**CHAPTER III: GENERAL DESIGN**

**3.1 GENERAL OBJECTIVES**

The general objective of the study is to create logs and inventory system for the Polytechnic University of the Philippines’ medical clinic. The logs and inventory system is made to help the university keep track of their inventory.

**3.2 SPECIFIC OBJECTIVES**

The specified objectives are:

1.) To have a module where the number of medicines, supplies and equipment are monitored.

2.) To develop a module where the admin can view and add the items that are to be distributed to other campuses.

3.) To produce a module that the module where the admin can modify and view the items.

4.) To include a module where the admin can register and modify the patient’s information.

5.) To develop a module where the admin can generate Item Inventory Report, Item Distribution Report and Receiving Report.

**3.3. PRESENTATION OF ALTERNATIVE**

**3.3.1. Alternative 1: NETWORK CONNECTION (OFFICE OF THE DIRECTOR, MEDICAL CLINIC)**

This Network is centralized that connects the Medical clinic’s Clerk and the Director wherein they can access the files of the inventory. This is highly recommended alternative to reduce paperwork proliferation and to access easily the files and documents from the database. The database connection is via intranet.

The researcher recommends to buy an additional scanner, and cable wires, also a switch and additional router.

**3.3.1.1. System Flowchart**

**(Refer to INDEX A at INDEXES)**

**3.3.1.2. Physical Elements**

**3.3.1.2.1. Database/Tables**

**Medicine Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Medicine Code | Alphanumeric | 20 | 0 | X(15) | Code of the medicine |
| Name | Alphanumeric | 200 | 0 | X(200) | Name of the medicine |
| Generic Name | Alphanumeric | 200 | 0 | X(200) | Generic name of the medicine |
| Dosage | Alphanumeric | 50 | 0 | X(50) | The dosage of the medicine |
| Form | Alphanumeric | 50 | 0 | X(50) | Combo box for choosing form of medicine. |
| Manufacturer | Alphanumeric | 100 | 0 | X(100) | Name of the manufacturer |
| Minimum | Numeric | 11 | 0 | 9 (11) | Minimum value |
| Maximum | Numeric | 11 | 0 | 9 (11) | Maximum value |

**Supply Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Supply Code | Alphanumeric | 20 | 0 | X(15) | Code of the supply |
| Name | Alphanumeric | 200 | 0 | X(200) | Name of the supply |
| Generic Name | Alphanumeric | 200 | 0 | X(200) | Generic name of the supply |
| Dosage | Alphanumeric | 50 | 0 | X(50) | The dosage of the supply |
| Form | Alphanumeric | 50 | 0 | X50) | Combo box for choosing form of supply |
| Manufacturer | Alphanumeric | 100 | 0 | X (100) | Name of the manufacturer |
| Minimum | Numeric | 11 | 0 | 9(11) | Minimum value |
| Maximum | Numeric | 11 | 0 | 9(11) | Maximum value |

**Equipment Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Equipment Code | Alphanumeric | 20 | 0 | X(15) | Code of the equipment |
| Name | Alphanumeric | 200 | 0 | X(200) | Name of the equipment |
| Generic Name | Alphanumeric | 200 | 0 | X(200) | Generic name of the equipment |
| Manufacturer | Alphanumeric | 100 | 0 | X(100) | Name of the manufacturer |
| Minimum | Numeric | 11 | 0 | I9 (11) | Minimum value |
| Maximum | Numeric | 11 | 0 | 9 (11) | Maximum value |

**Student Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Patient Code | Alphanumeric | 20 | 0 | X(20) | **Code of the patient** |
| Patient Type | Alphabet | 4 | 0 | TINYINT  (4) | Type of the patient |
| First Name | Alphanumeric | 50 | 0 | X(50) | First name of the patient |
| Middle Name | Alphanumeric | 50 | 0 | X(50) | Middle name of the patient |
| Last Name | Alphanumeric | 50 | 0 | X(50) | Last name of the patient |
| Birth Day | Numeric | - | 0 | MM/DD/YYYY | Birthday of the patient |
| College | Alphanumeric | 200 | 0 | X(200) | College of the patient |
| Course | Alphanumeric | 200 | 0 | X (200) | Course of the patient |
| Year | Alphanumeric | 10 | 0 | X (10) | Year of the patient |
| Section | Numeric | 10 | 0 | X (10) | Section of the patient |
| Gender | Numeric | 4 | 0 | TINYINT (4) | Gender of the patient |
| Height | Numeric | 10 | 4 | 999.99 | Height of the patient |
| Weight | Numeric | 10 | 4 | 999.99 | Weight of the patient |
| Contact No | Alphanumeric | 20 | 0 | TEXT | Contact number of the patient |

**Supplier Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Supplier Code | Alphanumeric | 20 | 0 | X(20) | Code of the supplier |
| Name | Alphanumeric | 100 | 0 | X (100) | Name of the supplier |
| Contact No. | Alphanumeric | 50 | 0 | X(50) | Contact No. of the supplier |
| E-mail Address | Alphanumeric | - | 0 | TEXT | E-mail Address of the supplier |
| Building # | Alphanumeric | 50 | 0 | X (50) | Building # of the supplier |
| Street | Alphanumeric | 50 | 0 | X(50) | Street of the supplier |
| Town/Brgy | Alphanumeric | 50 | 0 | X(50) | Town/Brgy of the supplier |
| City/Province | Alphanumeric | 50 | 0 | X(50) | City/Province of the supplier |

**Manufacturer Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Manufacturer Code | Alphanumeric | 20 | 0 | X(20) | Code of the manufacturer |
| Name | Alphanumeric | 100 | 0 | X (100) | Name of the manufacturer |
| Item Type | Alphanumeric | 4 | 0 | TINYINT (4) | Item Type of the manufacturer |
| Building # | Alphanumeric | 50 | 0 | X (50) | Building # of the manufacturer |
| Street | Alphanumeric | 50 | 0 | X(50) | Street of the manufacturer |
| Town/Brgy | Alphanumeric | 50 | 0 | X(50) | Town/Brgy of the manufacturer |
| City/Province | Alphanumeric | 50 | 0 | X(50) | City/Province of the manufacturer |

**Branches Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Branch Code | Alphanumeric | 20 | 0 | X(20) | Code of the branch |
| Name | Alphanumeric | 100 | 0 | X (100) | Name of the branch |
| Building # | Alphanumeric | 50 | 0 | X (50) | Building # of the branch |
| Street | Alphanumeric | 50 | 0 | X(50) | Street of the branch |
| Town/Brgy | Alphanumeric | 50 | 0 | X(50) | Town/Brgy of the branch |
| City/Province | Alphanumeric | 50 | 0 | X(50) | City/Province of the branch |

**Item Distribution Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Distribute Code | Alphanumeric | 20 | 0 | X(20) | Code of the distribution |
| Item Type | Alphabet | 4 | 0 | TINYINT  (4) | Type of the item |
| Item Name | Alphanumeric | 100 | 0 | X (100) | Name of the item |
| Item Code | Alphanumeric | 20 | 0 | X(20) | Code of the item |
| UOM | Alphanumeric | 5 | 0 | 9(5) | UOM of the item |
| Quantity | Numeric | 5 | 0 | 9(5) | Quantity of the item |
| Available | Numeric | 5 | 0 | 9(5) | Number Available items |
| Total | Numeric | 5 | 0 | 9(5) | Total number of items |
| Balance | Numeric | 5 | 0 | 9(5) | Balance of the items |
| Date | Numeric | - | 0 | MM/DD/YYYY | Date |

**Receive Inventory Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Item Type | Alphabet | 4 | 0 | TINYINT  (4) | Item Type of the received items |
| Item Name | Alphanumeric | 100 | 0 | X (100) | Item Name of the received items |
| Batch Code | Alphanumeric | 20 | 0 | X(20) | Batch Code of the received items |
| Quantity | Numeric | 5 | 0 | 9(5) | Quantity of the received items |
| Unit | Numeric | 5 | 0 | 9(5) | Unit of the received items |
| Piece per box | Numeric | 5 | 0 | 9(5) | Piece per box of the received items |
| Expiration Date | Numeric | - | 0 | MM/DD/YYYY | Expiration Date of the received items |
| Receiving Code | Alphanumeric | 20 | 0 | X(20) | Receiving Code of the received items |
| Delivery Receipt No. | Alphanumeric | 50 | 0 | X(50) | Delivery Receipt No. of the received items |
| Date Received | Numeric | - | 0 | MM/DD/YYYY | Date Received |
| Supplier | Alphanumeric | 100 | 0 | X (100) | Supplier of the received items |

**Patient Log (DTR) Form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Patient Log Code | Alphanumeric | 20 | 0 | X(20) | Code for patient’s log |
| Patient’s Name | Alphanumeric | 100 | 0 | X (100) | Name of the patient |
| Time IN | Numeric | - | 0 | HH:MM:SS | Time in of the patient |
| Date | Numeric | - | 0 | MM/DD/YYYY | Date |
| Complaints | Alphanumeric | 100 | 0 | X (100) | Health problem or sickness |
| Treatments | Alphanumeric | 100 | 0 | X (100) | Medicines given |
| Medicine | Alphanumeric | 100 | 0 | X (100) | Medicine give to the patient |
| Quantity | Numeric | 5 | 0 | 9(5) | Quantity of the medicine given to the patient |

**Log-In**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIELD NAME** | **FIELD TYPE** | **FIELD LENGTH** | **DECIMAL** | **FORMAT** | **DESC.** |
| Username | Alphanumeric | 16 | 0 | X(16) | Username of the user |
| Password | Alphanumeric | 100 | 0 | X (100) | Password of the user |

**3.3.1.2.2. Reports**

1.Stock Card

2. Daily Treatment Records

3. Receiving inventory

4. Item Distribution

5. List of Items

**3.3.1.2.3. Manual Process**

* Receiving of items
* Distribution of Items to other campuses
* Manually tallying of inventory
* Registration of Patients in Patient Logs (DTR)
* Checking patients and looking for complaints
* Giving of medicine/s to patient/s for treatment
* Encoding of records to MS word and excel
* Generation of Reports

**3.3.1.3. Requirement Definition**

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **Required** | **Existing** | **Needed** |
| **Hardware (Specs)** |  |  |  |
| PC Unit | 3 | 2 | 1 |
| * Internal Memory (RAM) \*1GB DDR2 | 3 | 1 | 2 |
| \*Hard disk Capacity (CPU)  \*At least 160GB HDD | 3 | 1 | 2 |
| \*Processor  \*Intel i3  \* Core2Duo | 3 | 0 | 3 |
| \* Extensions  \* 5 sockets | 4 | 2 | 2 |
| Monitor | 3 | 2 | 1 |
| \*Printer | 1 | 1 | 0 |
| \*Scanner |  |  |  |
| \*Cables | 3 | 3 | 0 |
| \*Hub \*24 ports |  |  |  |
| Networking |  |  |  |
| * Router | 1 | 0 | 1 |
| * Switch | 1 | 0 | 1 |
| * Ethernet | 1 | 0 | 1 |
| **Software** |  |  |  |
| Operating System \*At least Windows 7 | 3 | 2 | 1 |
| Microsoft Office \*MS Office 10/07 | 3 | 2 | 1 |
|  |  |  |  |

**3.3.1.4 Cost Benefit Analysis**

|  |  |
| --- | --- |
| **ITEMS** | **COST** |
| **One Time Cost (Estimated)** | |
| **Hardware**  Computer Configuration   1GB DDR2 Internal Memory(RAM)   160Gb HDD (IDE) or higher  Intel(i3)/Pentium  5-Socket Extension   Hub - 24 ports   Router   Monitor   Printer   Cables | 3 \* 2,003.00 = 6,009.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  3.00  **TOTAL Php 6,012** |
| **Software**   Windows XP Professional   MS Office 2010/2007 | 0.00  0.00  TOTAL Php 0.00 |
| **RECURRING COST(Estimated)** | |
| **Operational Cost**   Power Consumption   Supplies   Cartridge/Ink | 0.00  0.00  2 \* 3,600.00=7,200.00  **TOTAL Php 7,200.00** |
| **TOTAL COST OF PROPOSED SYSTEM:** | **Php 24,351.00** |

**3.3.1.5. Tangible and Intangible Benefits**

**Tangible Benefits**

|  |  |
| --- | --- |
| **ITEMS** | **ANNUAL COST(Estimated)** |
| Long Bond Paper | 50Reams\*P250.00 = P12,500.00 |
| Staple Wire | 12\*P50.00 = P600.00 |
| Cartridge/Ink | 1\*P3,600.00 = P3,600.00 |
| Computer Set | 2\*P15,000.00 = P 30,000.00 |
| **TOTAL BENEFITS OF PROPOSED SYSTEM :** | **TOTAL: P46,700** |

**Intangible Benefits**

* Reduced cost of quality
* Improved processing of information
* Better accuracy for information
* Easier and faster retrieval of document
* Records in logbook and database are updated.
* Faster tallying of inventory