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Databases Final Project Schema Diagram

Difficulty Grade with Numbers Table:

difficulty_numbers = (difficulty_grade, numeric)

Functional Dependencies: difficulty_grade \rightarrow numeric, numeric \rightarrow difficulty_grade

{difficulty_grade}⁺ = *entire table*

difficulty_grade is key

In 4NF because there are only two attributes.

Danger Grade with Numbers Table:

danger_numbers = (danger_grade, numeric)

Functional Dependencies: danger_grade \rightarrow numeric, numeric \rightarrow danger_grade

{danger_grade}⁺ = *entire table*

danger_grade is key

In 4NF because there are only two attributes.

Commitment Grade with Numbers Table:

Commitment_numbers = (commitment_grade, numeric)

Functional Dependencies: commitment_grade \rightarrow numeric, numeric \rightarrow commitment_grade

{commitment_grade}⁺ = *entire table*

commitment_grade is key

In 4NF because there are only two attributes.

Users Table:

users = (id, display_name, start_date, age, other_interests, points)

Functional Dependencies: id \rightarrow display_name, start_date, age, other_interests, points.

Multivalued Dependencies: None

$\{id\}^+ = \text{*entire table*}$

id is key.

In 4NF because functional dependences are all key on the left, and no multivalued dependencies.

Routes Table:

routes = (id, name, area_id, description, location, protection, difficulty_rating, danger_rating, commitment_rating, length, pitches, first_accident, shared_by_id, shared_on, views)

Functional Dependencies: $id \rightarrow$ name, area_id, description, location, protection, difficulty_rating, danger_rating, commitment_rating, length, pitches, first_accident, shared_by_id, shared_on, views.

Multivalued Dependencies: None

$\{id\}^+ = \text{*entire table*}$

id is key.

In 4NF because functional dependences are all key on the left, and no multivalued dependencies.

Areas Table:

areas = (id, name, description, getting_there, parent_area_id, elevation, corodinales, shared_by_id, shared_on, views)

Functional Dependencies: $id \rightarrow$ name, description, getting_there, parent_area_id, elevation, corodinales, shared_by_id, shared_on, views.

Multivalued Dependencies: None

$\{id\}^+ = \text{*entire table*}$

id is key.

In 4NF because functional dependences are all key on the left, and no multivalued dependencies.

Star Ratings Table:

star_ratings = (user_id, route_id, star_rating)

Functional Dependencies $user_id, route_id \rightarrow star_rating$.

Multivalued Dependencies: None

$\{user_id, route_id\}^+ = *entire\ table*$

$user_id, route_id$ is key.

In 4NF because functional dependences are all key on the left, and no multivalued dependencies.

Difficulty Ratings Table:

$difficulty_ratings = (user_id, route_id, difficulty_rating, danger_rating, aid_rating)$

Functional dependencies: $user_id, route_id \rightarrow difficulty_rating, danger_rating, aid_rating$.

Multivalued Dependencies: None.

$\{user_id, route_id\}^+ = *entire\ table*$

$User_id, route_id$ is key.

In 4NF because functional dependences are all key on the left, and no multivalued dependencies.

Route Types Table:

$route_types = (route_id, type)$

No functional dependencies.

$route_id, type$ is key.

In 4NF because the relationship has only two attributes.

Todos Table:

$todos = (user_id, route_id)$

No functional dependencies.

$user_id, route_id$ is key.

In 4NF because the relationship has only two attributes.

Ticks Table:

$ticks = (id, user_id, route_id, date, pitches, style, secondary_style, notes)$

Functional Dependencies: $\text{id} \rightarrow \text{user_id}, \text{route_id}, \text{date}, \text{pitches}, \text{style}, \text{secondary_style}, \text{notes}$.

Multivalued Dependencies: None.

$\{\text{id}\}^+ = \text{*entire table*}$

id is key.

In 4NF because functional dependencies are all key on the left, and no multivalued dependencies.

Admins Areas Table:

admins_areas = (user_id, area_id)

No functional dependencies.

user_id, area_id is key.

In 4NF because the relationship has only two attributes.

Classics Table:

Classic = (route_id, area_id)

No functional dependencies.

route_id, area_id is key.

In 4NF because the relationship has only two attributes.

