

Brant S, Isabel D, Jarron D.
Professor DeGood, J.
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CSC 315 Databases

Project Part 4

1st Normal Form:

ANIMAL: 1NF

ANIMAL

| | | | | | | | | | | | | |
|------------------|------------|-------------|------------------|-----|--------|-----------|--------|-------|------|-----|-----|--------------|
| <u>Animal id</u> | <u>rfd</u> | last_weight | last_weight_date | sex | status | donor_dam | weaned | Breed | Sire | DOB | dam | animal_group |
|------------------|------------|-------------|------------------|-----|--------|-----------|--------|-------|------|-----|-----|--------------|

ANIMAL FEATURES

| | |
|-------------|-------|
| <u>note</u> | color |
|-------------|-------|

Session Animal Activities: 1NF

Session Animal Activities

| | |
|-------------------|------------------|
| <u>session_id</u> | <u>animal_id</u> |
|-------------------|------------------|

Activities Events

| | |
|----------------------|---------------|
| <u>activity_code</u> | when_measured |
|----------------------|---------------|

Session Animal Traits: 1NF

Session Animal Traits

| | | | |
|-------------------|------------------|-------------|-------------|
| <u>session_id</u> | <u>animal_id</u> | alpha_value | alpha_units |
|-------------------|------------------|-------------|-------------|

Session Events

| | |
|-------------------|---------------|
| <u>trait_code</u> | when_measured |
|-------------------|---------------|

PickList: 1NF

| | |
|--------------------|-------------------------|
| <u>picklist_id</u> | <u>picklistvalue_id</u> |
|--------------------|-------------------------|

PickList Features

| |
|--------------|
| <u>value</u> |
|--------------|

Note: 1NF

Note

| |
|------------------|
| <u>animal_id</u> |
|------------------|

Note features

| |
|-------------|
| <u>note</u> |
|-------------|

2nd Normal Form:

ANIMAL: 2NF

Animal

| | | | | | | | | | | | | | | |
|------------------|-------------|-------------|------------------|-----|--------|------------|------|--------|-------|-------|------|-----|-----|--------------|
| <u>animal_id</u> | <u>rfid</u> | last weight | last weight date | sex | status | Don or dam | note | weaned | color | breed | sire | DOB | dam | animal_group |
|------------------|-------------|-------------|------------------|-----|--------|------------|------|--------|-------|-------|------|-----|-----|--------------|

SESSION ANIMAL ACTIVITIES: 2NF

Session Animal Activities

| | | |
|-------------------|------------------|--------------------|
| <u>Session_id</u> | <u>animal_id</u> | <u>activity_id</u> |
|-------------------|------------------|--------------------|

SessionActivitiesWeight

| | |
|-------------------|---------------|
| <u>Session_id</u> | when_measured |
|-------------------|---------------|

SESSION ANIMAL TRAITS: 2NF

Session Animal Traits

| | | |
|-------------------|------------------|-------------------|
| <u>session_id</u> | <u>animal_id</u> | <u>trait_code</u> |
|-------------------|------------------|-------------------|

SessionTraitsWeight

| | |
|-------------------|---------------|
| <u>session_id</u> | when_measured |
|-------------------|---------------|

SessionTraitsAlphas

| | | |
|-------------------|------------|-------------|
| <u>trait_code</u> | alpha_unit | alpha_value |
|-------------------|------------|-------------|

PICKLIST VALUE: 2NF

Picklist Value

| | | |
|--------------------|-------------------------|-------|
| <u>picklist_id</u> | <u>picklistvalue_id</u> | value |
|--------------------|-------------------------|-------|

NOTE: 2NF

| | |
|------------------|------|
| <u>animal_id</u> | note |
|------------------|------|

3rd Normal Form:

Animal: 3NF

| | | | | | | | | | | | | | |
|------------------|-------------|-------------|------------------|-----|--------|------------|------|--------|--------|------|-----|-----|--------------|
| <u>animal_id</u> | <u>rfid</u> | last weight | last weight date | sex | status | Don or dam | note | weaned | colour | sire | DOB | dam | animal_group |
|------------------|-------------|-------------|------------------|-----|--------|------------|------|--------|--------|------|-----|-----|--------------|

| | |
|-----------------|-------|
| <u>breed_id</u> | breed |
|-----------------|-------|

SESSION ANIMAL ACTIVITIES: 3NF

| | | | |
|-------------------|------------------|----------------------|---------------|
| <u>session_id</u> | <u>animal_id</u> | <u>activity_code</u> | when_measured |
|-------------------|------------------|----------------------|---------------|

SESSION ANIMAL TRAITS: 3NF

Session Animal Traits

| | | | |
|-------------------|------------------|-------------------|---------------|
| <u>session_id</u> | <u>animal_id</u> | <u>triat_code</u> | when_measured |
|-------------------|------------------|-------------------|---------------|

AlphaValues

| | | |
|-----------------|-------------|-------------|
| <u>Alpha_id</u> | alpha_units | alpha_value |
|-----------------|-------------|-------------|

PICKLIST VALUE: 3NF

| | | |
|--------------------|-------------------------|-------|
| <u>picklist_id</u> | <u>picklistvalue_id</u> | value |
|--------------------|-------------------------|-------|

NOTE: 3NF

| | |
|------------------|------|
| <u>animal_id</u> | note |
|------------------|------|

BCNF:

For all of our entities, we mapped out how to convert each one into 1NF, 2NF, and 3NF. The tables being in 3NF is the first step to becoming Boyce Codd Normal form. Looking at our tables, none of them have any remaining functional dependencies in 3NF. There are no attributes dependent on non-keys, and all of the determinants are candidate keys. This being said, all of our tables are in BCNF at this point.