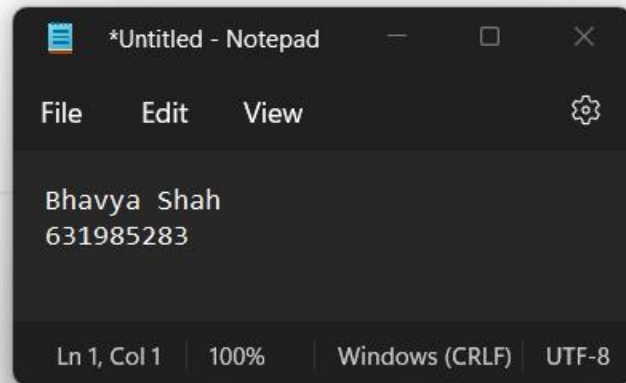Ln 1, Col 1   100%   Windows (CRLF)   UTF-8

4. Provide a screenshot of your migration scripts (if any) to 2NF

```
139
140   drop table if exists xyz_employees
141   go
142   select distinct employee_id, employee_name
143   into xyz_employees
144   from xyz_consulting
145   go
146   alter table xyz_employees
147      add constraint pk_xyz_employees primary key (employee_id)
148   go
149   select *
150   from xyz_employees
151
```

Results   Messages

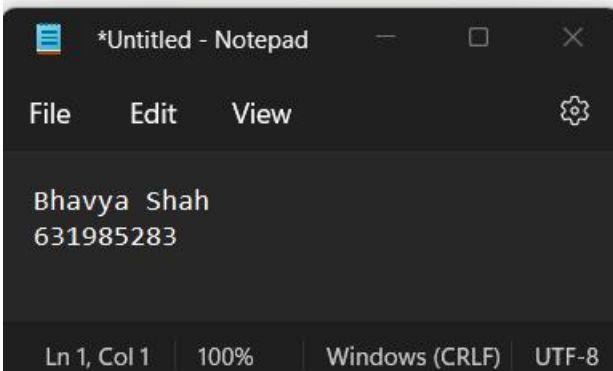|	employee_id	employee_name
1	11	Carol Ling
2	12	Chip Atooth
3	14	Arnie Hurtz
4	16	Charlie Horse
5	17	Avi Maria

5. Provide a screenshot of your migration scripts (if any) to 3NF

```
154   drop table if exists xyz_consulting_2nf
155   go
156   select distinct project_id, employee_id, rate_category, rate_amount, billable_hours, total_billed
157   into xyz_consulting_2nf
158   from xyz_consulting
159   go
160   alter table xyz_consulting_2nf
161      add constraint pk_xyz_consulting_2nf primary key (project_id, employee_id)
162   go
163   select *
164   from xyz_consulting_2nf|
165
166
```

Results   Messages

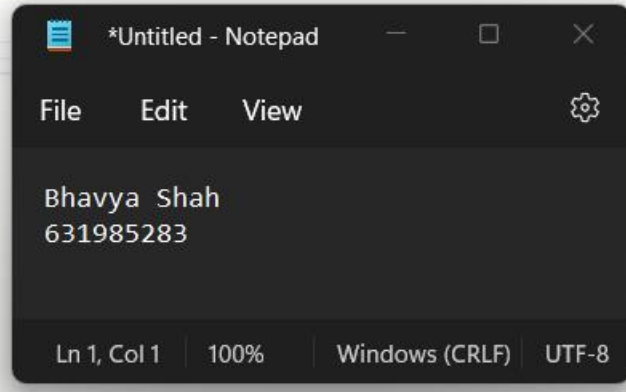|	project_id	employee_id	rate_category	rate_amount	billable_hours	total_billed
1	1023	11	A	60.00	5	300.00
2	1023	12	B	50.00	10	500.00
3	1023	16	C	40.00	2	88.00
4	1056	11	D	90.00	5	450.00
5	1056	17	B	50.00	2	100.00
6	1099	11	A	60.00	6	360.00
7	1099	12	C	40.00	8	320.00
8	1099	14	D	90.00	3	270.00

6. Provide a list of tables in 3NF

```
169  drop table if exists xyz_rates
170  go
171  select distinct rate_category, rate_amount into xyz_rates
172  from xyz_consulting_2nf
173  go
174  alter table xyz_rates
175      add constraint pk_xyz_rates primary key (rate_category)
176  go
177  select *
178  from xyz_rates
179  |
180
```

Results   Messages

	rate_category	rate_amount
1	A	60.00
2	B	50.00
3	C	40.00
4	D	90.00

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7. Add all foreign keys back to the new model.

```
197  alter table xyz_consulting_3nf add
198      constraint fk_xyz_consulting_projects foreign key (project_id) REFERENCES xyz_projects(project_id)
199  go
200  alter table xyz_consulting_3nf add
201      constraint fk_xyz_consulting_employees foreign key (employee_id) REFERENCES xyz_employees(employee_id)
202  go
203  alter table xyz_consulting_3nf add
204      constraint fk_xyz_consulting_rates foreign key (rate_category) REFERENCES xyz_rates(rate_category)
205  go
206
207  if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fk_xyz_consulting_projects')
208      alter table xyz_consulting_3nf drop fk_xyz_consulting_projects
209
210  if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fk_xyz_consulting_employees')
211      alter table xyz_consulting_3nf drop fk_xyz_consulting_employees
212
213  if exists (select * from INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE where CONSTRAINT_NAME = 'fk_xyz_consulting_rates')
214      alter table xyz_consulting_3nf drop fk_xyz_consulting_rates
215  go
216
217
```
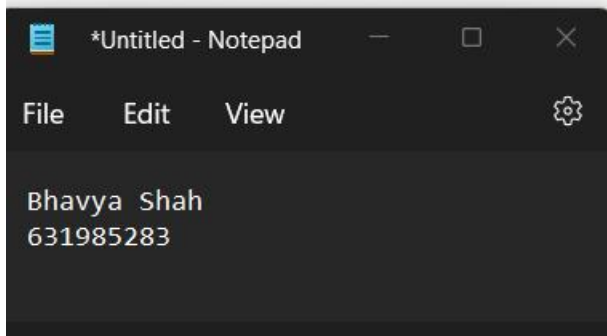
Messages

```
11:50:29 PM    Started executing query at Line 196
               Commands completed successfully.
11:50:29 PM    Started executing query at Line 200
               Commands completed successfully.
11:50:29 PM    Started executing query at Line 203
               Commands completed successfully.
11:50:29 PM    Started executing query at Line 206
               Commands completed successfully.
               Total execution time: 00:00:00.166
```

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Reflection

Use this section to reflect on your learning. To achieve the highest grade on the assignment you must be as descriptive and personal as possible with your reflection.

1. What are the key things you learned through the process of completing this assignment?
Ans – normal forms and data dependencies

2. What were the challenges or roadblocks (if any) you encountered on the way to completing it?
Ans – understanding and implementation of normal forms

3. Were you prepared for this assignment? What can you do to be better prepared?
Ans – I was partially prepared.

4. Now that you have completed the assignment rate your comfort level with this week's material. This should be an honest assessment: (choose one)

   2 ==> I somewhat understand the material but sometimes need guidance from others.