IT 340 Project

Phase I: E-R Model (50 Points)

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1. **WARDS**

Ward: Wards for Well meadows Hospital (wards for the patients). It contains the following attributes.

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

**Primary key: Ward\_Number**

1. **STAFF**

Staff: Records for the staff, qualification and work experience of the well meadow’s hospital. Staffs records contains the basic information, Qualifications contains their type, date and their Institution and work experience contains their previous position, start date, end date and their organization where they worked.

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)

**Primary key: Staff\_Number**

**Alternate key: NIN**

**Foreign key: Ward\_Number**

1. **WARD STAFF ALLOCATION**

Ward staff allocation: This table consists of the information the one charge nurse who handle and assign the shift for other nurses.

Ward\_Staff\_Allocation (***Serial\_ No***, ***Ward\_Number***, Charge\_Nurse, Ward\_Name*,* ***Staff\_Number***, Location, Tel\_Extension, Positon, Shift)

**Primary key: - Serial\_No**

**Foreign key: Ward\_Number, Staff\_number**

1. **PATIENTS**

Patients: Information of the patients admitted in Hospital and their relative 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)

**Primary Key: Patient\_Number**

1. **LOCAL DOCTOR DETAILS**

Local Doctor Details: This table has the details of local doctors for patients before admitting to hospital

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

**Primary key: Cilnic\_No**

**Foreign key: Patient\_Number**

1. **PATIENT APPOINTMENT**

Patient Appointment: This table consists of 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)

**Primary key : Appointment\_No**

**Foreign key: Ward\_Number, Staff\_number**

1. **INPATIENTS**

Inpatients: This table consists of 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***)

**Primary Key: - Bed\_Number**

**Foreign Key: - Patient\_Number**

1. **OUTPATIENTS**

Outpatients: The details of outpatients are stored and include the patient’s information for clinic

Outpatients (***Patient\_Number***, Date\_For\_Appointment, Date\_Placed, ***Clinic\_No***)

**Primary Key: - Patient\_Number**

**Foreign Key: - Clinc\_No, Patient\_Number**

1. **PATIENT MEDICAL**

Patient Medical: - This table consists of all the information of patients and details of the medical reports.

Patient\_Medical (***Patient\_Number***, ***Drug\_Number***, Unit\_Per\_Day, Start\_Date, Finish\_Date)

**Primary Key: - Drug\_Number**

**Foreign Key: - Patient\_Number**

1. **SURGICAL AND NONSURGICAL SUPPLIES**

Surgical and Nonsurgical Supplies: -This table 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)

**Primary Key: - Item\_Number**

1. **PHARMACEUTICAL SUPPLIES**

Pharmaceutical Supplies: - This table consist of a stock of pharmaceutical supplies (for example, antibiotics, and painkillers).

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

**Primary Key: - Drug\_Number**

1. **WARD REQUISITIONS**

Ward Requisitions: - This 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***)

**Primary Key: - Requisitions\_No**

**Foreign Key: - Ward\_Number, Drug\_Number**

1. **SUPPLIERS**

Suppliers: - This table consists of the details of the suppliers

Suppliers (***Suppliers\_No*, *Item\_Number*, *Drug\_Number*** , Suppliers\_Name, Address, Telephone, Fax\_Numbers)

**Primary Number: - Suppliers\_No**

**Foreign key: - Item\_Number, Drug\_Number**

**Tables For the 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** |

|  |  |  |  |
| --- | --- | --- | --- |
| **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** |