

DATABASE DESIGN MONASH HOSPITAL (MH) (NORMALISATION)

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Monash ID: 30270111

Documents A:

UNF

PAT_ADMISSION (patient_id, patient_name, adm_datetime, supvdoctor_id, supvdoctor_name, (procedure_code, procedure_name, procedure_desc, reqdoctor_id, reqdoctor_name, doccarried_id, doccarried_name, carried_out_on, procedure_charge, (item_code, item_desc, item_quantity, item_charge), totalextras_charges)

1NF

PAT_ADMISSION (patient_id, adm_datetime, patient_name, supvdoctor_id, supvdoctor_name)

Dependency diagrams:

patient_id, adm_datetime → supvdoctor_id	FULL DEPENDENCY
patient_id → patient_name	PARTIAL DEPENDENCY
supvdoctor_id → supvdoctor_name	TRANSITIVE DEPENDENCY

PAT_PROCEDURE (patient_id, carried_out_on, adm_datetime, procedure_code, procedure_name, procedure_desc, reqdoctor_id, reqdoctor_name, doccarried_id, doccarried_name, procedure_charge, totalextras_charges)

Dependency diagrams:

patient_id, carried_out_on → procedure_code, reqdoctor_id, doccarried_id, procedure_charge, totalextras_charges	FULL DEPENDENCY
procedure_code → procedure_name, procedure_desc	TRANSITIVE DEPENDENCY
reqdoctor_id → reqdoctor_name	TRANSITIVE DEPENDENCY
doccarried_id → doccarried_name	TRANSITIVE DEPENDENCY

PAT_EITEM (patient_id, carried_out_on, item_code, adm_datetime, item_desc, item_quantity, item_charge)

Dependency diagrams:

patient_id, carried_out_on, item_code → item_quantity, item_charge	FULL DEPENDENCY
item_code → item_desc	PARTIAL DEPENDENCY

2NF

PAT_ADMISSION (patient_id, adm_datetime, supvdoctor_id, supvdoctor_name)
PATIENT (patient_id, patient_name)
PAT_PROCEDURE (patient_id, carried_out_on, adm_datetime, procedure_code, procedure_name, procedure_desc, reqdoctor_id, reqdoctor_name, doccarried_id, doccarried_name, procedure_charge, totalextras_charges)
PAT_EITEM (patient_id, carried_out_on, item_code, adm_datetime, item_quantity, item_charge)
E_ITEM (item_code, item_desc)

3NF

PAT_ADMISSION(patient_id, adm_datetime, supvdoctor_id)
SUPERV_DOCTOR (supvdoctor_id, supvdoctor_name)
PATIENT (patient_id, patient_name)
PAT_PROCEDURE (patient_id, carried_out_on, adm_datetime, procedure_code, reqdoctor_id, doccarried_id, procedure_charge, totalextras_charges)
PROCEDURE (procedure_code, procedure_name, procedure_desc)
REQ_DOCTOR (reqdoctor_id, reqdoctor_name)
DOC_CARRIEDOUT (doccarried_id, doccarried_name)
PAT_EITEM (patient_id, carried_out_on, item_code, adm_datetime, item_quantity, item_charge)
E_ITEM (item_code, item_desc)

FINAL 3NF

Attribute synthesis: combining SUPERV_DOCTOR, REQ_DOCTOR, and DOC_CARRIEDOUT into DOCTOR (doctor_id, doctor_name)

PAT_ADMISSION(patient_id, adm_datetime, supvdoctor_id)
PATIENT (patient_id, patient_name)
PAT_PROCEDURE (patient_id, carried_out_on, adm_datetime, procedure_code, reqdoctor_id, doccarried_id, procedure_charge, totalextras_charges)
PROCEDURE (procedure_code, procedure_name, procedure_desc)
PAT_EITEM (patient_id, carried_out_on, item_code, adm_datetime, item_quantity, item_charge)
E_ITEM (item_code, item_desc)
DOCTOR (doctor_id, doctor_name)

Documents B:

UNF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern, (ward_code, ward_name, date_assigned, date_completed))

1NF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)

Dependency diagrams:

nurse_id → nurse_fname, nurse_lname, nurse_phone,
cert_for_childern **FULL DEPENDENCY**

W_ASSIGNMENT (nurse_id, date_assigned, ward_code, ward_name, date_completed)

Dependency diagrams:

nurse_id, date_assigned → ward_code, date_completed
FULL DEPENDENCY

ward_code → ward_name **TRANSITIVE DEPENDENCY**

2NF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)

W_ASSIGNMENT (nurse_id, date_assigned, ward_code, ward_name, date_completed)

3NF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)

W_ASSIGNMENT (nurse_id, date_assigned, ward_code, date_completed)

WARD (ward_code, ward_name)

COLLECTED 3NF RELATIONS:

1. **PAT_ADMISSION**(patient_id, adm_datetime, supvdoctor_id)
2. **PATIENT** (patient_id, patient_name)
3. **PAT_PROCEDURE** (patient_id, carried_out_on, adm_datetime, procedure_code, reqdoctor_id, doccarried_id, procedure_charge, totalextras_charges)
4. **PROCEDURE** (procedure_code, procedure_name, procedure_desc)
5. **PAT_EITEM** (patient_id, carried_out_on, item_code, adm_datetime, item_quantity, item_charge)
6. **E_ITEM** (item_code, item_desc)
7. **DOCTOR** (doctor_id, doctor_name)
8. **NURSE** (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
9. **W_ASSIGNMENT** (nurse_id, date_assigned, ward_code, date_completed)
10. **WARD** (ward_code, ward_name)