**What is ADO.NET?**

ADO stands for Microsoft ActiveX Data Objects. ADO.NET is one of Microsoft’s Data Access technology using which we can communicate with different data sources. It is a part of the .Net Framework which is used to establish a connection between the .NET Application and data sources. The Data sources can be SQL Server, Oracle, MySQL, and XML, etc. ADO.NET consists of a set of classes that can be used to connect, retrieve, insert, update and delete data (i.e. performing CRUD operation) from data sources. ADO.NET mainly uses **System.Data.dll** and **System.Xml.dll.**

##### ****Establish a connection to SQL Server database and create a table using ADO.NET****

using System;

using System.Data.SqlClient;

namespace AdoNetConsoleApplication

{

class Program

{

static void Main(string[] args)

{

new Program().CreateTable();

Console.ReadKey();

}

public void CreateTable()

{

SqlConnection con = null;

try

{

// Creating Connection

con = new SqlConnection("data source=.; database=student; integrated security=SSPI");

// writing sql query

SqlCommand cm = new SqlCommand("create table student(id int not null, name varchar(100), email varchar(50), join\_date date)", con);

// Opening Connection

con.Open();

// Executing the SQL query

cm.ExecuteNonQuery();

// Displaying a message

Console.WriteLine("Table created Successfully");

}

catch (Exception e)

{

Console.WriteLine("OOPs, something went wrong." + e);

}

// Closing the connection

finally

{

con.Close();

}

}

}

}

##### ****Inserting Record using C# and ADO.NET:****

using System;

using System.Data.SqlClient;

namespace AdoNetConsoleApplication

{

class Program

{

static void Main(string[] args)

{

new Program().InsertRecord();

Console.ReadKey();

}

public void InsertRecord()

{

SqlConnection con = null;

try

{

// Creating Connection

con = new SqlConnection("data source=.; database=student; integrated security=SSPI");

// writing sql query

SqlCommand cm = new SqlCommand("insert into student (id, name, email, join\_date) values ('101', 'Ronald Trump', 'ronald@example.com', '1/12/2017')", con);

// Opening Connection

con.Open();

// Executing the SQL query

cm.ExecuteNonQuery();

// Displaying a message

Console.WriteLine("Record Inserted Successfully");

}

catch (Exception e)

{

Console.WriteLine("OOPs, something went wrong." + e);

}

// Closing the connection

finally

{

con.Close();

}

}

}

}

##### ****Retrieve Record using C# and ADO.NET****

using System;

using System.Data.SqlClient;

namespace AdoNetConsoleApplication

{

class Program

{

static void Main(string[] args)

{

new Program().DisplayData();

Console.ReadKey();

}

public void DisplayData()

{

SqlConnection con = null;

try

{

// Creating Connection

con = new SqlConnection("data source=.; database=student; integrated security=SSPI");

// writing sql query

SqlCommand cm = new SqlCommand("Select \* from student", con);

// Opening Connection

con.Open();

// Executing the SQL query

SqlDataReader sdr = cm.ExecuteReader();

// Iterating Data

while (sdr.Read())

{

// Displaying Record

Console.WriteLine(sdr["id"] + " " + sdr["name"] + " " + sdr["email"]);

}

}

catch (Exception e)

{

Console.WriteLine("OOPs, something went wrong." + e);

}

// Closing the connection

finally

{

con.Close();

}

}

}

}

##### ****Deleting Record from SQL Server database using C# and ADO.NET****

using System;

using System.Data.SqlClient;

namespace AdoNetConsoleApplication

{

class Program

{

static void Main(string[] args)

{

new Program().DeleteData();

Console.ReadKey();

}

public void DeleteData()

{

SqlConnection con = null;

try

{

// Creating Connection

con = new SqlConnection("data source=.; database=student; integrated security=SSPI");

// writing sql query

SqlCommand cm = new SqlCommand("delete from student where id = '101'", con);

// Opening Connection

con.Open();

// Executing the SQL query

cm.ExecuteNonQuery();

Console.WriteLine("Record Deleted Successfully");

}

catch (Exception e)

{

Console.WriteLine("OOPs, something went wrong." + e);

}

// Closing the connection

finally

{

con.Close();

}

}

}

}