CIS 340 Assignment 2

Phase I: E-R Model (50 Points)

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1. **WARDS** contains the following attributes.

Ward (**Ward\_Number**, Ward\_Name, Location, Total\_No\_of\_Beds, Telephone\_Extension)

**Pk: Ward Number**

1. **STAFF** Records for the staff, qualification, and work experience of the good meadow hospital. Staff records contain the basic information, Qualifications contain their type, date, and their Institution and work experience contain their previous position, start date, end date, and their organization.

Staff (**Staff\_Number**, first\_Name, Last\_Name, Address, Sex, Tel\_No, DOB, **NIN**, Positon, ***Ward\_Number***, Current\_Salary, Hours/week, Paid\_Weekly/Monthly, Permanent/Temporary, Qualifiaction\_Type, Qualification\_Date, Qualifiaction\_Institution, Work\_Experience\_Position, Work\_StartDate, Work\_EndDate, Organization)

**Pk: Staff Number**

**Alternate key: NIN**

**Fk: Ward Number**

1. **WARD STAFF ALLOCATION** It includes the information about the one nurse who handle and assign the shift for another nurse

Ward\_Staff\_Allocation (***Serial\_ No***, ***Ward Number***, Charge Nurse, Ward Name*,* ***Staff\_Number***, Location, Tel\_Extension, Position, Shift)

**Pk: - Serial No**

**Fk: Ward Number, Staff number**

1. **PATIENTS** Contains the information of the patients admitted in the hospital and related information

patients (**Patient Number**, First\_Name, Last\_Name, Address, Sex, Tel\_No, DOB, Marital Status, Date\_Registered, kin\_Full\_Name, kin\_Address, Kin\_Relationship, Kin\_telephone)

**Pk: Patient Number**

1. **LOCAL DOCTOR DETAILS** Includes the information of local doctors for patients before admitting to hospital

Local\_Doctor\_Details (**Cilnic\_No**, ***Patient\_Number***, Full\_Name, Address, Tel\_No)

**Pk: Cilnic\_No**

**Fk: Patient Number**

1. **PATIENT APPOINTMENT** Includes the information the one charge nurse who handle and manages the record of patients

Patient Appointment (Appointment ***No***, Date of Appointment, Examination Name, ***Ward Number***, Charge Nurse, Ward Name*,* ***Staff Number***, Location, Tel\_Extension)

**pk: Appointment No**

**FK: Ward Number, Staff number**

1. **INPATIENTS**

Contains the record of the patients where charge nurse is in charge of patients inside hospital

Inpatients (***Patient Number***, On\_Waiting\_List, Expected Stays, Date Placed, Date leave, Actual leave, ***Bed Number***)

**Pk: - Bed Number**

**FK: - Patient Number**

1. **OUTPATIENTS** details of outpatients are stored and include the patient’s information for clinic

Outpatients (***Patient Number***, Date\_For\_Appointment, Date Placed, ***Clinic No***)

**PK: - Patient Number**

**FK: - Clinc\_No, Patient Number**

1. **PATIENT MEDICAL:**  contains the information of patients and details of the medical reports.

Patient Medical (***Patient Number***, ***Drug Number***, Unit\_Per\_Day, Start Date, Finish Date)

**pk: - Drug Number**

**FK: - Patient Number**

1. **SURGICAL AND NONSURGICAL SUPPLIES:** consists of central stock of surgical (for example, syringes, sterile dressings) and non-surgical (for example, plastic bags, and aprons) supplies.

Surgical\_NonSurgicalSupplies (***Item\_Number***, Name, Description, Quantity, Reorder\_level, Cost\_Per\_Unit)

**PK: - Item Number**

1. **PHARMACEUTICAL SUPPLIES: It** consist of a stock of pharmaceutical supplies

Pharmaceutical\_Supplies (***Drug\_number***, Name, Description, Dosage, Method\_of\_Administration, Quantity, Reorder\_level, Cost\_Per\_Unit)

PK**: - Drug Number**

1. **WARD REQUISITIONS:** table consist of information of requested charge nurse and the supplies that need for the patients who is in the ward

Ward Requisitions: - (***Requisitions No***, ***Ward Number***, Ward Name, Requested By, Requested \_Date, ***Drug Number***)

**PK: - Requisitions No**

**FK: - Ward Number, Drug Number**

1. **SUPPLIERS: contains** the details of the suppliers

Suppliers (***Suppliers No*, *Item Number*, *Drug Number***, Suppliers Name, Address, Telephone, Fax Numbers)

**Pk: - Suppliers No**

**Fk: - Item Number, Drug Number**

**Tables of hospital Staff and Patients**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Ward** | **Ward\_Number** | **Not Null** | **Primary Key** |
| **Ward** | **Ward\_Name** | **Not Null** | **No** |
| **Ward** | **Location** | **Not Null** | **Possible if location is unique** |
| **Ward** | **Total\_No\_of\_beds** | **Not Null** | **No** |
| **Ward** | **Telephone** | **Null** | **No** |

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| --- | --- | --- | --- |
| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Staff** | **Staff\_number** | **Not Null** | **Primary Key** |
| **Staff** | **First\_Name** | **Not Null** | **No** |
| **Staff** | **Last\_Name** | **Not Null** | **No** |
| **Staff** | **Address** | **Not Null** | **No** |
| **Staff** | **Sex** | **Not Null** | **No** |
| **Staff** | **Tel\_No** | **Not Null** | **No** |
| **Staff** | **DOB** | **Not Null** | **No** |
| **Staff** | **NIN** | **Not Null** | **Possible if numbers are unique** |
| **Staff** | **Position** | **Not Null** | **No** |
| **Staff** | **Ward\_Number** | **Not Null** | **Foreign Key** |
| **Staff** | **Current\_salary** | **Not Null** | **No** |
| **Staff** | **Hours/Week** | **Not Null** | **No** |
| **Staff** | **Paid\_Weekly/Monthly** | **Not Null** | **No** |
| **Staff** | **Permanent/Temporary** | **Not Null** | **No** |
| **Staff** | **Qulaification\_Institution** | **Not Null** | **No** |
| **Staff** | **Work\_Experience\_Position** | **Not Null** | **No** |
| **Staff** | **Work\_StartDate** | **Not Null** | **No** |
| **Staff** | **Work\_EndDate** | **Null** | **No** |
| **Staff** | **Organization** | **Not Null** | **Possible if every organizations are different** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Ward\_Staff\_Allocation** | **Serial\_No** | **Not Null** | **Primary Key** |
| **Ward\_Staff\_Allocation** | **Ward\_Number** | **Not Null** | **Foreign Key** |
| **Ward\_Staff\_Allocation** | **Charge\_No** | **Not Null** | **No** |
| **Ward\_Staff\_Allocation** | **Ward\_Name** | **Not Null** | **No** |
| **Ward\_Staff\_Allocation** | **Staff\_Number** | **Not Null** | **Foreign Key** |
| **Ward\_Staff\_Allocation** | **Location** | **Not Null** | **If possible if location is different** |
| **Ward\_Staff\_Allocation** | **Tel\_Extension** | **Not Null** | **No** |
| **Ward\_Staff\_Allocation** | **Position** | **Not Null** | **No** |
| **Ward\_Staff\_Allocation** | **Shift** | **Not Null** | **No** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Patient** | **Patient\_Number** | **Not Null** | **Primary Key** |
| **Patient** | **First\_Name** | **Not Null** | **No** |
| **Patient** | **Last\_name** | **Not Null** | **No** |
| **Patient** | **Address** | **Not Null** | **No** |
| **Patient** | **Sex** | **Not Null** | **No** |
| **Patient** | **Tel\_No** | **Not Null** | **No** |
| **Patient** | **DOB** | **Not Null** | **No** |
| **Patient** | **Marital Status** | **Not Null** | **No** |
| **Patient** | **Date\_Registered** | **Not Null** | **No** |
| **Patient** | **Kin\_Full\_Name** | **Null** | **No** |
| **Patient** | **Kin\_Address** | **Null** | **No** |
| **Patient** | **Kin\_Relationship** | **Null** | **No** |
| **Patient** | **Kin\_Telephone** | **Null** | **NO** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Local\_Doctor\_Details** | **Clinic\_No** | **Not Null** | **Primary Key** |
| **Local\_Doctor\_Details** | **Patient\_No** | **Not Null** | **Foreign Key** |
| **Local\_Doctor\_Details** | **Full\_Name** | **Not Null** | **No** |
| **Local\_Doctor\_Details** | **Address** | **Not Null** | **No** |
| **Local\_Doctor\_Details** | **Tel\_No** | **Not Null** | **No** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Patient\_Appointment** | **Appointment\_No** | **Not Null** | **Primary Key** |
| **Patient\_Appointment** | **Date\_of\_Appointment** | **Not Null** | **No** |
| **Patient\_Appointment** | **Examination\_Name** | **Not Null** | **No** |
| **Patient\_Appointment** | **Ward\_Number** | **Not Null** | **Foreign Key** |
| **Patient\_Appointment** | **Charge\_Nurse** | **Not Null** | **No** |
| **Patient\_Appointment** | **Ward\_Name** | **Not Null** | **No** |
| **Patient\_Appointment** | **Staff\_Number** | **Not Null** | **Foreign Key** |
| **Patient\_Appointment** | **Location** | **Not Null** | **No** |
| **Patient\_Appointment** | **Tel\_Extension** | **Not Null** | **No** |

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| --- | --- | --- | --- |
| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Inpatients** | **Bed\_Number** | **Not Null** | **Primary Key** |
| **Inpatients** | **Patient\_Number** | **Not Null** | **Foreign Key** |
| **Inpatients** | **On\_Waiting\_List** | **Not Null** | **No** |
| **Inpatients** | **Expected\_Stays** | **Not Null** | **No** |
| **Inpatients** | **Date\_Placed** | **Not Null** | **No** |
| **Inpatients** | **Date\_Leave** | **Not Null** | **No** |
| **Inpatients** | **Actual\_Leave** | **Not Noll** | **No** |

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| --- | --- | --- | --- |
| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Outpatients** | **Patient\_Number** | **Not Null** | **Primary Key** |
| **Outpatients** | **Date\_Placed** | **Not Null** | **No** |
| **Outpatients** | **Date\_For\_Appointment** | **Not Null** | **No** |
| **Outpatients** | **Clinic\_No** | **Not Null** | **Foreign Key** |

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| --- | --- | --- | --- |
| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Patient\_Medical** | **Patient\_Number** | **Not Null** | **Foreign Key** |
| **Patient\_Medical** | **Drug\_Number** | **Not Null** | **Primary Key** |
| **Patient\_Medical** | **Unit\_Per\_Day** | **Not Noll** | **No** |
| **Patient\_Medical** | **Start\_Date** | **Not Null** | **No** |
| **Patient\_Medical** | **Finish\_Date** | **Not Null** | **No** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Surgical\_NonSurgicalSupplies** | **Item\_Number** | **Not Null** | **Primary Key** |
| **Surgical\_NonSurgicalSupplies** | **Name** | **Not Null** | **No** |
| **Surgical\_NonSurgicalSupplies** | **Description** | **Not Null** | **No** |
| **Surgical\_NonSurgicalSupplies** | **Quantity** | **Not Null** | **No** |
| **Surgical\_NonSurgicalSupplies** | **Recorder\_Level** | **Not Null** | **No** |
| **Surgical\_NonSurgicalSupplies** | **Cost\_Per\_Unit** | **Not Noll** | **No** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Pharmaceutical\_Supplies** | **Drug\_Number** | **Not Null** | **Primary Key** |
| **Pharmaceutical\_Supplies** | **Name** | **Not Null** | **No** |
| **Pharmaceutical\_Supplies** | **Description** | **Not Null** | **No** |
| **Pharmaceutical\_Supplies** | **Dosage** | **Not Null** | **No** |
| **Pharmaceutical\_Supplies** | **Method\_of\_Administration** | **Not Null** | **No** |
| **Pharmaceutical\_Supplies** | **Quantity** | **Not Null** | **No** |
| **Pharmaceutical\_Supplies** | **Recorder\_Level** | **Not Null** | **No** |
| **Pharmaceutical\_Supplies** | **Cost\_Per\_Unit** | **Not Noll** | **No** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Ward\_Requisitions** | **Requisitions\_No** | **Not Null** | **Primary Key** |
| **Ward\_Requisitions** | **Ward\_Number** | **Not Null** | **Foreign key** |
| **Ward\_Requisitions** | **Ward\_Name** | **Not Null** | **No** |
| **Ward\_Requisitions** | **Requested\_By** | **Not Null** | **No** |
| **Ward\_Requisitions** | **Requested\_Date** | **Not Null** | **No** |
| **Ward\_Requisitions** | **Drug\_Number** | **Not Null** | **Foreign key** |

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| **Table** | **Column** | **Null/Not Null** | **Alternate key?** |
| **Suppliers** | **Suppliers\_No** | **Not Null** | **Primary Key** |
| **Suppliers** | **Item\_Number** | **Not Null** | **Foreign key** |
| **Suppliers** | **Drug\_Number** | **Not Null** | **Foreign Key** |
| **Suppliers** | **Suppliers\_Name** | **Not Null** | **No** |
| **Suppliers** | **Address** | **Not Null** | **No** |
| **Suppliers** | **Telephone** | **Not Null** | **No** |
| **Suppliers** | **Fax\_numbers** | **Not Null** | **No** |
| **Suppliers** | **Description** | **Not Null** | **No** |

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| **Relationship** | | | **Cardinality** | |
| **Parents** | **Child** | **Type** | **MAX** | **MIN** |
| **WARDS** | **Ward\_Requisitions** | **ID-Dependent** | **1:N** | **M-O** |
| **WARDS** | **Patient\_Appointment** | **ID-Dependent** | **1:N** | **M-O** |
| **WARDS** | **STAFF** | **Strong** | **1:N** | **M-O** |
| **WARDS** | **Ward\_Staff\_Allocation** | **ID-Dependent** | **1:N** | **M-O** |
| **STAFF** | **Patient\_Appointment** | **ID-Dependent** | **1:N** | **M-O** |
| **STAFF** | **Ward\_Staff\_Allocation** | **ID-Dependent** | **1:N** | **M-O** |
| **Pharmaceutical\_Supplies** | **Ward\_Requisitions** | **ID-Dependent** | **1:N** | **M-O** |
| **Patient\_Medical** | **Pharmaceutical\_Supplies** | **ID-Dependent** | **1:N** | **M-O** |
| **Pharmaceutical\_Supplies** | **Suppliers** | **ID-Dependent** | **1:N** | **M-O** |
| **Surgical\_NonSurgicalSupplies** | **Suppliers** | **ID-Dependent** | **1:N** | **M-O** |
| **Patient** | **Impatients** | **Strong** | **1:N** | **M-O** |
| **Patient** | **Outpatients** | **Strong** | **1:N** | **M-O** |
| **Patient** | **Patient\_Medical** | **Strong** | **1:1** | **M-O** |
| **Patient** | **Local\_Doctor\_Details** | **Strong** | **1:1** | **M-O** |
| **Patient** | **Patient\_Appointment** | **Weak, but not ID-Dependent** | **1:1** | **M-O** |

**4) ER Diagram**

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