

# DATABASE DESIGN MONASH HOSPITAL (MH) (NORMALISATION)

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## 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	<b>FULL DEPENDENCY</b>
patient_id → patient_name	<b>PARTIAL DEPENDENCY</b>
supvdoctor_id → supvdoctor_name	<b>TRANSITIVE DEPENDENCY</b>

**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	<b>FULL DEPENDENCY</b>
procedure_code → procedure_name, procedure_desc	<b>TRANSITIVE DEPENDENCY</b>
reqdoctor_id → reqdoctor_name	<b>TRANSITIVE DEPENDENCY</b>
doccarried_id → doccarried_name	<b>TRANSITIVE DEPENDENCY</b>

**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	<b>FULL DEPENDENCY</b>
item_code → item_desc	<b>PARTIAL DEPENDENCY</b>

## 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)