

1) **Movies** = (movies_id, title, release_date, budget, box_office, runtime, tagline, description, rating, status)

movies_id → title, release_date, budget, box_office, runtime, tagline, description, rating, status

Canonical cover

movies_id → title

movies_id → release_date

movies_id → budget

movies_id → box_office

movies_id → runtime

movies_id → tagline

movies_id → description

movies_id → rating

movies_id → status

Candidate key: (movies_id)+ = movies_id, title, release_date, budget, box_office, runtime, tagline, description, rating, status = Movies

No 3NF, BCNF, 4NF violations

2) **Languages** = (code, name)

code → name

Canonical cover

code → name

Candidate key: (code)+ = code, name = Languages

No 3NF, BCNF, 4NF violations

3) **Person** = (ID, first_name, last_name, date_of_birth, gender)

ID → first_name, last_name, date_of_birth, gender

Canonical cover

ID → first_name

ID → last_name

ID → date_of_birth

ID → gender

Candidate key: (ID)+ = ID, first_name, last_name, date_of_birth, gender = Person

No 3NF, BCNF, 4NF violations

4) **Jobs** = (job_ID, job_title, dept_name)

job_ID → job_title, dept_name

Canonical cover

job_ID → job_title

job_ID → dept_name

Candidate key: (job_ID)+ = job_ID, job_title, dept_name = Jobs

No 3NF, BCNF, 4NF violations

5) **Tv_show** = (tv_show_ID, title, description, status, primary_language)

tv_show_ID → title, description, status, primary_language

Canonical cover

tv_show_ID → title

tv_show_ID → description

tv_show_ID → status

tv_show_ID → primary_language

Candidate key: (tv_show_ID)+ = tv_show_ID, title, description, status, primary_language = Tv_show

No 3NF, BCNF, 4NF violations

6) **Seasons** = (season_ID, season_number, release_date, status, tv_show_ID)

season_ID → season_number, release_date, status, tv_show_ID

Canonical cover

season_ID → season_number

season_ID → release_date

season_ID → status

season_ID → tv_show_ID

Candidate key: (season_ID)+ = season_ID, season_number, release_date, status, tv_show_ID = Seasons

No 3NF, BCNF, 4NF violations

7) **Episodes** = (episode_ID, title, runtime, release_date, budget, description, season_id)

episode_ID → title, runtime, release_date, budget, description, season_id

Canonical cover

episode_ID → title

episode_ID → runtime

episode_ID → release_date

episode_ID → budget

episode_ID → description

episode_ID → season_id

Candidate key: (episode_ID)+ = episode_ID, title, runtime, release_date, budget, description, season_id = Episodes

No 3NF, BCNF, 4NF violations

8) **Genres** = (genre_ID, name)

genre_ID → name

Canonical cover

genre_ID → name

Candidate key: (genre_ID)+ = genre_ID, name = Genres

No 3NF, BCNF, 4NF violations

9) **Countries** = (code, name)

code → name

Canonical cover

code → name

Candidate key: (code)+ = code, name = Countries

No 3NF, BCNF, 4NF violations

10) **Companies** = (company_ID, name)

company_ID → name

Canonical cover

$\text{company_ID} \rightarrow \text{name}$

Candidate key: $(\text{company_ID})^+ = \text{company_ID}, \text{name} = \text{Companies}$

No 3NF, BCNF, 4NF violations

11) **Award_types** = (award_type_ID, award_type)

$\text{award_type_ID} \rightarrow \text{award_type}$

Canonical cover

$\text{award_type_ID} \rightarrow \text{award_type}$

Candidate key: $(\text{award_type_ID})^+ = \text{award_type_ID}, \text{award_type} = \text{Award_types}$

No 3NF, BCNF, 4NF violations

12) **Awards** = (award_ID, award_category, award_type)

$\text{award_ID} \rightarrow \text{award_category}, \text{award_type}$

Canonical cover

$\text{award_ID} \rightarrow \text{award_category}$

$\text{award_ID} \rightarrow \text{award_type}$

Candidate key: $(\text{award_ID})^+ = \text{award_ID}, \text{award_category}, \text{award_type}$

No 3NF, BCNF, 4NF violations

Many-to-many relationships

1) **Tv_show_stars** = (tv_show_ID, person_ID, character_name)

$(\text{tv_show_ID}, \text{person_ID}) \rightarrow \text{character_name}$

Canonical cover

$(\text{tv_show_ID}, \text{person_ID}) \rightarrow \text{character_name}$

Candidate key: $(\text{tv_show_ID}, \text{person_ID})^+ = \text{tv_show_ID}, \text{person_ID}, \text{character_name} = \text{Tv_show_stars}$

No 3NF, BCNF, 4NF violations

2) **Movie_crew** = (movie_ID, person_ID, job_ID)

movie_ID, person_ID, job_ID $\rightarrow \emptyset$

There are no non-key attributes, so no nontrivial FDs exist

Candidate key: (movie_ID, person_ID, job_ID)+ = movie_ID, person_ID, job_ID = Movie_crew

No 3NF, BCNF, 4NF violations

3) **Movie_genre** = (movie_ID, genre_ID)

movie_ID, genre_ID $\rightarrow \emptyset$

No non-prime attributes, so no FDs with non-key attributes

Candidate key: (movie_ID, genre_ID)+ = movie_ID, genre_ID = Movie_genre

No 3NF, BCNF, 4NF violations

All of the many-to-many tables follow one of these three examples