



Back End Development 1

sesi 7



OOP's + Programming

Case Study : Login Register C#

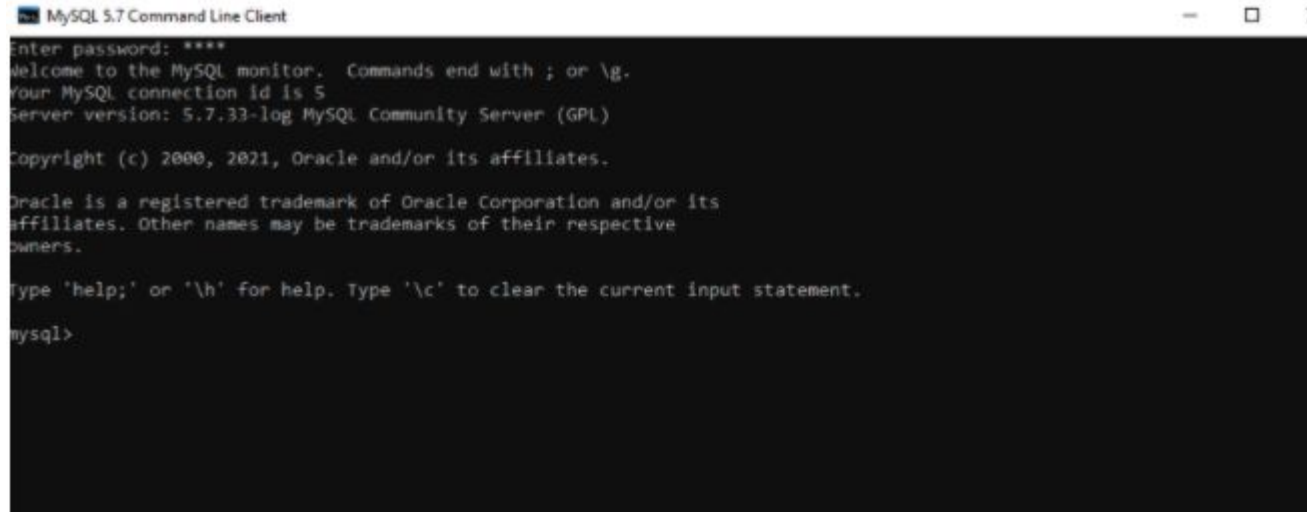
Pada sesi kali ini kita akan membuat login register dengan implementasi Winform dan database MySQL sederhana sekaligus menguji Paradigma OOP yang sudah kita pelajari di sesi sebelumnya.

Tentu sebagai tahap persiapan :

1. Visual Studio Community
2. Sql Server

1) Buat Database dengan praktik Query

```
Create database userdata;
```



```
MySQL 5.7 Command Line Client
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 5
Server version: 5.7.33-log MySQL Community Server (GPL)

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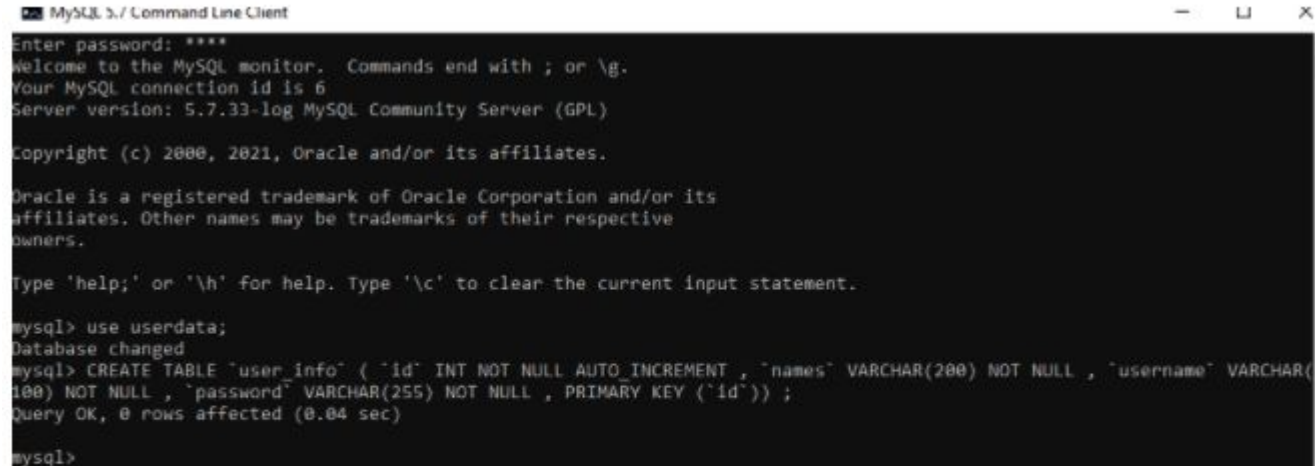
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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

2) Buat Tabel Query

```
CREATE TABLE `user_info` ( `id` INT NOT NULL AUTO_INCREMENT ,
```



The screenshot shows a terminal window titled "MySQL 5.7 Command Line Client". It displays the standard MySQL welcome message, including the connection ID (6) and server version (5.7.33-log MySQL Community Server (GPL)). The user is prompted to enter a password. After logging in, the user enters the command "use userdata;" and the database changes. Then, the user enters the command "CREATE TABLE `user_info` (`id` INT NOT NULL AUTO_INCREMENT , `names` VARCHAR(200) NOT NULL , `username` VARCHAR(100) NOT NULL , `password` VARCHAR(255) NOT NULL , PRIMARY KEY (`id`)) ;". The output shows "Query OK, 0 rows affected (0.04 sec)".

```
MySQL 5.7 Command Line Client
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6
Server version: 5.7.33-log MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use userdata;
Database changed
mysql> CREATE TABLE `user_info` ( `id` INT NOT NULL AUTO_INCREMENT , `names` VARCHAR(200) NOT NULL , `username` VARCHAR(
100) NOT NULL , `password` VARCHAR(255) NOT NULL , PRIMARY KEY (`id`)) ;
Query OK, 0 rows affected (0.04 sec)

mysql>
```



3) Buat Projects

Buka Visual Studio project : `File -> New -> Project` , lalu pilih Visual C#.

Dari window, pilih Windows Forms App(.Net Framework).

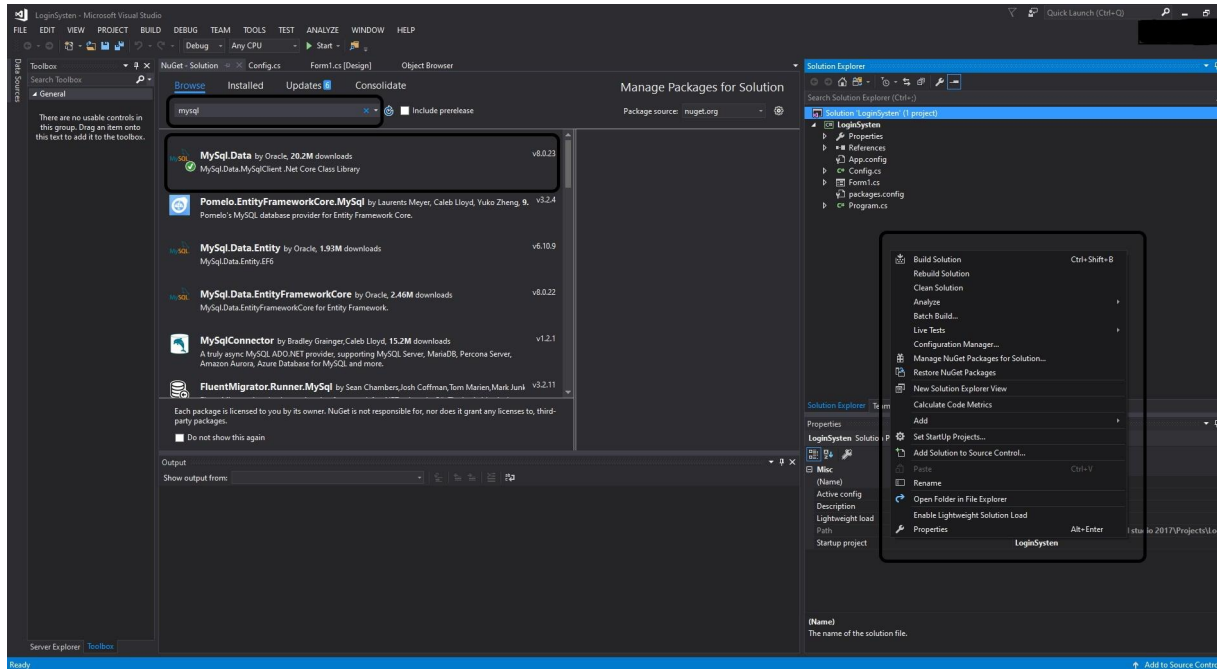
Beri nama pada aplikasi lalu pilih ok.

Project Form secara default akan bernama Form 1

4) Buat Class Config lalu execute queries MySQL

Klik Kanan pada Solution Explorer lalu pilih add -> new item -> Class
Beri nama class = config.cs lalu klik tombol add

- Tambahkan Data library MySQL dengan klik-kanan di solution explorer lalu Manage Nuget Packages dan lakukan pencarian MySQL.Data Library dan pilih install



4) Buat Class Config lalu execute queries MySQL

Klik Kanan pada Solution Explorer lalu pilih add -> new item -> Class
Beri nama class = config.cs lalu klik tombol add

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6  using MySql.Data.MySqlClient;
7  //add this for MessageBox
8  using System.Windows.Forms;
9
10 // add data function classes
11 using System.Data;
12
13 namespace LoginSystem
14 {
15     public class Config
16     {
17         string ConectionString = ""; // save connection string
18         public MySqlConnection connection = null;
19         public string server = "127.0.0.1"; // MySQL host / ip of the computer
20         public string user = "root"; // MySQL user
21         public string password = "manu"; // MySQL password
22         DataSet ds;
23         DataTable dt;
24         public string Table = "user_info"; // initialize db table
25         public string ConnectionType = "";
26         string RecordSource = "";
27
28         DataGridView tempdata;
29
30         public Config()
31         {
32
33     }
```




```
35 // function to connect to the database
36 public void Connect(string database_name)
37 {
38     try
39     {
40         ConnectionString = "SERVER=" + server + ";" + "DATABASE=" + database_name + ";" + "UID=" + user + ";" + "PASSWORD=" + password + ";";
41         connection = new MySqlConnection(ConnectionString);
42     }
43     catch (Exception E)
44     {
45         MessageBox.Show(E.Message);
46     }
47 }
48
49
50
51 // Function to execute select statements
52 public void ExecuteSql(string Sql_command)
53 {
54     nowquiee(Sql_command);
55 }
56
57 }
```



```
59 // creates connection to MySQL before execution
60 public void nowquiee(string sql_comm)
61 {
62     try
63     {
64         MySqlConnection cs = new MySqlConnection(ConectionString);
65         cs.Open();
66         MySqlCommand myc = new MySqlCommand(sql_comm, cs);
67         myc.ExecuteNonQuery();
68
69         cs.Close();
70
71     }
72     catch (Exception err)
73     {
74
75         MessageBox.Show(err.Message);
76     }
77 }
78 }
```



```

80 // function to execute delete , insert and update
81 public void Execute(string Sql_command)
82 {
83     RecordSource = Sql_command;
84     ConnectionType = Table;
85     dt = new DataTable(ConnectionType);
86     try
87     {
88         string command = RecordSource.ToUpper();
89
90         //=====if sql contains select=====
91         MySqlDataAdapter da2 = new MySqlDataAdapter(RecordSource, connection);
92
93         DataSet tempds = new DataSet();
94         da2.Fill(tempds, ConnectionType);
95         da2.Fill(tempds);
96
97         //=====
98
99     }
100 }
101 catch (Exception err) { MessageBox.Show(err.Message); }
102 }
103
104 // function to bring selected results based on column name and row index
105 public string Results(int ROW, string COLUMN_NAME)
106 {
107     try
108     {
109         return dt.Rows[ROW][COLUMN_NAME].ToString();
110     }
111     catch (Exception err)
112     {
113         MessageBox.Show(err.Message);
114         return "";
115     }
116 }
117 }
118

```



```

119 // function to bring selected results based on column index and row index
120 public string Results(int ROW, int COLUMN_NAME)
121 {
122     try
123     {
124         return dt.Rows[ROW][COLUMN_NAME].ToString();
125     }
126     catch (Exception err)
127     {
128         MessageBox.Show(err.Message);
129         return dt.Rows[ROW][COLUMN_NAME].ToString();
130     }
131 }
132
133
134 // Execute select statement
135 public void ExecuteSelect(string Sql_command)
136 {
137     RecordSource = Sql_command;
138     ConnectionType = Table;
139
140     dt = new DataTable(ConnectionType);
141     try
142     {
143         string command = RecordSource.ToUpper();
144         MySqlDataAdapter da = new MySqlDataAdapter(RecordSource, connection);
145         ds = new DataSet();
146         da.Fill(ds, ConnectionType);
147         da.Fill(dt);
148         tempdata = new DataGridView();
149     }
150     catch (Exception err)
151     {
152         MessageBox.Show(err.Message);
153     }
154
155 }
156

```



```
158 // count Number of rows after selecty
159 public int Count()
160 {
161     return dt.Rows.Count;
162 }
163 }
164 }
165
```



5) Buat Register windows form,


Di Microsoft Visual Studio, buat project baru,

Pilih project -> Add Windows Form dari file submenu di sebelah kiri dan beri nama form = register lalu klik add.

Sekarang kita punya 2 Form yaitu

- Form1.cs dan Register.cs

Lalu Lanjutkan untuk design tampilan login dan register



The screenshot shows a Windows Form titled "Form1" with a light gray background. It contains the following elements:

- A "Username" label followed by a text input field.
- A "Password" label followed by a text input field.
- A "Login" button with a blue border and a light blue background.
- An "Exit" button with a light gray background.
- A text label "Create an account with us? Click" followed by a "Register" button with a light gray background.

Login Form

Klik pada Form1.cs di Solution Explorer dan pada form yang ditampilkan ada 3 tombol, 2 textboxes dan 2 label.

Tombol 1 menjadi register form yang akan menampilkan Form Register.

Tombol 2 menjadi login form

Ketika tombol ke 2 di klik akan menjalankan query yang kita buat dan eksekusi langsung ke MySQL .

Tombol 3 berfungsi untuk menutup application.

Form1

Username

Password

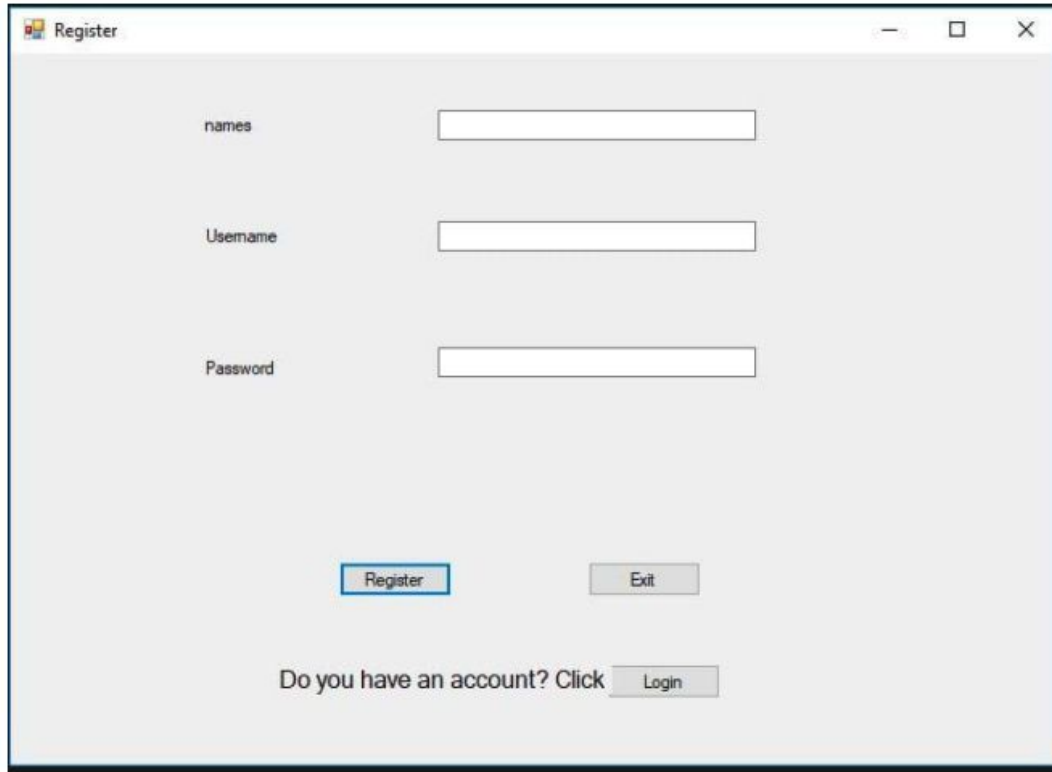
Login Exit

Create an account with us? Click Register

TextBox 1 akan mengijinkan user untuk input username Login, begitu juga Textbox ke 2 akan meng-enable input password oleh user .

Perlu diketahui 2 inputan ini akan di cek dari SQL kita.

Register Form



The image shows a simple graphical user interface for a registration form. The window has a title bar with the text 'Register' and standard minimize, maximize, and close buttons. The main area contains three labels: 'names', 'Username', and 'Password', each followed by a text input field. Below these fields are three buttons: 'Register' (highlighted with a blue border), 'Exit', and 'Login'. The 'Login' button is preceded by the text 'Do you have an account? Click'.

names

Username

Password

Do you have an account? Click

First Button akan mengarah ke tombol daftar untu menyimpan user input dan satu lagi adalah tombol untuk menutup aplikasi register Form.

6) Login Logic

Inisiasi Config File di Form1.cs untuk mengizinkan kita mengakses database dengan mudah

```
// Initialize the connection class
Config db = new Config();
public Form1()
{
    InitializeComponent();
    // pass the database you want to connect to
    db.Connect("userdata");
}
```

Klik Register Button, lalu tambahkan :

```
// start register window
Register register = new Register();
register.Show();
```



HACKTIV8

Pada Tombol Login, tambahkan :

```
// query MySQL database for the data passed from textboxes
db.ExecuteSelect("SELECT * FROM `user_info` where username='" + textBox1.Text+ "' and password ='"+ textBox2.Text+"'");

if (db.Count() == 1)
{
    MessageBox.Show("Success You will Login as"+db.Results(0, "names"));
}
else
{
    MessageBox.Show("Wrong username and password combination" );
}
```

On click of the exit button, add the following code.

```
private void button3_Click(object sender, EventArgs e)
{
    // closes the application
    Environment.Exit(0);
}
```

Form1.cs

```
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
11 namespace LoginSystem
12 {
13     public partial class Form1 : Form
14     {
15
16         // Initialize the connection class
17         Config db = new Config();
18         public Form1()
19         {
20             InitializeComponent();
21
22             // pass the database you want to connect to
23             db.Connect("userdata");
24         }
25
26         private void button1_Click(object sender, EventArgs e)
27         {
28             // query MySQL database for the data passed from textboxes
29             db.ExecuteSelect("SELECT * FROM `user_info` where username='" + textBox1.Text + "' and password ='" + textBox2.Text+"'");
30
31             if (db.Count() == 1)
32             {
33                 MessageBox.Show("Success You will Login as"+db.Results(0, "names"));
34             }
35             else
36             {
37                 MessageBox.Show("Wrong username and password combination" );
38             }
39         }
40     }
```



```
41
42     private void button2_Click(object sender, EventArgs e)
43     {
44         // start register window
45         Register register = new Register();
46
47         register.Show();
48     }
49
50     private void button3_Click(object sender, EventArgs e)
51     {
52
53         // closes the application
54         Environment.Exit(0);
55     }
56
57     private void label3_Click(object sender, EventArgs e)
58     {
59
60     }
61 }
62 }
63
```



7) Register Logic

Inisiasi Config File di Register.cs untuk mengizinkan kita mengakses database dengan mudah

```
Config db = new Config();  
public Register()  
{  
    InitializeComponent();  
    // pass the database you want to connect to  
    db.Connect("userdata");  
}
```

Klik Tombol Exit lalu tambahkan kode berikut :

```
private void button3_Click(object sender, EventArgs e)  
{  
    // closes the register window  
    this.Close();  
}
```

Pada tombol register akan kita tambahkan beberapa code untuk simpan information input user

```
private void button2_Click(object sender, EventArgs e)
{
    // saves data in the database
    db.Execute("INSERT INTO `user_info` (`id`, `names`, `username`, `password`) VALUES (NULL, '"+textBox3.Text+"', '"+textBox1.Text+"',

    this.Close()
}
```

Terakhir tinggal jalankan dan coba lihat ke database