



Assignment 2 - Clinical trials

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Agenda

- Conditions
- Evolution of Database
- ER Diagram
- Challenges
- Queries/Stores
- PHP Application

Conditions



- ALS
- Neurological disorders
- Narcolepsy

Find a study (all fields optional)

Status ⓘ

- ☐ Recruiting and not yet recruiting studies
- ☒ All studies

Condition or disease ⓘ (For example: breast cancer)

X

Other terms ⓘ (For example: NCT number, drug name, investigator name)

X

Country ⓘ

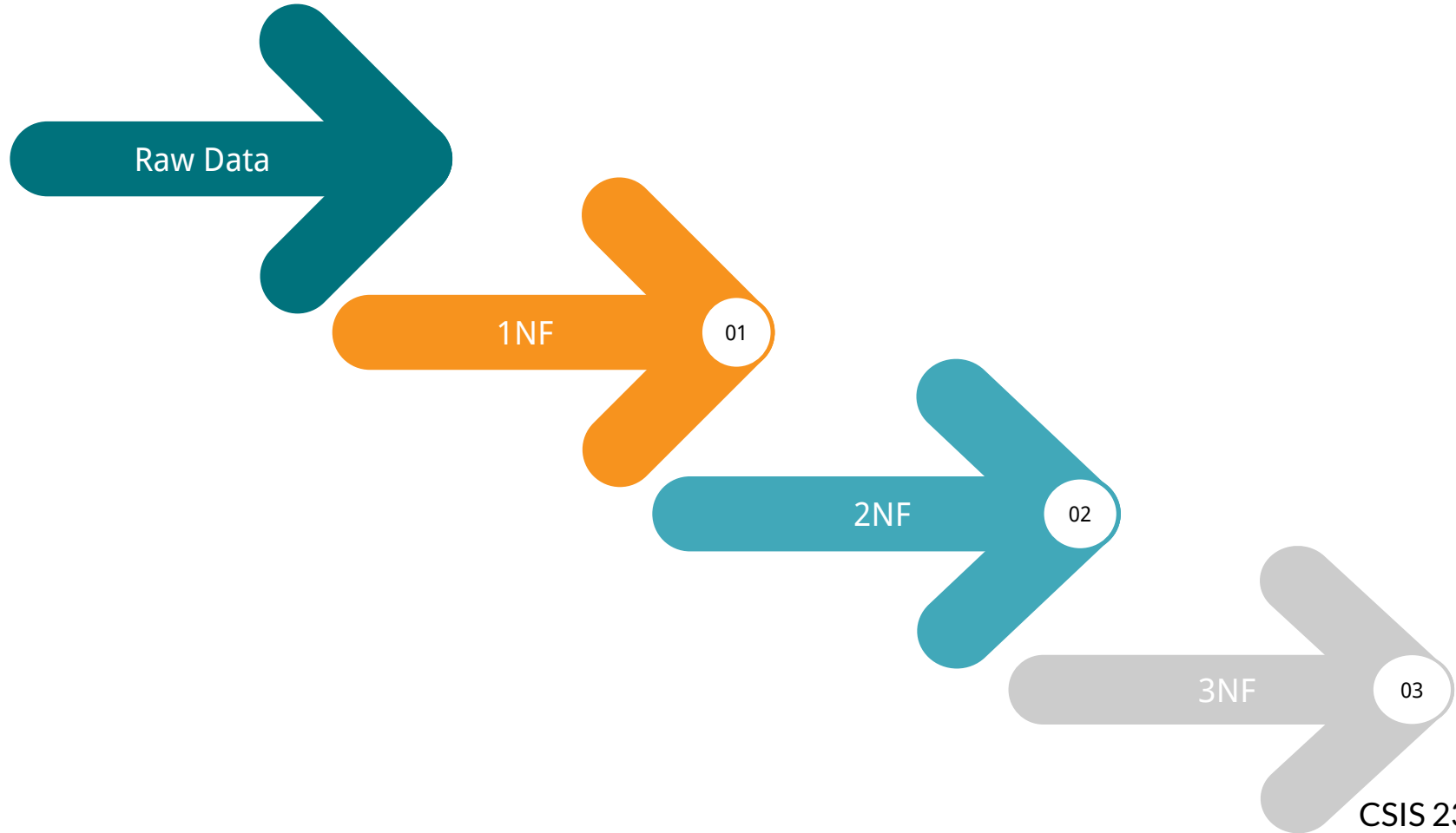
⬆ ⬆ X

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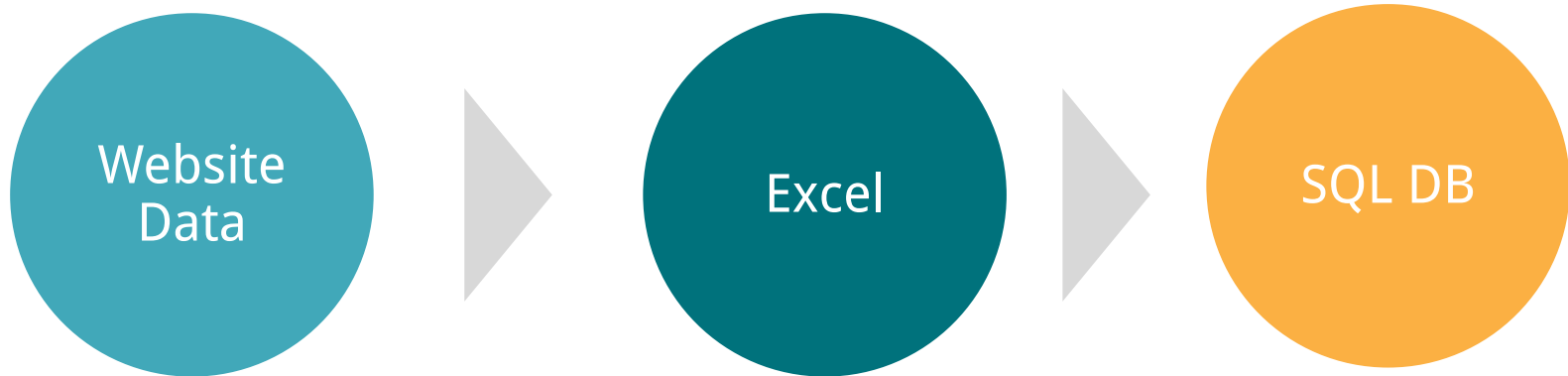
Evolution of Database



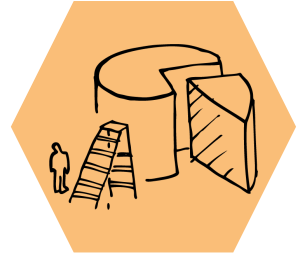
Evolution of Database - Raw Data



- Conceptualization and asset data
- Extract from website to excel to SQL
- Build out and clean up data for basic DB design



Evolution of Database - 1NF



- Clean up data
 - Columns with multiple values (IE: location)
 - Create consistency in Age value

Locations:

- Sumida Hospital
Sumida-ku, Tokyo, Japan
- Hakata Clinic
Fukuoka, Japan
- PS Clinic
Fukuoka, Japan

Neurological_Disorder (dbo)

Rank
🔑 _NCT_Number_
Title
Acronym
Status
_Study_Results_
Conditions
Interventions
_Outcome_Measures_
_Sponsor_Collaborators_
Gender
Age
Phases
Enrollment
_Funded_Bys_
_Study_Type_
_Study_Designs_
_Other_IDs_
_Start_Date_
_Primary_Completion_Date_
_Completion_Date_
_First_Posted_
_Results_First_Posted_
_Last_Update_Posted_
Locations
_Study_Documents_
URL

Narcolepsy (dbo)

Rank
🔑 _NCT_Number_
Title
Acronym
Status
_Study_Results_
Conditions
Interventions
_Outcome_Measures_
_Sponsor_Collaborators_
Gender
Age
Phases
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_Start_Date_
_Primary_Completion_Date_
_Completion_Date_
_First_Posted_
_Results_First_Posted_
_Last_Update_Posted_
Locations
_Study_Documents_
URL

ALS (dbo)

Rank
🔑 NCT_Number
Title
Acronym
Status
Study_Results
Conditions
Interventions
Outcome_Measures
Sponsor_Collaborators
Gender
Age
Phases
Enrollment
Funded_Bys
Study_Type
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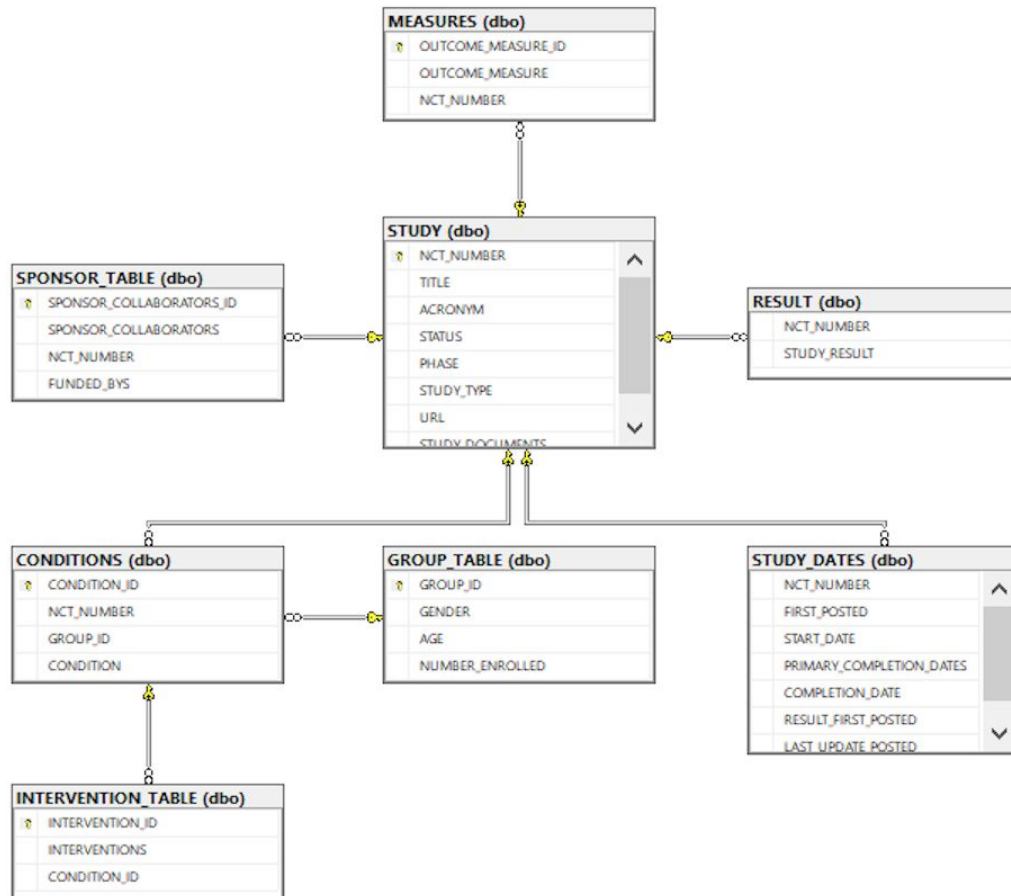
Evolution of Database - 2NF



- Break down into logical entities tables
- Ensure no non-prime attribute is dependent on the proper subset of any candidate key of the table.
 - Created Foreign Key: *Intervention_ID*

Evolution of Database - 2NF Diagram

Narcolepsy (dbo) *	
	Rank
	↑ _NCT_Number_
	Title
	Acronym
	Status
	_Study_Results_
	Conditions
	Interventions
	_Outcome_Measures_
	_Sponsor_Collaborators_
	Gender
	Age
	Phases
	Enrollment
	_Funded_By_
	_Study_Type_
	_Study_Designs_
	_Other_IDs_
	_Start_Date_
	_Primary_Completion_Date_
	_Completion_Date_
	_First_Posted_
	_Results_First_Posted_
	_Last_Update_Posted_
	Locations
	_Study_Documents_
	URL

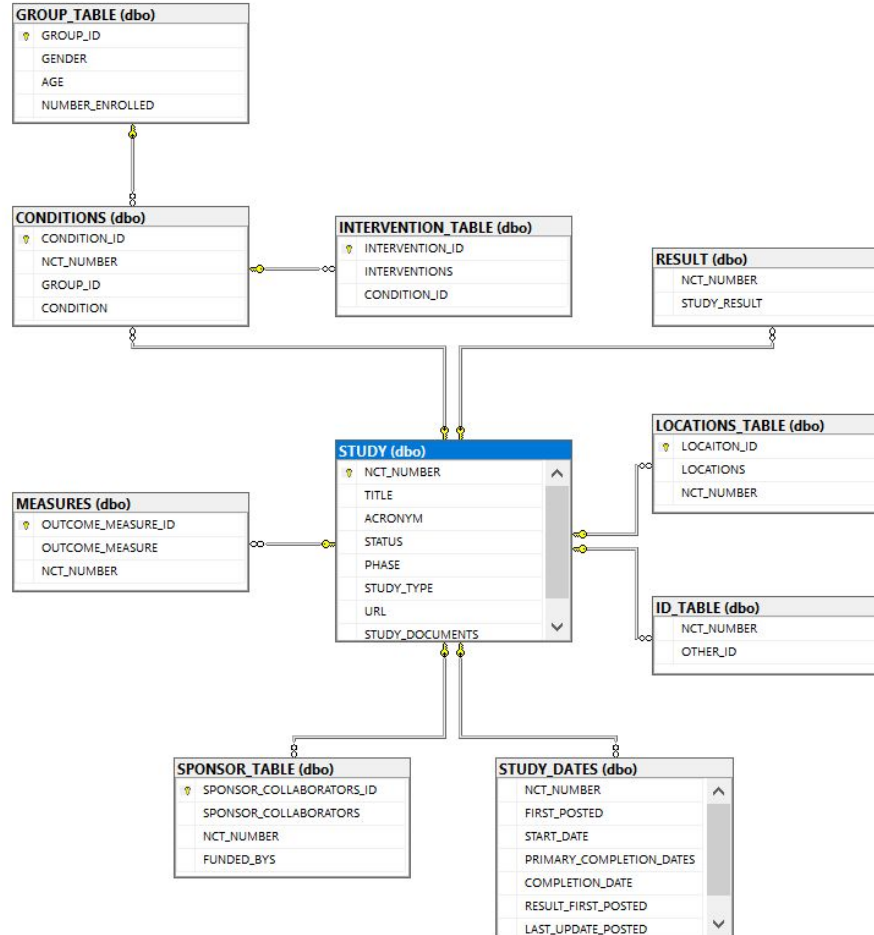




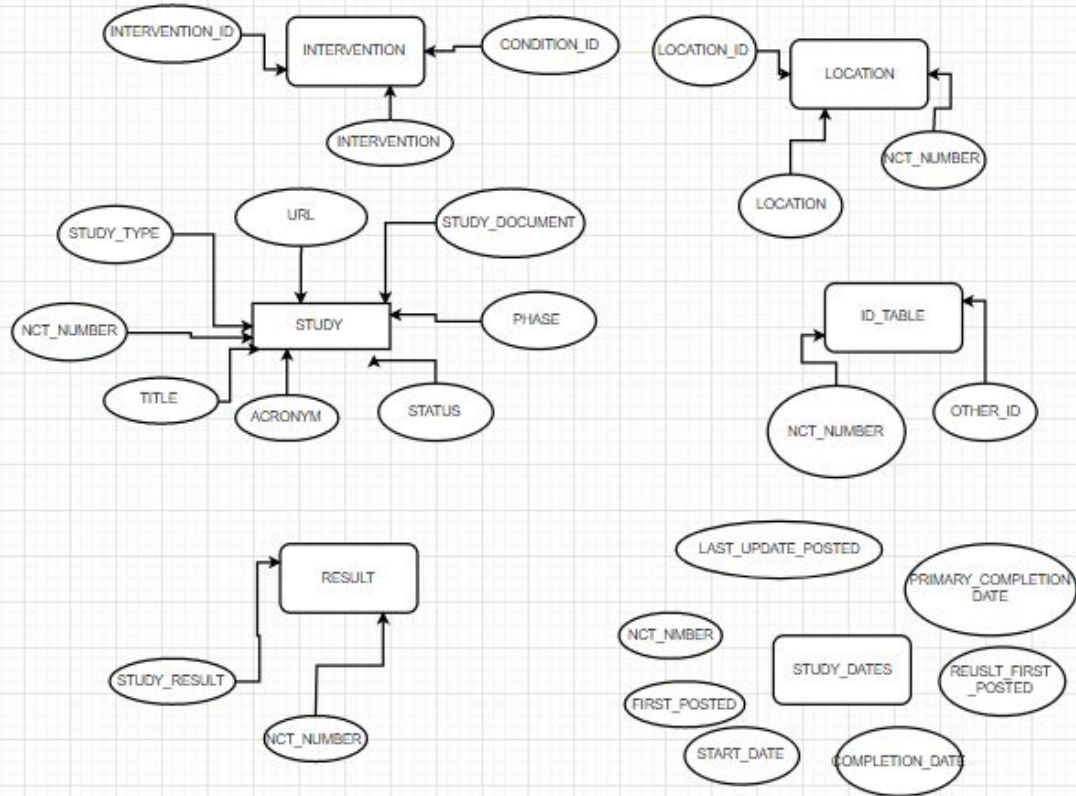
Evolution of Database - 3NF

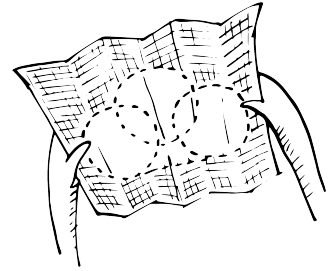
- Created more tables
 - ID_TABLE
 - Locations_TABLE
- Ensure that there is no transitive dependency

Evolution of Database - 3NF Diagram



Entity- Relationship Diagram



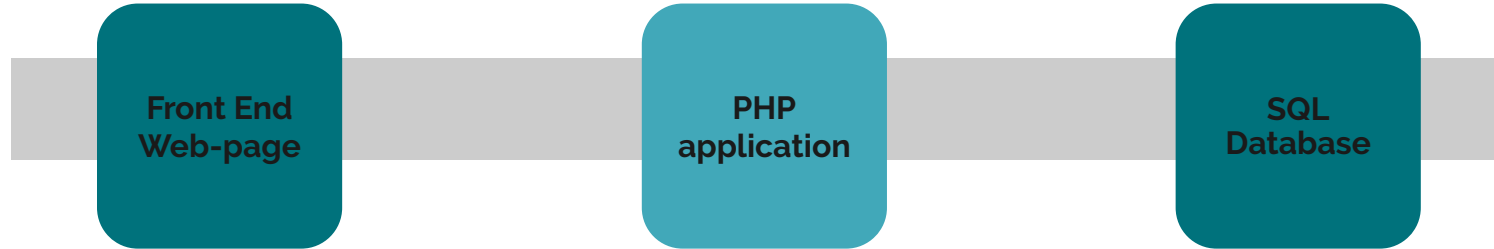


Issues

- Transforming data into SQL Server
- Applying our business logic to the Database design
- Insert data into the tables
- PHP Application (Driver for mac)



PHP application



Please select your Condition

- ☒ ALS
☐ Narcolepsy

Submit

```
$tsql = "SELECT  
NCT_NUMBER FROM  
Narcolepsy";
```




Queries/Stores

- Created Cursor to input values
 - Declare Variables so we pass values over
- Dealing with multiple values in the datacell

Queries/Stores

DECLARE

```
@NCT_NUMBER NVARCHAR(50),  
@TITLE NVARCHAR(200),  
@ACRONYM NVARCHAR(50),  
@STATUS NVARCHAR(50) ,  
@PHASE NVARCHAR(50),  
@STUDY_TYPE NVARCHAR(50),  
@URL NVARCHAR(50),  
@STUDY_DOCUMENT NVARCHAR(200)
```

DECLARE STUDY_CURSOR CURSOR FOR

```
SELECT NCT_NUMBER,  
TITLE,  
ACRONYM,  
STATUS,  
PHASE,  
STUDY_TYPE ,  
URL ,  
STUDY_DOCUMENT
```

FROM NARCOLEPSY

OPEN STUDY_CURSOR

FETCH NEXT FROM STUDY_CURSOR INTO

```
@NCT_NUMBER ,  
@TITLE ,  
@ACRONYM ,  
@STATUS ,  
@PHASE ,  
@STUDY_TYPE ,  
@URL ,  
@STUDY_DOCUMENT
```

WHILE @@FETCH_STATUS = 0

BEGIN

INSERT INTO STUDY

```
SELECT @NCT_NUMBER,  
@TITLE ,  
@ACRONYM ,  
@STATUS ,  
@PHASE ,  
@STUDY_TYPE ,  
@URL ,  
@STUDY_DOCUMENT
```

FETCH NEXT FROM STUDY_CURSOR INTO

@NCT_NUMBER,

@TITLE,

@ACRONYM ,

@STATUS ,

@PHASE ,

@STUDY_TYPE ,

@URL ,

@STUDY_DOCUMENT

END

CLOSE STUDY_CURSOR

DEALLOCATE STUDY_CURSOR

GO





Questions?