

ASSIGNMENT 1B- Full Database Model and Implementation-MAU

TASK 1: Normalisation to 3NF

MAU ArtWork Status History Reports

Based on Sample 1 & 2:

UNF:

ARTWORK(artwork_no, artwork_title, artist_code, artist_name, date_added_to_stock, (date, artwork_status, gallery_ID, gallery_name))

INF:

ARTWORK(artwork_no, artist_code, artwork_title, artist_name, date_added_to_stock)
CURRENT_STATUS(artwork_no, artist_code, date, artwork_status, gallery_ID, gallery_name)

Partial Dependencies:

- artist_code → artist_name

2NF:

ARTWORK(artwork_no, artist_code, artwork_title, date_added_to_stock)
ARTIST(artist_code, artist_name)
CURRENT_STATUS(artwork_no, artist_code, date, artwork_status, gallery_ID, gallery_name)

Transitive dependencies:

- gallery_ID → gallery_name

3NF:

ARTWORK(artwork_no, artist_code, artwork_title, date_added_to_stock)
ARTIST(artist_code, artist_name)
CURRENT_STATUS(artwork_no, artist_code, date, artwork_status, gallery_ID)
GALLERY(gallery_ID, gallery_name)

Full dependencies:

- artwork_no, artist_code → artwork_title, date_added_to_stock
- artist_code → artist_name
- artwork_no, artist_code, date → artwork_status, gallery_ID
- gallery_ID → gallery_name

Sample MAU GalleryDisplay Report

UNF:

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state, gallery_opens, gallery_closes, (artist_code, artwork_no, artwork_title, artist_name, date_exhibition_started, date_exhibition_ended, featured_in_catalog))

INF:

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state, gallery_opens, gallery_closes)

EXHIBITION(artist_code, artwork_no, date_exhibition_started, artwork_title, artist_name, date_exhibition_ended, featured_in_catalog, gallery_id)

Partial Dependencies:

- artist_code → artist_name
- artist_code, artwork_no → artwork_title

2NF:

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state, gallery_opens, gallery_closes)

EXHIBITION(artist_code, artwork_no, date_exhibition_started, date_exhibition_ended, featured_in_catalog, gallery_id)

ARTIST(artist_code, artist_name)

ARTWORK(artist_code, artwork_no, artwork_title)

Transitive dependencies:

- No Transitive Dependencies

3NF:

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state, gallery_opens, gallery_closes)

EXHIBITION(artist_code, artwork_no, date_exhibition_started, date_exhibition_ended, featured_in_catalog, gallery_id)

ARTIST(artist_code, artist_name)

ARTWORK(artist_code, artwork_no, artwork_title)

Full dependencies:

- gallery_id → gallery_name, gallery_street, gallery_town, gallery_state, gallery_opens, gallery_closes
- artist_code, artwork_no, date_exhibition_started → date_exhibition_ended, featured_in_catalog, gallery_id
- artist_code → artist_name
- artist_code, artwork_no → artwork_title

Attribute Synthesis

Collected 3NF Relations:

ARTWORK(artwork_no, artist_code, artwork_title, date_added_to_stock)

ARTIST(artist_code, artist_name)

CURRENT_STATUS(artwork_no, artist_code, date, artwork_status, gallery_ID)

GALLERY(gallery_ID, gallery_name)

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state,
gallery_opens, gallery_closes)

EXHIBITION(artist_code, artwork_no, date_exhibition_started, date_exhibition_ended,
featured_in_catalog, gallery_id)

ARTIST(artist_code, artist_name)

ARTWORK(artist_code, artwork_no, artwork_title)

Part A: Removing Redundant Tables:

ARTWORK(artwork_no, artist_code, artwork_title, date_added_to_stock)

CURRENT_STATUS(artwork_no, artist_code, date, artwork_status, gallery_ID)

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state,
gallery_opens, gallery_closes)

EXHIBITION(artist_code, artwork_no, date_exhibition_started, date_exhibition_ended,
featured_in_catalog, gallery_id)

ARTIST(artist_code, artist_name)

Part B: After Attribute Synthesis:

ARTWORK(artwork_no, artist_code, artwork_title, artwork_date_added_to_stock)

CURRENT_STATUS(artwork_no, artist_code, cs_date, cs_artwork_status, gallery_ID)

GALLERY(gallery_id, gallery_name, gallery_street, gallery_town, gallery_state,
gallery_opens, gallery_closes)

EXHIBITION(artist_code, artwork_no, exhibition_date_started, exhibition_date_ended,
exhibition_featured_in_catalog, gallery_id)

ARTIST(artist_code, artist_name)