DOCUMENTATION

RIHAM AHAMED ABDUL RAHEEM

HND COMPUTING IDM

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INTRODUCTION

I Choose the IDE is Visual Studio 2015. It has basic features like code editor, debugger, builder, object explorer for every IDE, but goes one step further and provides form design, code completion, data source link, performance definitions and document structure.

During the process of developing the plan for the new Lanka Hospital, all these features were fully utilized to get the most out of IDE and to facilitate my experience during development.

My choice of database engine is SQL Server 2012, provided by Microsoft, which comes with a management studio that allows developers to effectively create, maintain and maintain databases, create tables, links, and a runner that runs SQL queries on tables.
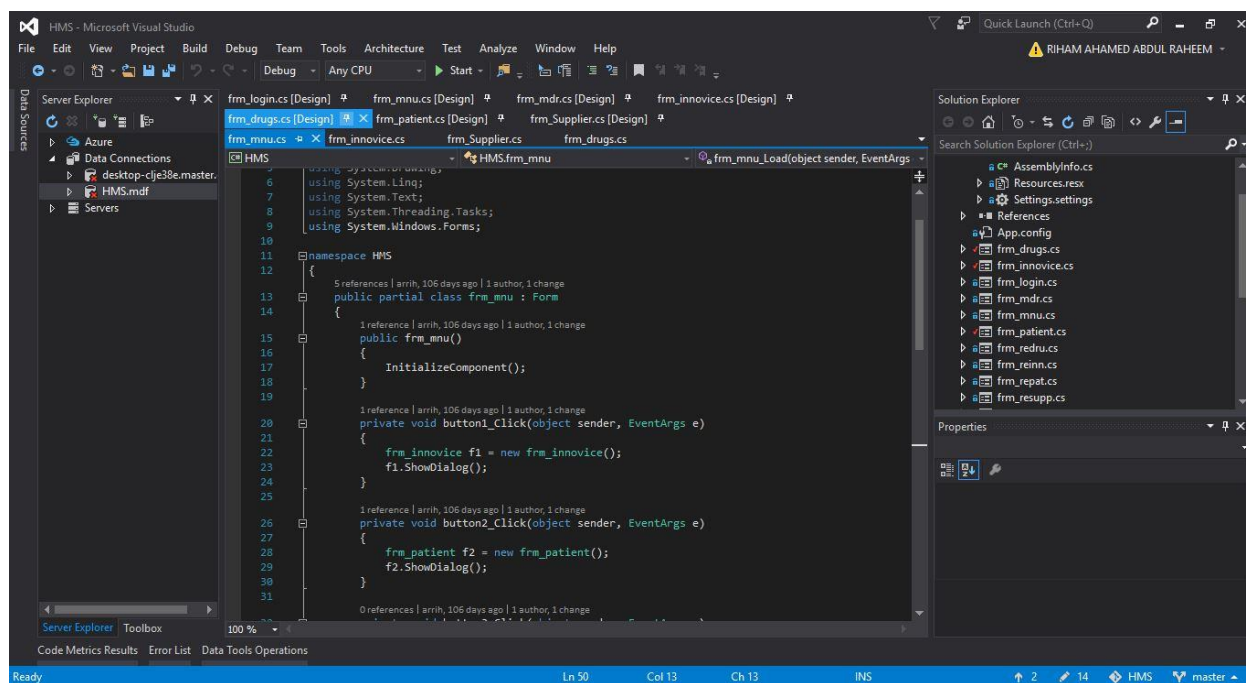

Figure 1: Initial Screen

ENTITY-RELATIONSHIP-DIAGRAM
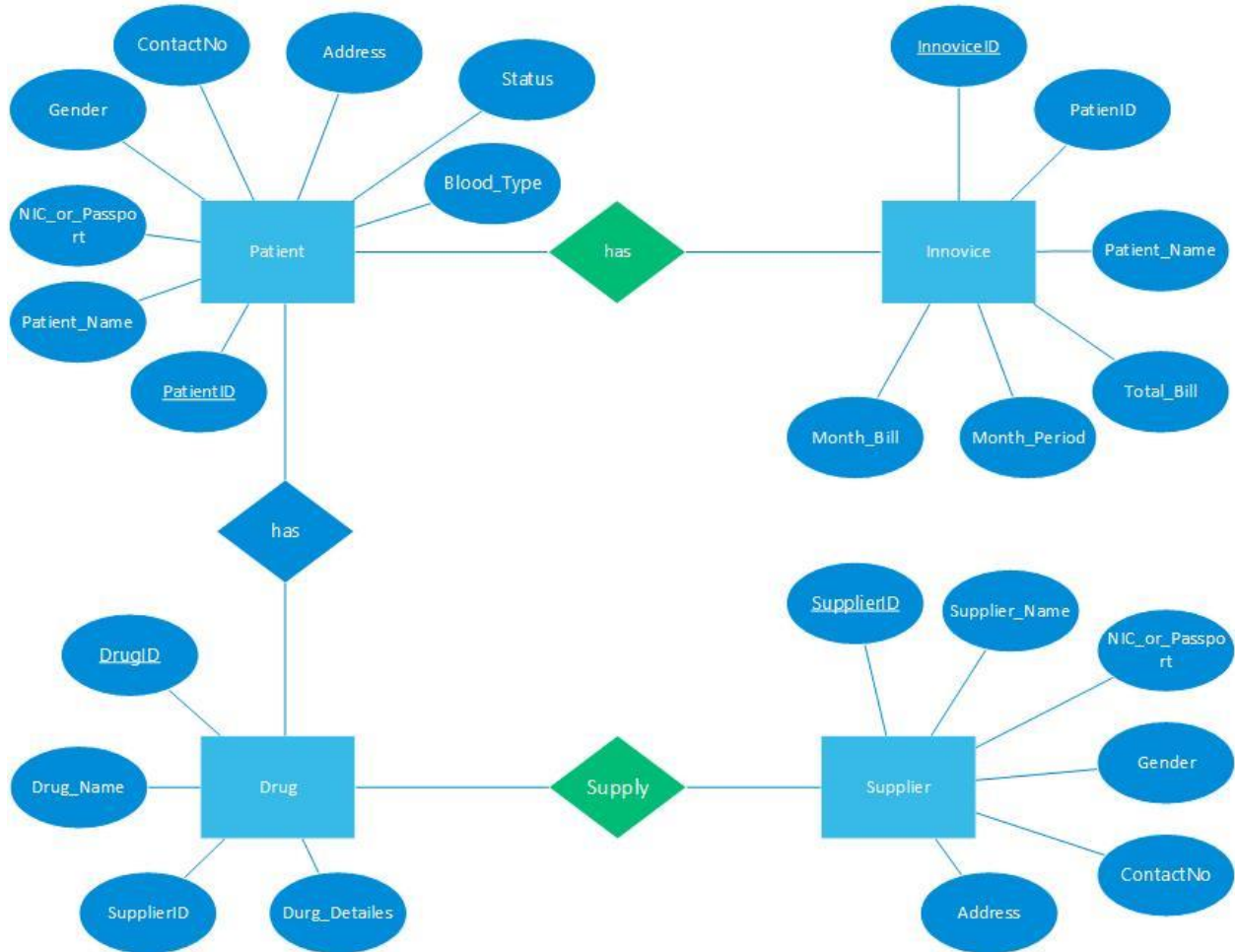
Hospital Management System
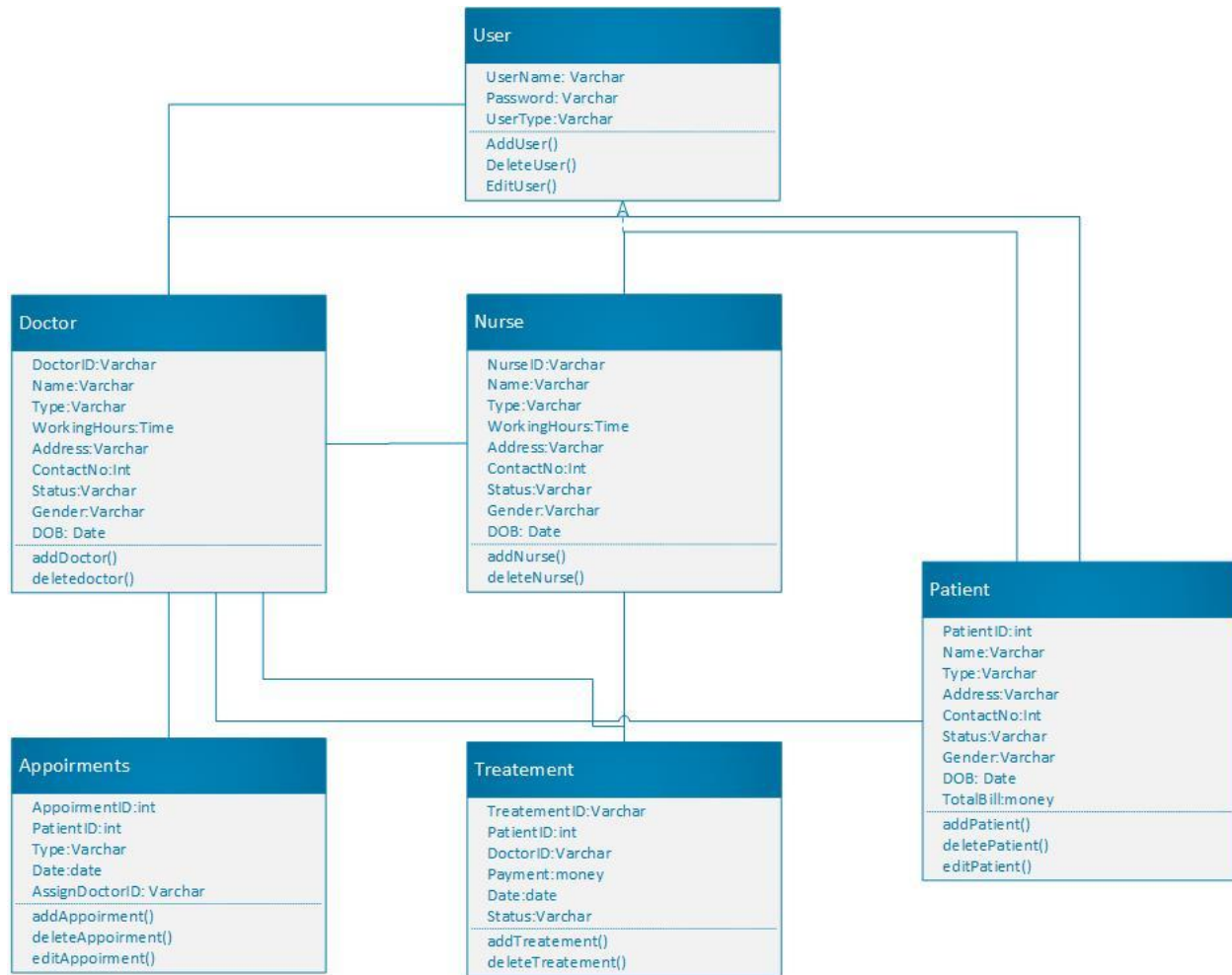

Figure 2: HMS Database ER Diagram

CLASS DIAGRAM

Figure 3: Class Diagram in HMS

DATABASE NORMALIZATION

First Normal Form Test;

1. Ensured that there are only single valued rows and columns
2. All column names have been made unique
3. Ordered in ascending order

Hence New Lanka Database passed the 1NF test.

Second Normal form Test;

1. Database has been ensured and rechecked to see if it's in the first normal form
2. All data has been checked for partial dependency and those that did, were removed.

Hence New Lanka Database has passed the 2NF test.

Third Normal form test;

1. 2NF test has been passed
2. Database consisted transitive dependencies, so 3NF test failed. In order to pass the test, all the data was checked, transitive dependencies were researched and then eliminated.

After fixes and compromise of some data, 3NF test was passed.

Hence all tables in the database are normalized to 3rd normal form

LOGIN SCREEN

Figure 4: Login Screen in HMS

Before the main screen is displayed. a login form will be show. You must enter the User Name, Password and select the user type from between Doctor and Nurse. Below the user's name password and user type are.

UserID	Password	Usertype
D001	Doctor@1	Doctor
D002	Doctor@2	Doctor
D003	Doctor@3	Doctor
D004	Doctor@4	Doctor
D005	Doctor@5	Doctor
N001	Nurse@1	Nurse
N002	Nurse@2	Nurse
N003	Nurse@3	Nurse
N004	Nurse@4	Nurse
N005	Nurse@5	Nurse

Figure 5: User_ID, Password and User_Type

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace HMS
{
    4 references | arrih, 106 days ago | 1 author, 1 change
    public partial class frm_login : Form
    {
        public SqlConnection con;
        public string str;
        1 reference | arrih, 106 days ago | 1 author, 1 change
        public frm_login() ...

        1 reference | arrih, 106 days ago | 1 author, 1 change
        private void frm_login_Load(object sender, EventArgs e)
        {
            str = @"Data Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=D:\My Project\C#\HMS\HM
            con = new SqlConnection();
            con.ConnectionString = str;
            con.Open();
            MessageBox.Show("WELCOME NEW LANKA HOSPITAL");
        }

        1 reference | arrih, 106 days ago | 1 author, 1 change
        private void btn_login_Click(object sender, EventArgs e)
        {
            String qry = "SELECT * FROM users where (UserID='" + txt_uname.Text + "' and Password='" + txt_pass.Text + "')";
            SqlCommand cmd = new SqlCommand(qry, con);
            SqlDataAdapter sda = new SqlDataAdapter(cmd);
            DataTable dt = new DataTable();
            sda.Fill(dt);
            string cmbitemvalue = cmb_utype.SelectedItem.ToString();
            if (dt.Rows.Count > 0)
            {
                for (int i = 0; i < dt.Rows.Count; i++)
                {
                    if (dt.Rows[i]["Usertype"].ToString() == cmbitemvalue)
                    {
                        if (cmb_utype.SelectedIndex == 0)
                        {
                            frm_mdr f1 = new frm_mdr();
                            f1.Show();
                            this.Hide();
                        }
                        else
                        {
                            frm_mnu f2 = new frm_mnu();
                            f2.Show();
                            this.Hide();
                        }
                    }
                }
            }
            else
            {
                MessageBox.Show("Invalid entry please check your details.");
                txt_uname.Clear();
                txt_pass.Clear();
                txt_uname.Focus();
```

Figure 6: Login Screen code

MAIN SCREEN

Figure 7: Main Screen nurse & Doctor

Figure 9: Doctor main screen code

Figure 8: Nurse main screen code

Doctor only see the report but nurse is added, update and delete so sprite main screen.

PATIENT FORM

Figure 11: Patient form

INVOICE FORM

Figure 10: Invoice form

```csharp
 1  using System;
 2  using System.Collections.Generic;
 3  using System.ComponentModel;
 4  using System.Data;
 5  using System.Drawing;
 6  using System.Linq;
 7  using System.Text;
 8  using System.Threading.Tasks;
 9  using System.Windows.Forms;
10  using System.Data.SqlClient;
11
12  namespace HMS
13  {
       5 references | arrih, 106 days ago | 1 author, 1 change
14      public partial class frm_innovice : Form
15      {
16          SqlConnection con = new SqlConnection(@"Data Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=D:\My Pro
17
            1 reference | arrih, 106 days ago | 1 author, 1 change
18          public frm_innovice()
19          {
20              InitializeComponent();
21          }
22
            4 references | 0 changes | 0 authors, 0 changes
23          private void ViewData()
24          {
25              string quary = "Select * from Innovice";
26              SqlDataAdapter sda = new SqlDataAdapter(quary,con);
27              DataTable dt = new DataTable();
28
29              con.Open();
30              sda.Fill(dt);
```

90 %   ▾   ◂

```csharp
       1 reference | arrih, 106 days ago | 1 author, 1 change
35      private void btn_inclear_Click(object sender, EventArgs e)
36      {
37          txt_inid.Clear();
38          txt_inmon.Clear();
39          txt_inmonfee.Clear();
40          txt_intotalbil.Clear();
41          txt_patid.Clear();
42          txt_patname.Clear();
43      }
44
        1 reference | arrih, 106 days ago | 1 author, 1 change
45      private void frm_innovice_Load(object sender, EventArgs e)
46      {
47          ViewData();
48      }
49
        1 reference | arrih, 106 days ago | 1 author, 1 change
50      private void btn_insub_Click(object sender, EventArgs e)
51      {
52
53          string quary = "insert into Innovice values('"+ txt_inid.Text +"' , '" + txt_patid.Text + "', '"
54          SqlCommand cmd = new SqlCommand(quary,con);
55
56          con.Open();
57          cmd.ExecuteNonQuery();
58          MessageBox.Show(txt_patid.Text + " Detailes Saved ");
59          con.Close();
60          ViewData();
61      }
62
        1 reference | 0 changes | 0 authors, 0 changes
63      private void rb_ininvers_CheckedChanged(object sender, EventArgs e)
```

90 %   ▾   ◂

```csharp
C# HMS          ▼  ⚙ HMS.frm_innovice        ▼  ⚙ btn_insub_Click(object sender, EventArgs e ▼
02
       1 reference | 0 changes | 0 authors, 0 changes
63         private void rb_ininvers_CheckedChanged(object sender, EventArgs e)
64         {
65             double totalBill = double.Parse(txt_intotalbil.Text);
66             double invoiceMonth = double.Parse(txt_inmon.Text);
67             if (rb_ininvers.Checked)
68             {
69
70
71                 txt_inmonfee.Text = (totalBill / invoiceMonth).ToString();
72             }
73             else
74             {
75
76             }
77         }
78
       1 reference | 0 changes | 0 authors, 0 changes
79         private void dgv_Innovice_CellContentClick(object sender, DataGridViewCellEventArgs e)
80         {
81             txt_inid.Text = dgv_Innovice.Rows[e.RowIndex].Cells[0].Value.ToString();
82             txt_patid.Text = dgv_Innovice.Rows[e.RowIndex].Cells[1].Value.ToString();
83             txt_patname.Text = dgv_Innovice.Rows[e.RowIndex].Cells[2].Value.ToString();
84             txt_intotalbil.Text = dgv_Innovice.Rows[e.RowIndex].Cells[3].Value.ToString();
85             txt_inmon.Text = dgv_Innovice.Rows[e.RowIndex].Cells[4].Value.ToString();
86             txt_inmonfee.Text = dgv_Innovice.Rows[e.RowIndex].Cells[5].Value.ToString();
87         }
88
       1 reference | 0 changes | 0 authors, 0 changes
89         private void btn_update_Click(object sender, EventArgs e)
90         {
91             string quary = "Update Innovice SET PatientID= '" + txt_patid.Text + "' ,Patient_Name = '" + txt_
               SqlCommand cmd = new SqlCommand(quary, con);
90 %
```

```csharp
C# HMS          ▼  ⚙ HMS.frm_innovice        ▼  ⚙ btn_insub_Click(object sender, EventArgs e ▼
99
       1 reference | 0 changes | 0 authors, 0 changes
100        private void btn_delete_Click(object sender, EventArgs e)
101        {
102            string message = "Do you want to Delete Record?";
103            string title = "DELETE RECORD";
104            MessageBoxButtons buttons = MessageBoxButtons.OKCancel;
105            DialogResult result = MessageBox.Show(message, title, buttons);
106            if (result == DialogResult.OK)
107            {
108                string quary = "DELETE FROM Innovice WHERE InnoviceID = '" + txt_inid.Text + "'";
109                SqlCommand cmd = new SqlCommand(quary, con);
110                con.Open();
111                cmd.ExecuteNonQuery();
112                MessageBox.Show(txt_inid.Text + " Data Delete ");
113                con.Close();
114                ViewData();
115            }
116            else
117            {
118
119            }
120        }
121
       1 reference | 0 changes | 0 authors, 0 changes
122        private void txt_search_TextChanged(object sender, EventArgs e)
123        {
124            string quary = "select * from Innovice WHERE InnoviceID like '" + txt_search.Text + "%'";
125            SqlDataAdapter sda = new SqlDataAdapter(quary, con);
126            DataTable dt = new DataTable();
127
128            con.Open();
129            sda.Fill(dt);
90 %
```

Figure 12: Invoice code

The HMS system was many forms Ex. Patient, Invoice, Supplier and Drug all forms are same for figure10 and figure11 and code also proximity same figure12.