



# DOCUMENTATION

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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.

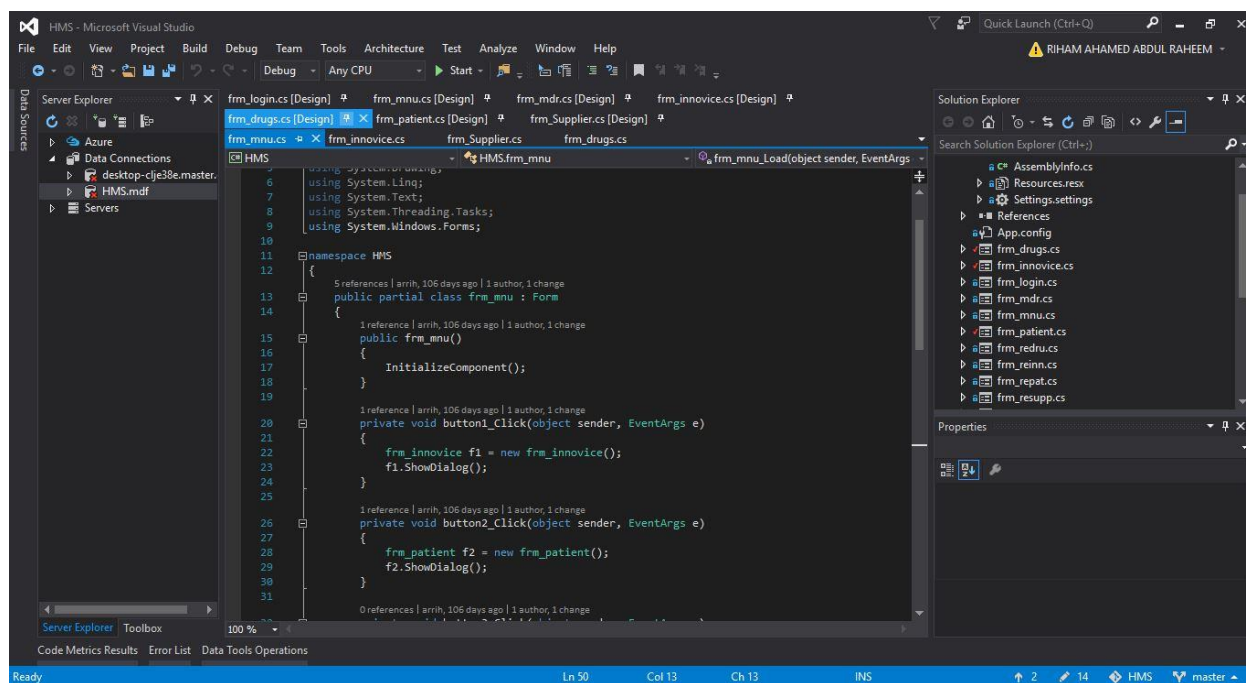


Figure 1: Initial Screen

## ENTITY-RELATIONSHIP-DIAGRAM

### Hospital Management System

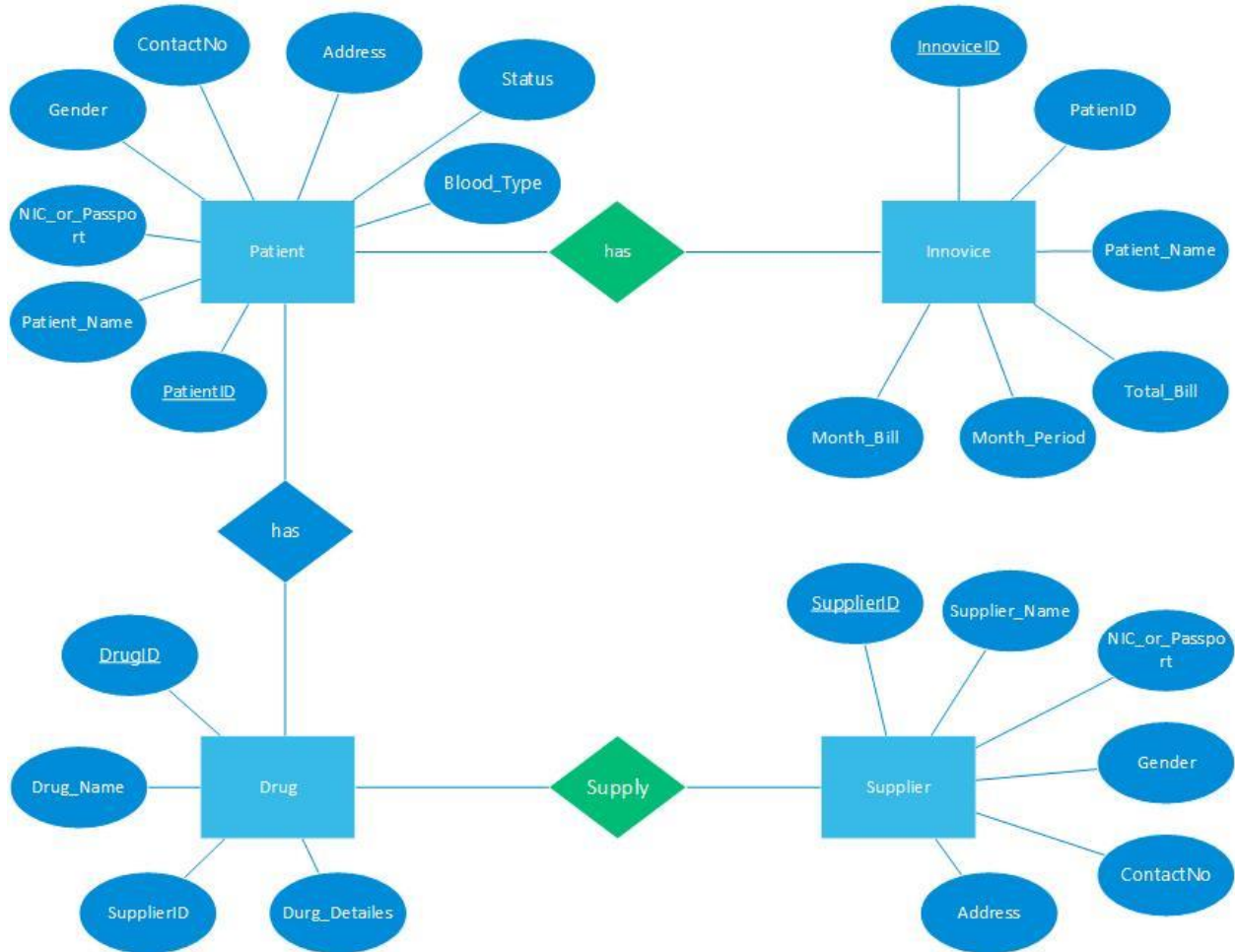


Figure 2: HMS Database ER Diagram

## CLASS DIAGRAM

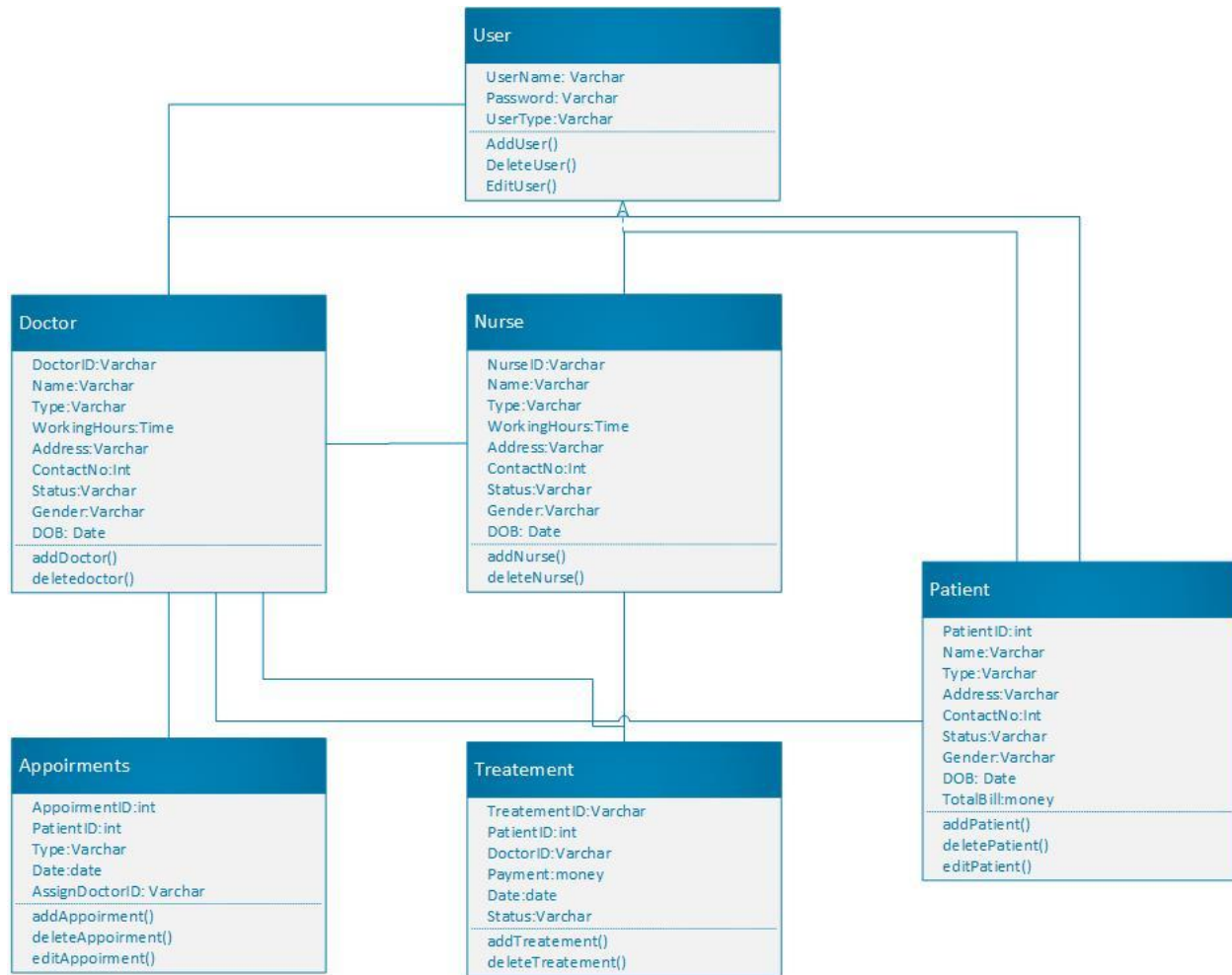


Figure 3: Class Diagram in HMS

## **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 shown. 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

```

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 {
14     4 references | arrih, 106 days ago | 1 author, 1 change
15     public partial class frm_login : Form
16     {
17         public SqlConnection con;
18         public string str;
19         1 reference | arrih, 106 days ago | 1 author, 1 change
20         public frm_login()...
21
22         1 reference | arrih, 106 days ago | 1 author, 1 change
23         private void frm_login_Load(object sender, EventArgs e)
24         {
25             str = @"Data Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=D:\My Project\C#\HMS\HM
26             con = new SqlConnection();
27             con.ConnectionString = str;
28             con.Open();
29             MessageBox.Show("WELCOME NEW LANKA HOSPITAL");
30         }
31
32         1 reference | arrih, 106 days ago | 1 author, 1 change
33         private void btn_login_Click(object sender, EventArgs e)
34         {
35             String qry = "SELECT * FROM users where (UserID='" + txt_uname.Text + "' and Password='" + txt_pass.Text + "')";
36             SqlCommand cmd = new SqlCommand(qry, con);
37             SqlDataAdapter sda = new SqlDataAdapter(cmd);
38             DataTable dt = new DataTable();
39             sda.Fill(dt);
40             string cmbitemvalue = cmb_utype.SelectedItem.ToString();
41             if (dt.Rows.Count > 0)
42             {
43                 for (int i = 0; i < dt.Rows.Count; i++)
44                 {
45                     if (dt.Rows[i]["UserType"].ToString() == cmbitemvalue)
46                     {
47                         if (cmb_utype.SelectedIndex == 0)
48                         {
49                             frm_mdr f1 = new frm_mdr();
50                             f1.Show();
51                             this.Hide();
52                         }
53                         else
54                         {
55                             frm_mnu f2 = new frm_mnu();
56                             f2.Show();
57                             this.Hide();
58                         }
59                     }
60                 }
61             }
62             else
63             {
64                 MessageBox.Show("Invalid entry please check your details.");
65                 txt_uname.Clear();
66                 txt_pass.Clear();
67                 txt_uname.Focus();
68             }
69         }
70     }
71 }

```

Figure 6: Login Screen code



## MAIN SCREEN



Figure 7: Main Screen nurse & Doctor

```

14  {
15      1 reference | arrrh, 106 days ago | 1 author, 1 change
16      public frm_mdr()
17      {
18          InitializeComponent();
19      }
20      1 reference | arrrh, 106 days ago | 1 author, 1 change
21      private void button1_Click(object sender, EventArgs e)
22      {
23          frm_reinn f1 = new frm_reinn();
24          f1.ShowDialog();
25      }
26      1 reference | arrrh, 106 days ago | 1 author, 1 change
27      private void button2_Click(object sender, EventArgs e)
28      {
29          frm_repat f2 = new frm_repat();
30          f2.ShowDialog();
31      }
32      1 reference | arrrh, 106 days ago | 1 author, 1 change
33      private void button4_Click(object sender, EventArgs e)
34      {
35          frm_resupp f3 = new frm_resupp();
36          f3.ShowDialog();
37      }
38      1 reference | arrrh, 106 days ago | 1 author, 1 change
39      private void button5_Click(object sender, EventArgs e)
40      {
41          frm_redru f4 = new frm_redru();
42          f4.ShowDialog();
43      }
44  }

```

Figure 9: Doctor main screen code

```

13  5 references | arrrh, 106 days ago | 1 author, 1 change
14  public partial class frm_mnu : Form
15  {
16      1 reference | arrrh, 106 days ago | 1 author, 1 change
17      public frm_mnu()
18      {
19          InitializeComponent();
20      }
21      1 reference | arrrh, 106 days ago | 1 author, 1 change
22      private void button1_Click(object sender, EventArgs e)
23      {
24          frm_innovice f1 = new frm_innovice();
25          f1.ShowDialog();
26      }
27      1 reference | arrrh, 106 days ago | 1 author, 1 change
28      private void button2_Click(object sender, EventArgs e)
29      {
30          frm_patient f2 = new frm_patient();
31          f2.ShowDialog();
32      }
33      0 references | arrrh, 106 days ago | 1 author, 1 change
34      private void button3_Click(object sender, EventArgs e)
35      {
36      }
37      1 reference | arrrh, 106 days ago | 1 author, 1 change
38      private void button4_Click(object sender, EventArgs e)
39      {
40          frm_Supplier f4 = new frm_Supplier();
41          f4.ShowDialog();
42      }
43  }

```

Figure 8: Nurse main screen code

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

## PATIENT FORM



The screenshot shows a web browser window titled "NEW LANKA HOSPITAL : PATIENT". The main heading is "NEW LANKA HOSPITAL". The form contains the following fields and controls:

- Patient ID**: Text input field.
- Full Name**: Text input field.
- NIC (or) Passport**: Text input field.
- Gender**: Dropdown menu.
- Contect No**: Text input field.
- Address**: Text input field.
- Status**: Dropdown menu.
- Blood Type**: Dropdown menu.
- Search by PatientID**: Text input field.
- Buttons**: Submit, Clear, Update, and Delete.

Figure 11: Patient form

## INVOICE FORM



The screenshot shows a web browser window titled "NEW LANKA HOSPITAL : INNOVICE". The main heading is "NEW LANKA HOSPITAL". The form contains the following fields and controls:

- Innvoice ID**: Text input field.
- Patient ID**: Text input field.
- Patient Name**: Text input field.
- Total Bill**: Text input field.
- Month Fees**: Text input field.
- Payment Options**: Radio buttons for "Spot Payment" and "Inversment" (with a text input field next to it).
- Search by PatientID**: Text input field.
- Buttons**: Submit, Clear, Update, and Delete.

Figure 10: Invoice form

```

C# HMS HMS.frm_innove frm_innove_Load(object sender, EventArgs e)
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 {
14     5 references | arrih, 106 days ago | 1 author, 1 change
15     public partial class frm_innove : Form
16     {
17         SqlConnection con = new SqlConnection(@"Data Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=D:\My Pro
18
19         1 reference | arrih, 106 days ago | 1 author, 1 change
20         public frm_innove()
21         {
22             InitializeComponent();
23         }
24
25         4 references | 0 changes | 0 authors, 0 changes
26         private void ViewData()
27         {
28             string query = "Select * from Innove";
29             SqlDataAdapter sda = new SqlDataAdapter(query, con);
30             DataTable dt = new DataTable();
31
32             con.Open();
33             sda.Fill(dt);
34
35     1 reference | arrih, 106 days ago | 1 author, 1 change
36     private void btn_inclear_Click(object sender, EventArgs e)
37     {
38         txt_inid.Clear();
39         txt_inmon.Clear();
40         txt_inmonfee.Clear();
41         txt_intotalbil.Clear();
42         txt_patid.Clear();
43         txt_patname.Clear();
44     }
45
46     1 reference | arrih, 106 days ago | 1 author, 1 change
47     private void frm_innove_Load(object sender, EventArgs e)
48     {
49         ViewData();
50     }
51
52     1 reference | arrih, 106 days ago | 1 author, 1 change
53     private void btn_insub_Click(object sender, EventArgs e)
54     {
55         string query = "insert into Innove values('"+ txt_inid.Text + "' , '" + txt_patid.Text + "' , '"
56         SqlCommand cmd = new SqlCommand(query, con);
57
58         con.Open();
59         cmd.ExecuteNonQuery();
60         MessageBox.Show(txt_patid.Text + " Details Saved ");
61         con.Close();
62         ViewData();
63     }
64
65     1 reference | 0 changes | 0 authors, 0 changes
66     private void rb_ininvers_CheckedChanged(object sender, EventArgs e)

```



```

63 1 reference | 0 changes | 0 authors, 0 changes
64 private void rb_invers_CheckedChanged(object sender, EventArgs e)
65 {
66     double totalBill = double.Parse(txt_intotalbil.Text);
67     double invoiceMonth = double.Parse(txt_inmon.Text);
68     if (rb_invers.Checked)
69     {
70
71         txt_inmonfee.Text = (totalBill / invoiceMonth).ToString();
72     }
73     else
74     {
75
76     }
77 }
78
79 1 reference | 0 changes | 0 authors, 0 changes
80 private void dgv_Innoveice_CellContentClick(object sender, DataGridViewCellEventArgs e)
81 {
82     txt_inid.Text = dgv_Innoveice.Rows[e.RowIndex].Cells[0].Value.ToString();
83     txt_patid.Text = dgv_Innoveice.Rows[e.RowIndex].Cells[1].Value.ToString();
84     txt_patname.Text = dgv_Innoveice.Rows[e.RowIndex].Cells[2].Value.ToString();
85     txt_intotalbil.Text = dgv_Innoveice.Rows[e.RowIndex].Cells[3].Value.ToString();
86     txt_inmon.Text = dgv_Innoveice.Rows[e.RowIndex].Cells[4].Value.ToString();
87     txt_inmonfee.Text = dgv_Innoveice.Rows[e.RowIndex].Cells[5].Value.ToString();
88 }
89
90 1 reference | 0 changes | 0 authors, 0 changes
91 private void btn_update_Click(object sender, EventArgs e)
92 {
93     string query = "Update Innoveice SET PatientID= " + txt_patid.Text + ", Patient_Name = " + txt
94     SqlCommand cmd = new SqlCommand(query, con);
95
96
97
98
99
100 1 reference | 0 changes | 0 authors, 0 changes
101 private void btn_delete_Click(object sender, EventArgs e)
102 {
103     string message = "Do you want to Delete Record?";
104     string title = "DELETE RECORD";
105     MessageBoxButtons buttons = MessageBoxButtons.OKCancel;
106     DialogResult result = MessageBox.Show(message, title, buttons);
107     if (result == DialogResult.OK)
108     {
109         string query = "DELETE FROM Innoveice WHERE InnoveiceID = " + txt_inid.Text + "";
110         SqlCommand cmd = new SqlCommand(query, con);
111         con.Open();
112         cmd.ExecuteNonQuery();
113         MessageBox.Show(txt_inid.Text + " Data Delete ");
114         con.Close();
115         ViewData();
116     }
117     else
118     {
119
120     }
121 }
122
123 1 reference | 0 changes | 0 authors, 0 changes
124 private void txt_search_TextChanged(object sender, EventArgs e)
125 {
126     string query = "select * from Innoveice WHERE InnoveiceID like " + txt_search.Text + "%";
127     SqlDataAdapter sda = new SqlDataAdapter(query, con);
128     DataTable dt = new DataTable();
129
130     con.Open();
131     sda.Fill(dt);

```

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.