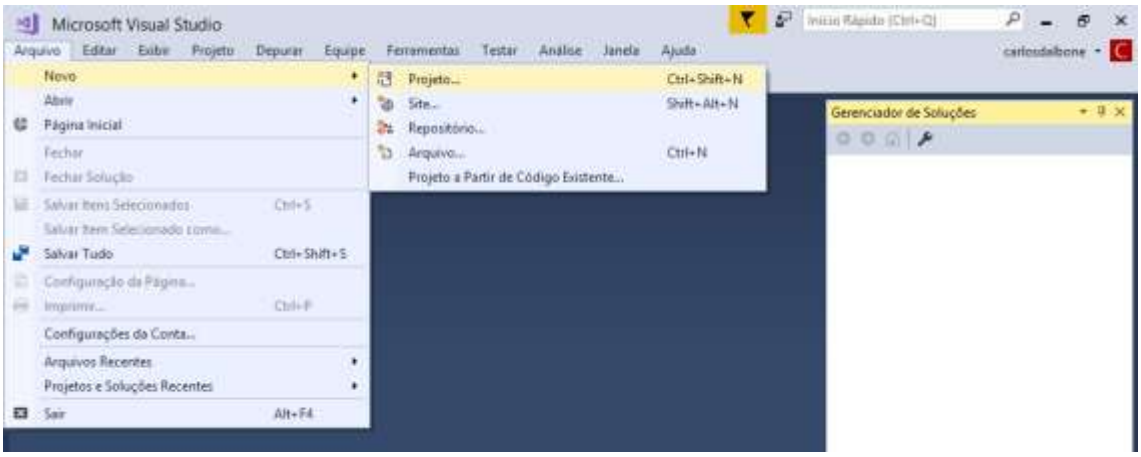
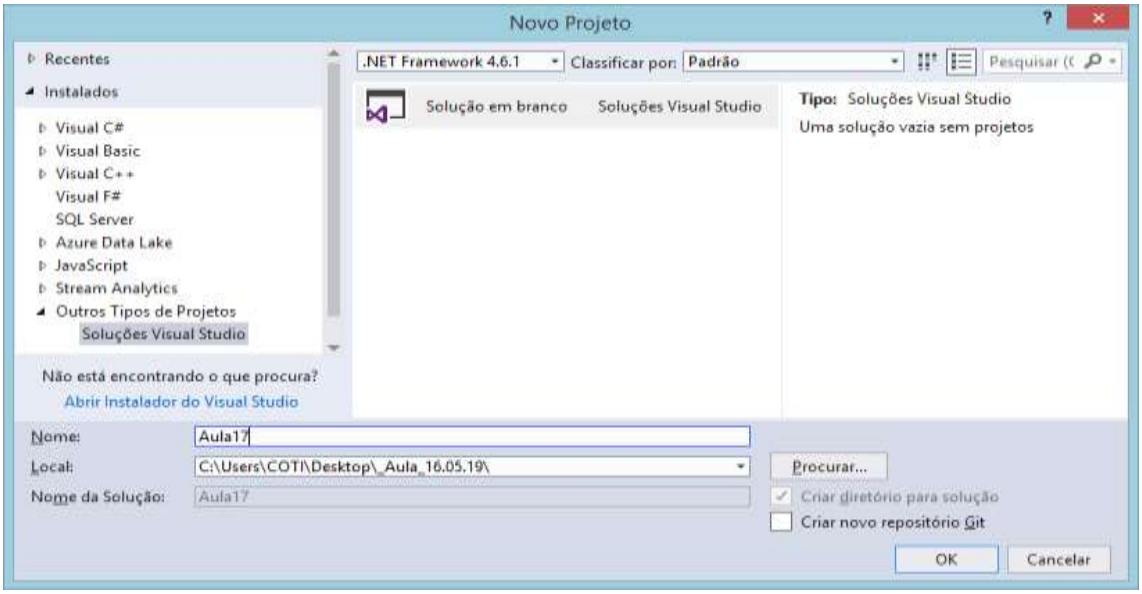
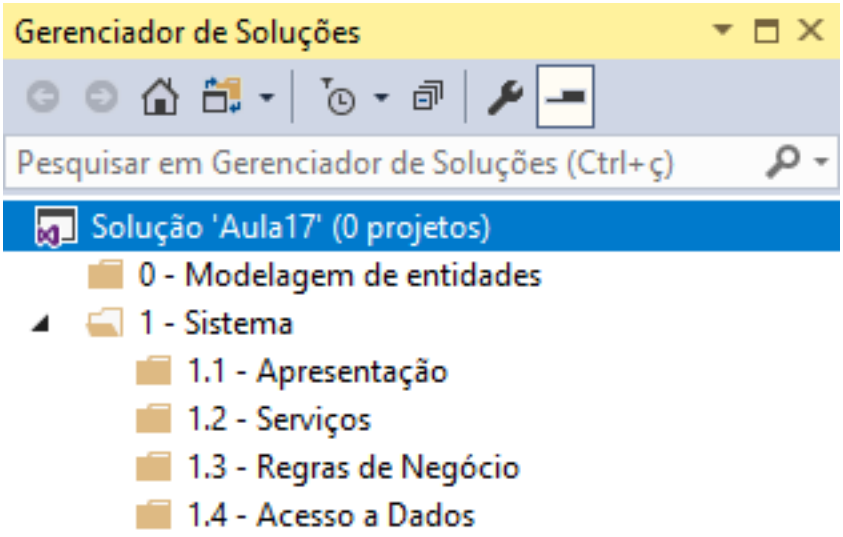
Criando uma nova solution em branco:

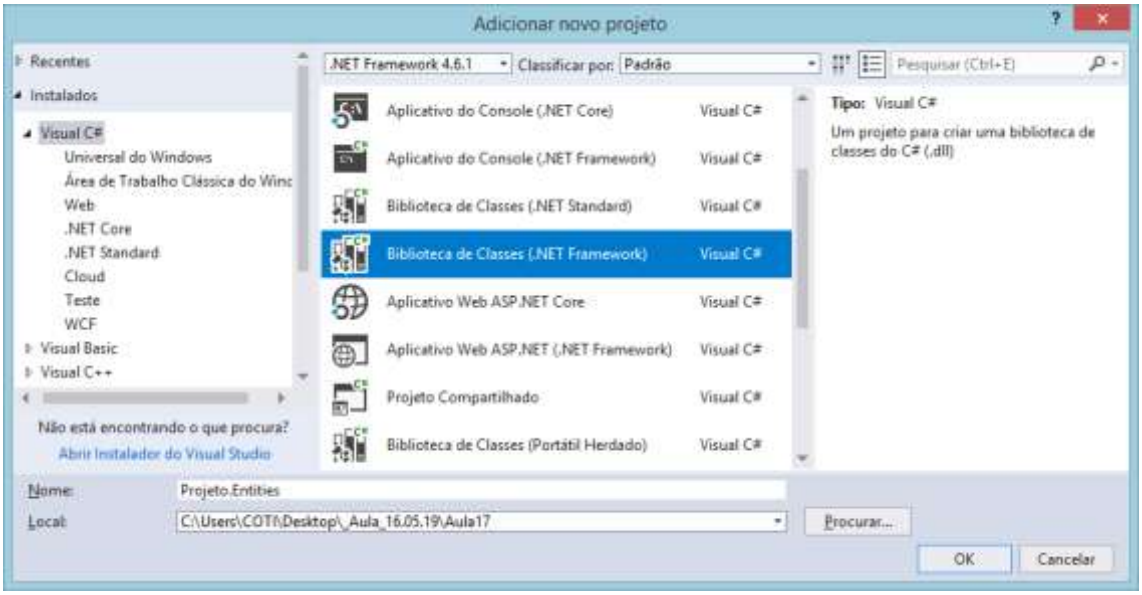






0 - Modelagem de entidades

Biblioteca de Classes .NET Framework

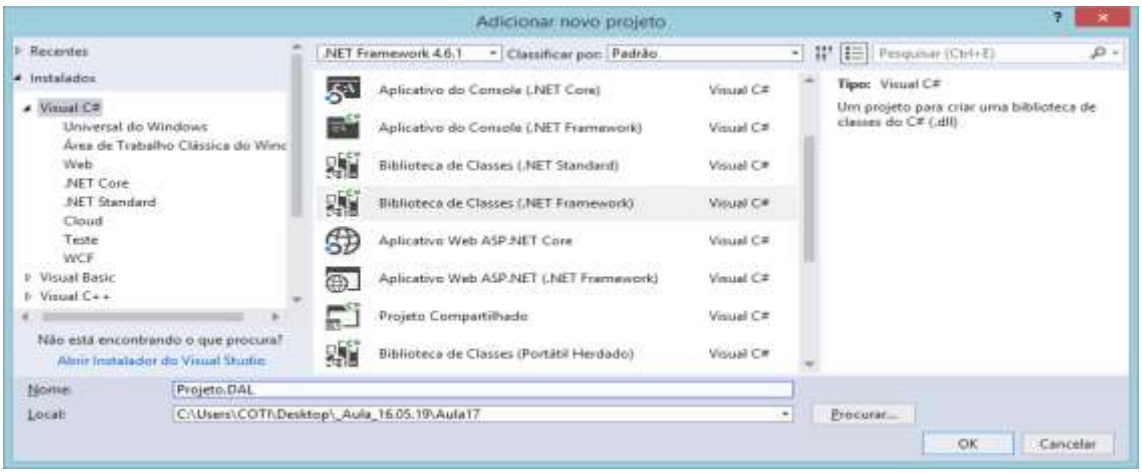



```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Projeto.Entities
{
    public class Cliente
    {
        //propriedades -> prop + 2x[tab]
        public int IdCliente { get; set; }
        public string Nome { get; set; }
        public string Email { get; set; }
        public DateTime DataCriacao { get; set; }

        //construtor default -> ctor + 2x[tab]
        public Cliente()
        {
            //vazio
        }

        //sobrecarga de métodos (OVERLOADING)
        public Cliente(int idCliente, string nome,
                       string email, DateTime dataCriacao)
        {
            IdCliente = idCliente;
            Nome = nome;
            Email = email;
            DataCriacao = dataCriacao;
        }
```

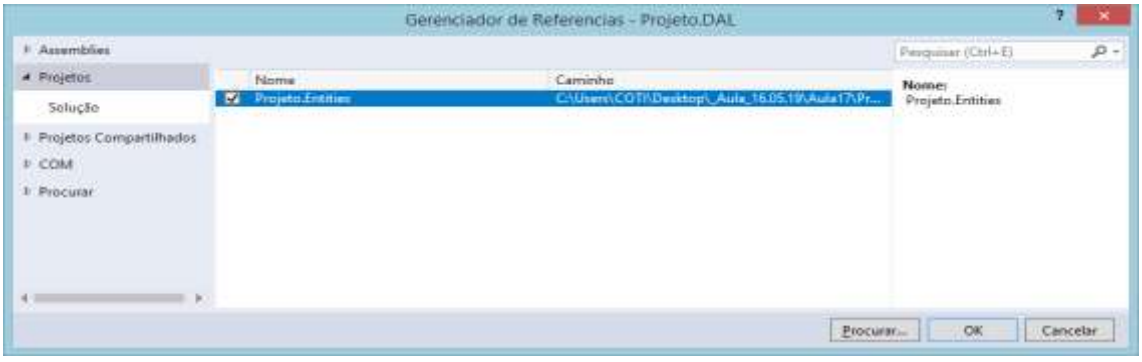
```
        //sobrescrita do método ToString()
        public override string ToString()
        {
            return $"Id: {IdCliente}, Nome: {Nome}, Email: {Email},
                    Data Criação: {DataCriacao}";
        }
    }
}
```

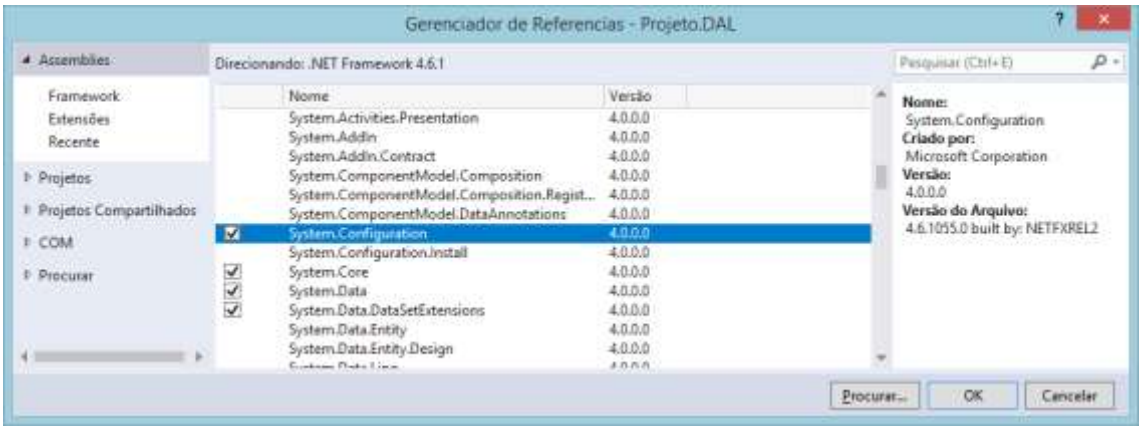
1.4 - Camada de Acesso a dados

DAL - Data Access Layer (Class Library .NET Framework)



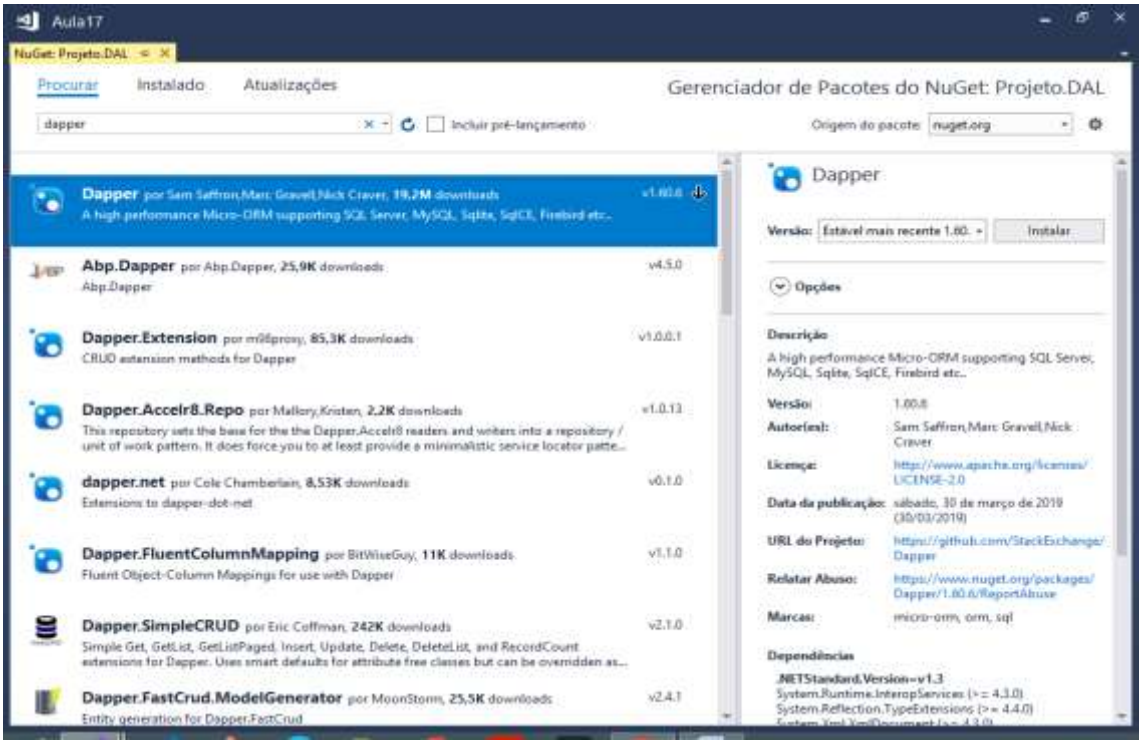
Addicionando referencias no projeto DAL:





Instalando o Dapper:

Gerenciador de pacotes do NuGet

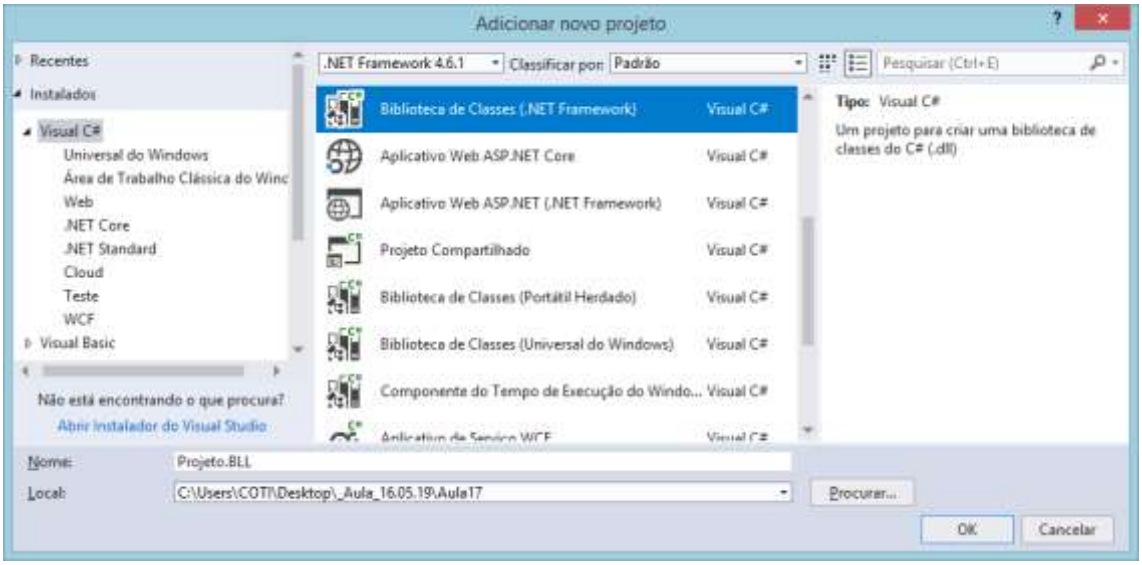


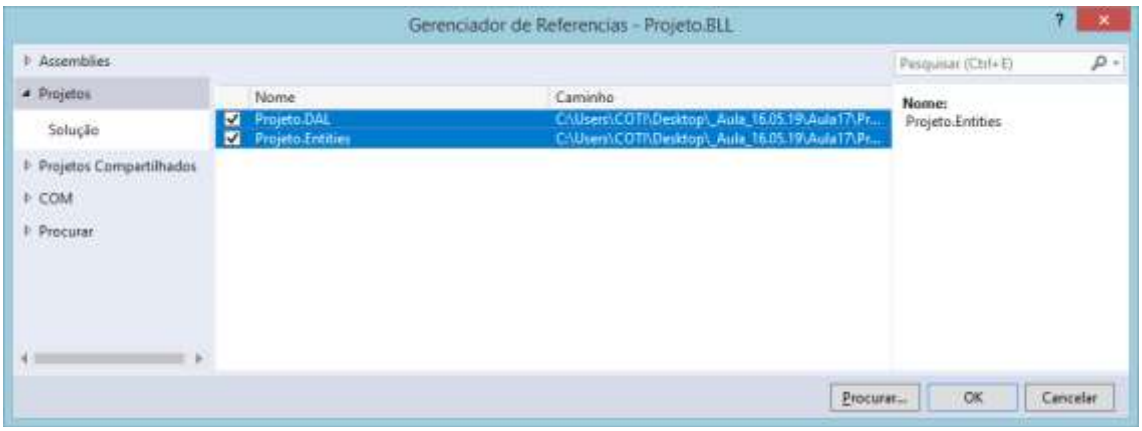

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Data.SqlClient; //importando
using System.Configuration; //importando
using Projeto.Entities; //importando
using Dapper; //importando

namespace Projeto.DAL
{
    public class ClienteRepository
    {
        //atributo
        private string connectionString;

        //construtor
        public ClienteRepository()
        {
            connectionString = ConfigurationManager
                .ConnectionStrings["projeto"].ConnectionString;
        }

        public void Insert(Cliente cliente)
        {
            using (var conn = new SqlConnection(connectionString))
            {
```

```
                string query = "insert into Cliente(Nome, Email, DataCriacao) "
                             + "values(@Nome, @Email, GETDATE())";

                conn.Execute(query, cliente);
            }
        }

        public void Update(Cliente cliente)
        {
            using (var conn = new SqlConnection(connectionString))
            {
                string query = "update Cliente set Nome = @Nome, Email = @Email "
                             + "where IdCliente = @IdCliente";

                conn.Execute(query, cliente);
            }
        }

        public void Delete(int id)
        {
            using (var conn = new SqlConnection(connectionString))
            {
                string query = "delete from Cliente
                                where IdCliente = @IdCliente";

                conn.Execute(query, new { IdCliente = id });
            }
        }

        public List<Cliente> SelectAll()
        {
            using (var conn = new SqlConnection(connectionString))
            {
                string query = "select * from Cliente";

                return conn.Query<Cliente>(query).ToList();
            }
        }

        public Cliente SelectById(int id)
        {
            using (var conn = new SqlConnection(connectionString))
            {
                string query = "select * from Cliente
                                where IdCliente = @IdCliente";

                return conn.QuerySingleOrDefault<Cliente>(query,
                           new { IdCliente = id });
            }
        }
    }
}
```

1.3 - Camada de Regras de Negócio

Biblioteca de Classes .Net Framework



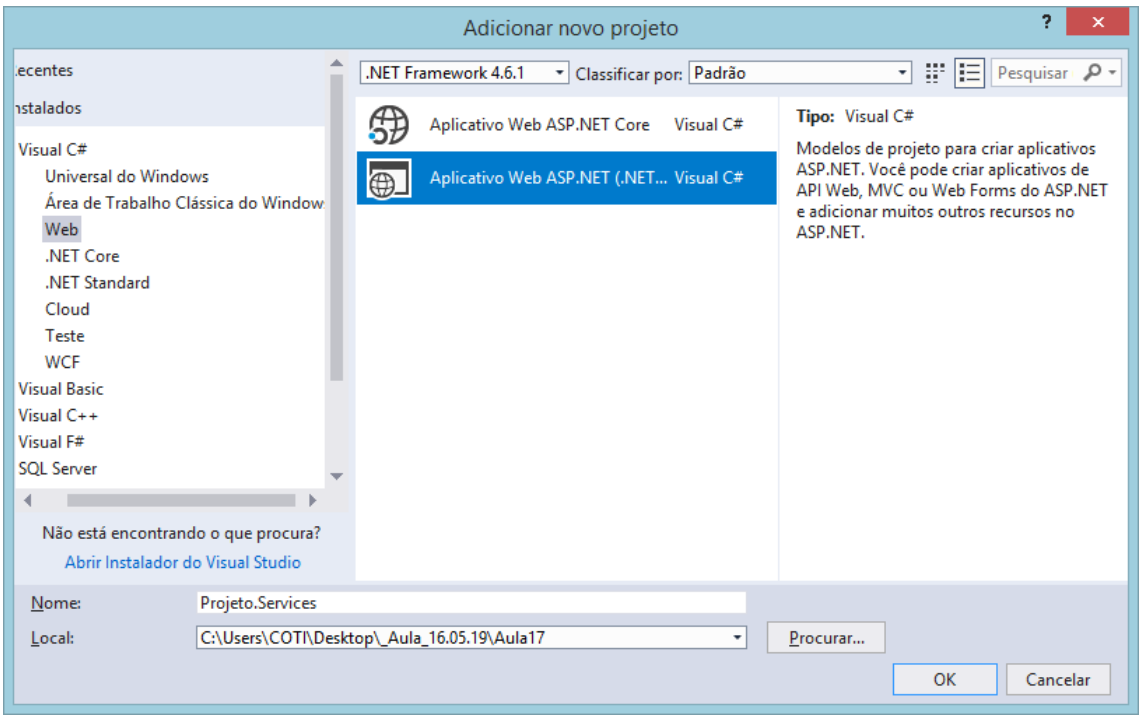


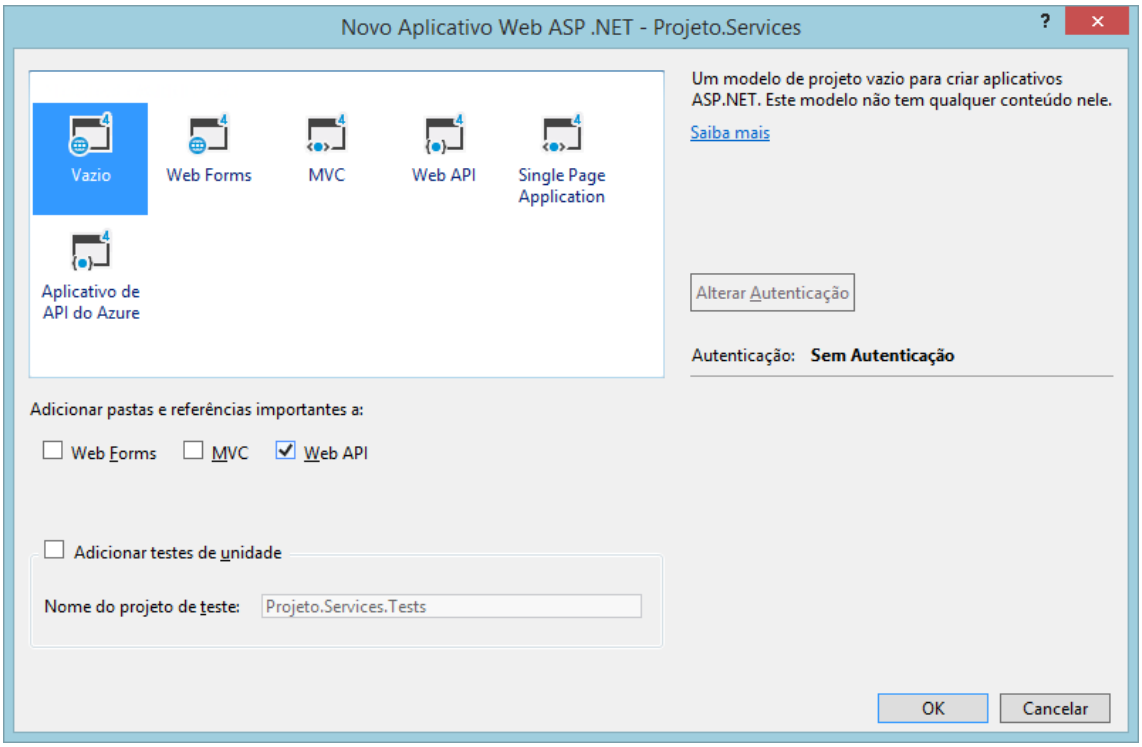

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using Projeto.Entities;
using Projeto.DAL;

namespace Projeto.BLL
{
    public class ClienteBusiness
    {
        //atributo..
        private ClienteRepository repository;

        //construtor -> ctor + 2x[tab]
        public ClienteBusiness()
        {
            repository = new ClienteRepository();
        }
```

```
        //método para cadastrar cliente
        public void CadastrarCliente(Cliente cliente)
        {
            repository.Insert(cliente);
        }

        //método para atualizar cliente
        public void AtualizarCliente(Cliente cliente)
        {
            repository.Update(cliente);
        }

        //método para excluir cliente
        public void ExcluirCliente(int id)
        {
            repository.Delete(id);
        }

        //método para listar todos os clientes
        public List<Cliente> ConsultarTodos()
        {
            return repository.SelectAll();
        }

        //método para consultar cliente por id
        public Cliente ConsultarPorId(int id)
        {
            return repository.SelectById(id);
        }
    }
}
```

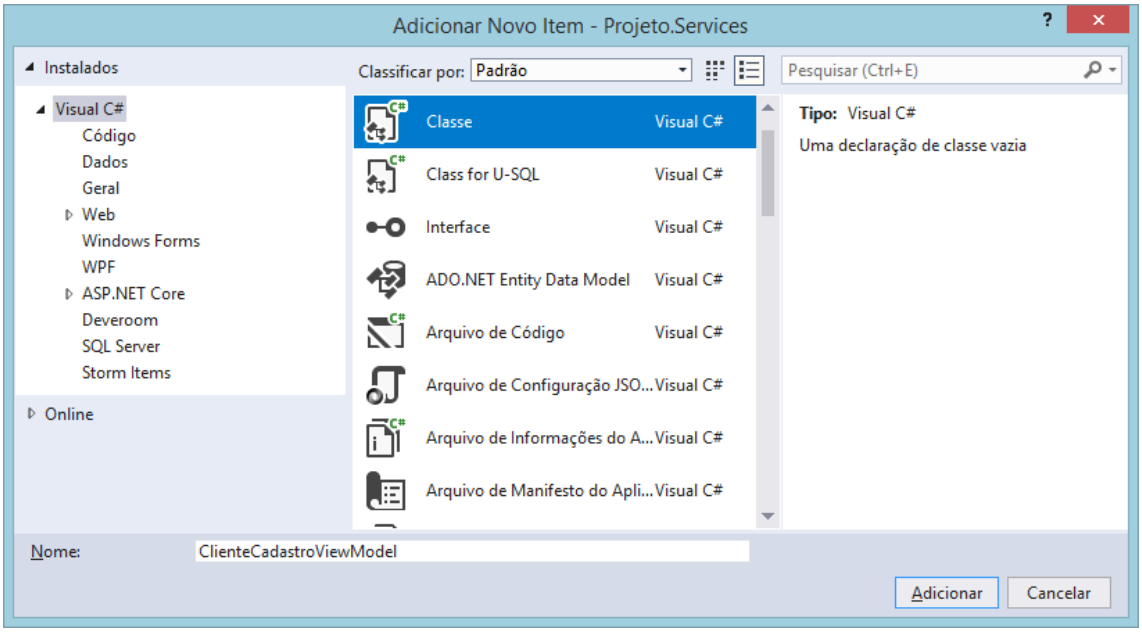
1.2 - Serviços

Projeto Asp.Net .NET Framework (WebApi)





Criando as classes ViewModel para os serviços da API:




```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.ComponentModel.DataAnnotations;

namespace Projeto.Services.Models
{
```

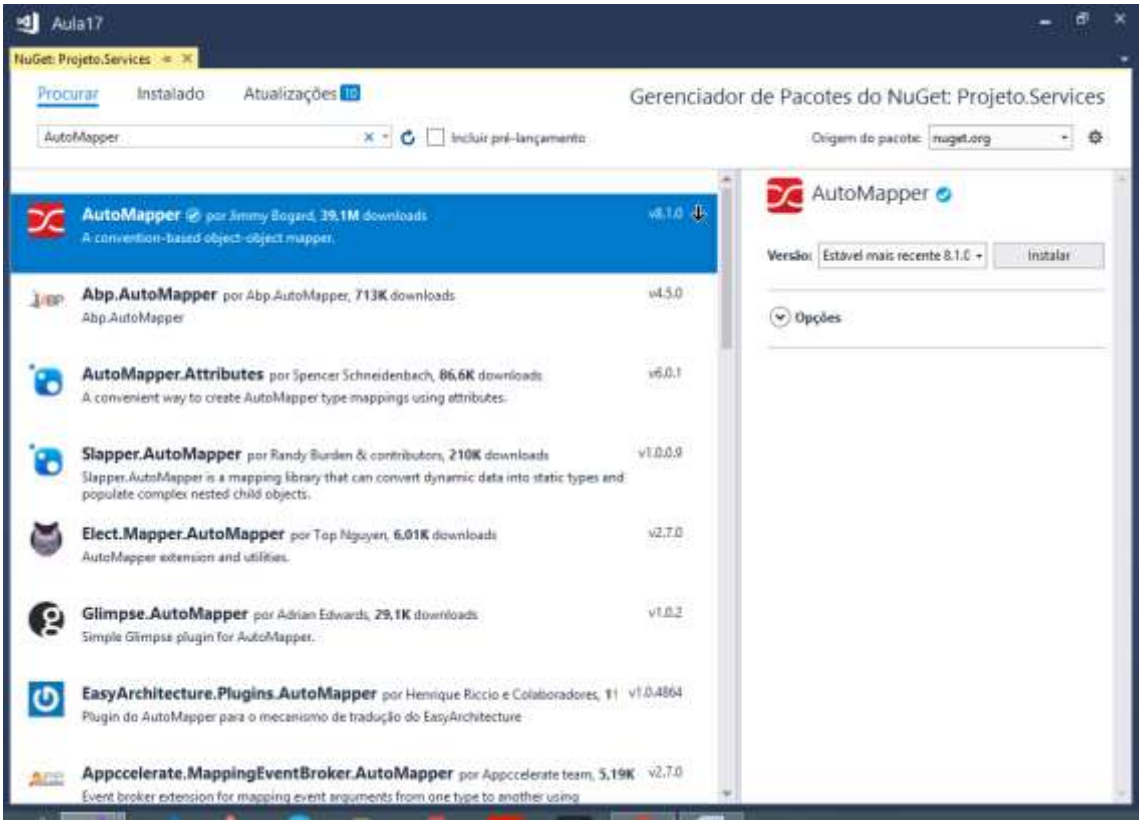
```
    public class ClienteCadastroViewModel
    {
        [Required(ErrorMessage = "Informe o nome do cliente.")]
        public string Nome { get; set; }

        [EmailAddress(ErrorMessage = "Email inválido.")]
        [Required(ErrorMessage = "Informe o email do cliente.")]
        public string Email { get; set; }
    }
}
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.ComponentModel.DataAnnotations;

namespace Projeto.Services.Models
{
    public class ClienteEdicaoViewModel
    {
        [Required(ErrorMessage = "Informe o id do cliente.")]
        public int IdCliente { get; set; }

        [Required(ErrorMessage = "Informe o nome do cliente.")]
        public string Nome { get; set; }

        [EmailAddress(ErrorMessage = "Email inválido.")]
        [Required(ErrorMessage = "Informe o email do cliente.")]
        public string Email { get; set; }
    }
}
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;

namespace Projeto.Services.Models
{
    public class ClienteConsultaViewModel
    {
        public int IdCliente { get; set; }
        public string Nome { get; set; }
        public string Email { get; set; }
        public DateTime DataCriacao { get; set; }
    }
}
```

Instalando o AutoMapper:

Gerenciador de pacotes do NuGet



Mapeando as transferencias de dados entre ViewModels e Entidades e vice-versa

\Mappings\ViewModelToEntityMap.cs

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using AutoMapper;
using Projeto.Entities;
using Projeto.Services.Models;

namespace Projeto.Services.Mappings
{
    //REGRA) Herdar Profile
    public class ViewModelToEntityMap : Profile
    {
        //construtor -> ctor + 2x[tab]
        public ViewModelToEntityMap()
        {
            CreateMap<ClienteCadastroViewModel, Cliente>();
            CreateMap<ClienteEdicaoViewModel, Cliente>();
        }
    }
}
```

\Mappings\EntityToViewModelMap.cs

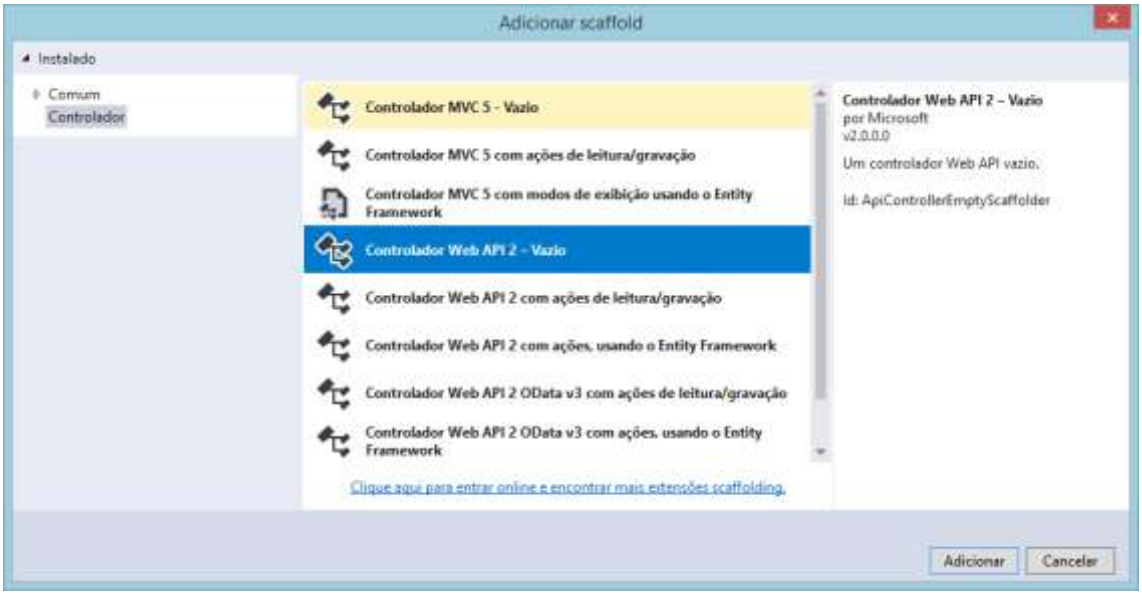
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using AutoMapper;
using Projeto.Entities;
using Projeto.Services.Models;

namespace Projeto.Services.Mappings
{
    //REGRA) Herdar Profile
    public class EntityToViewModelMap : Profile
    {
        //construtor -> ctor + 2x[tab]
        public EntityToViewModelMap()
        {
            CreateMap<Cliente, ClienteConsultaViewModel>();
        }
    }
}
```

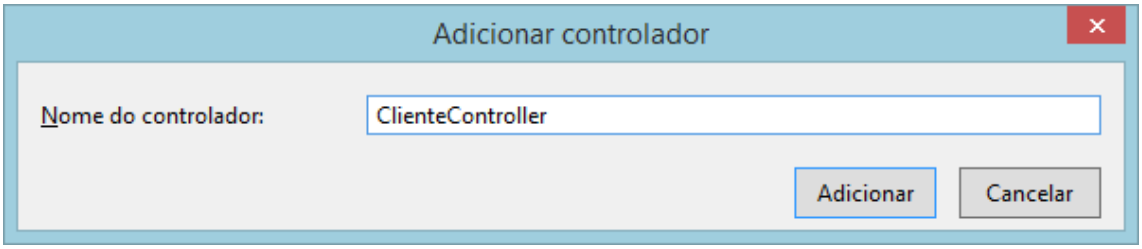
Configurando o AutoMapper na classe Global.asax

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.Http;
using System.Web.Routing;
using AutoMapper;
using Projeto.Services.Mappings;

namespace Projeto.Services
{
    public class WebApiApplication : System.Web.HttpApplication
    {
        protected void Application_Start()
        {
            GlobalConfiguration.Configure(WebApiConfig.Register);

            //registrando as classes de mapeamento
            //feitas com o AutoMapper..
            Mapper.Initialize(cfg
                =>
                {
                    cfg.AddProfile<ViewModelToEntityMap>();
                    cfg.AddProfile<EntityToViewModelMap>();
                });
        }

    }

}
```

Criando controller do projeto WebApi

Classe utilizada para disponibilizar os serviços de Cliente no projeto API

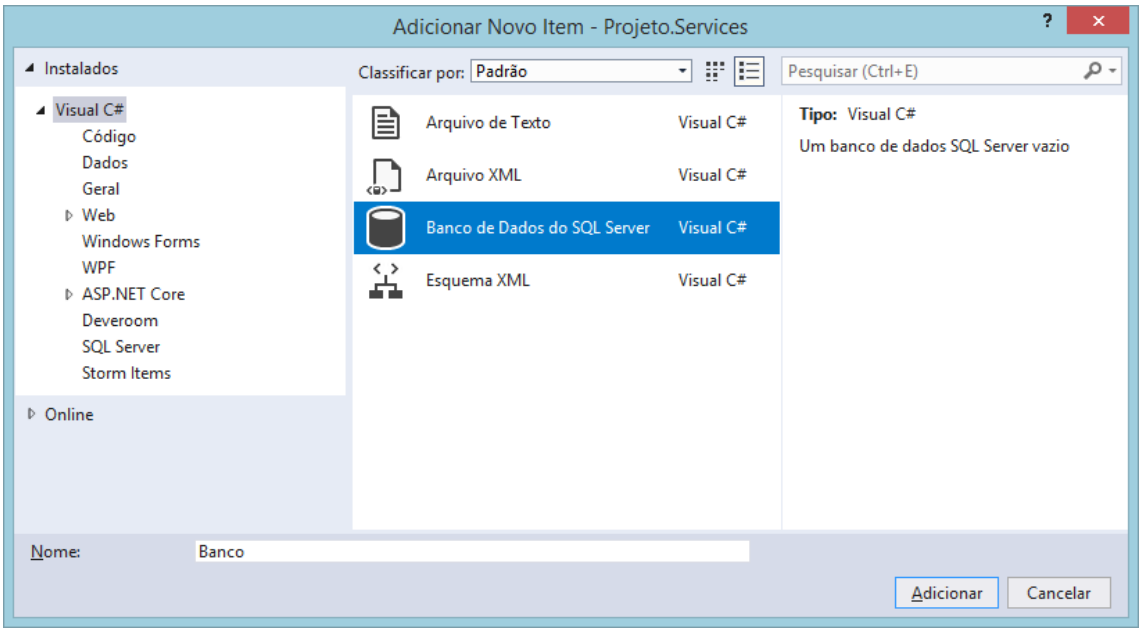





```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Net;
using System.Net.Http;
using System.Web.Http;
using AutoMapper; //importando
using Projeto.BLL; //importando
using Projeto.Entities; //importando
using Projeto.Services.Models; //importando

namespace Projeto.Services.Controllers
{
    [RoutePrefix("api/Cliente")]
    public class ClienteController : ApiController
    {
        //atributo
        private ClienteBusiness business;

        //construtor -> ctor + 2x[tab]
        public ClienteController()
        {
            business = new ClienteBusiness();
        }
```

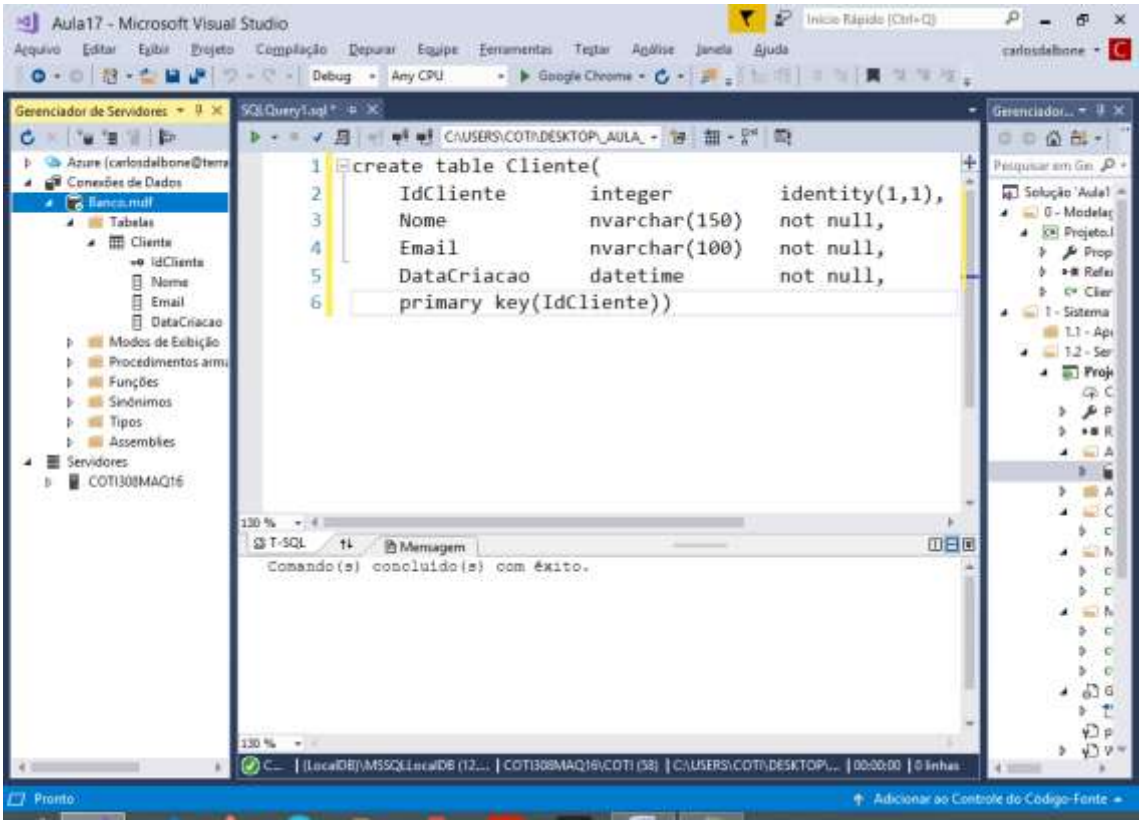
```
        [HttpPost]
        public HttpResponseMessage Post(ClienteCadastroViewModel model)
        {
            if(ModelState.IsValid)
            {
                try
                {
                    var cliente = Mapper.Map<Cliente>(model);
                    business.CadastrarCliente(cliente);

                    //retornar um status de erro HTTP 200 (OK)
                    return Request.CreateResponse(HttpStatusCode.OK,
                        $"Cliente {cliente.Nome}, cadastrado com sucesso");
                }
                catch(Exception e)
                {
                    //retornar um status de erro HTTP 500 (InternalServerError)
                    return Request.CreateResponse(HttpStatusCode
                                .InternalServerError,
                                "Erro interno de servidor: " + e.Message);
                }
            }
            else
            {
                //retornar um status de erro HTTP 400 (BadRequest)
                return Request.CreateResponse(HttpStatusCode.BadRequest,
                                        "Ocorreram erros de validação.");
            }
        }
    }
}
```

Criando a base de dados:
MDF - Master Database File



```
create table Cliente(
      IdCliente       integer          identity(1,1),
      Nome            nvarchar(150)    not null,
      Email           nvarchar(100)    not null,
      DataCriacao     datetime         not null,
      primary key(IdCliente))
```

Executando:



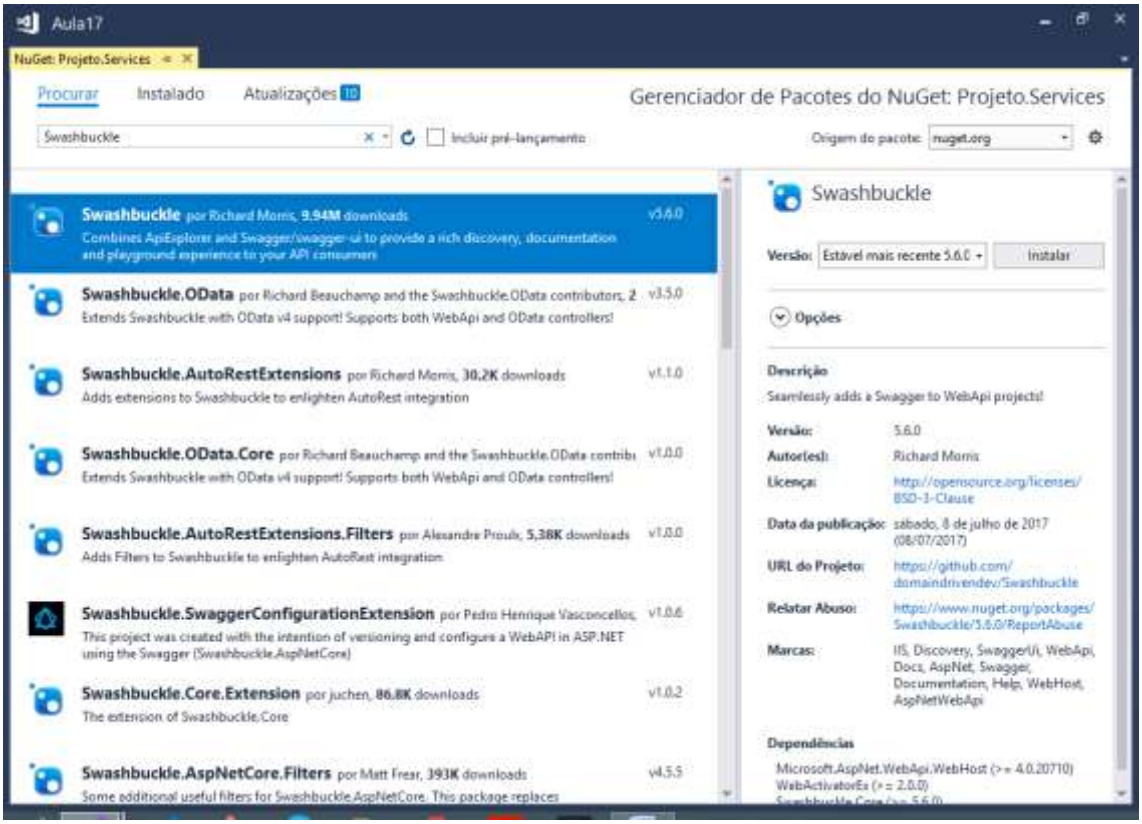
\Web.config.xml

mapeando a string de conexão do banco de dados

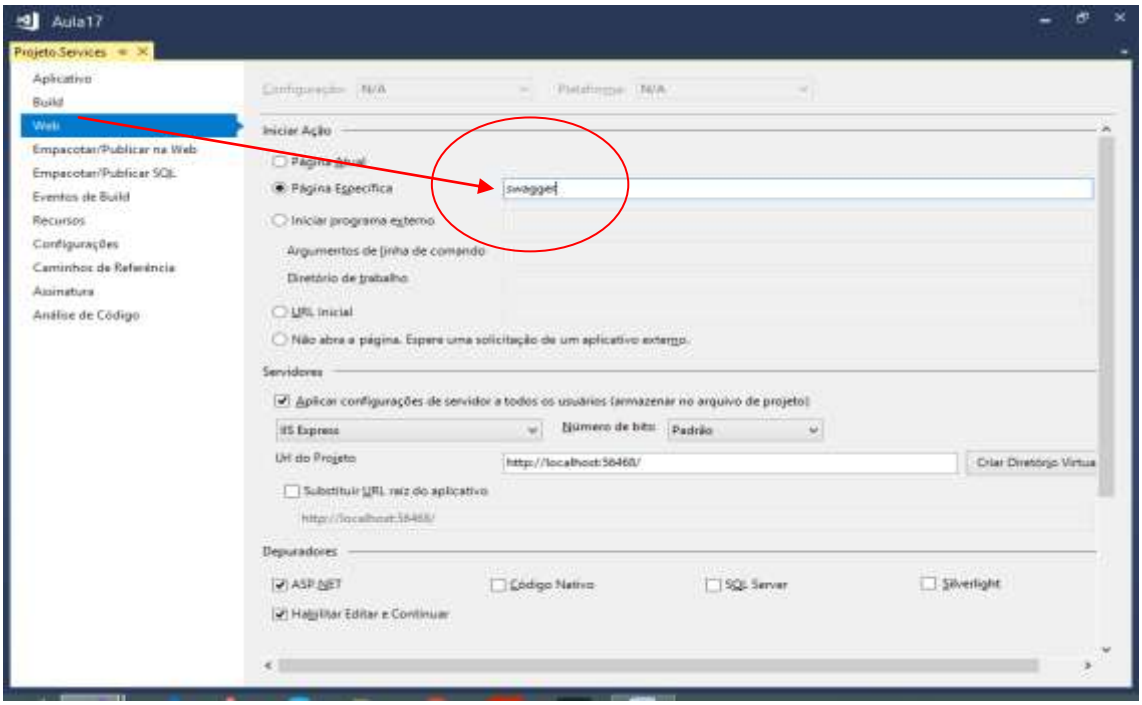
```
<connectionStrings>
  <add
    name="projeto"
    connectionString="Data Source=(LocalDB)\
       MSSQLLocalDB;AttachDbFilename=
       C:\Users\COTI\Desktop\_Aula_16.05.19\
       Aula17\Projeto.Services\App_Data\
       Banco.mdf;Integrated Security=True"
  />
</connectionStrings>
```

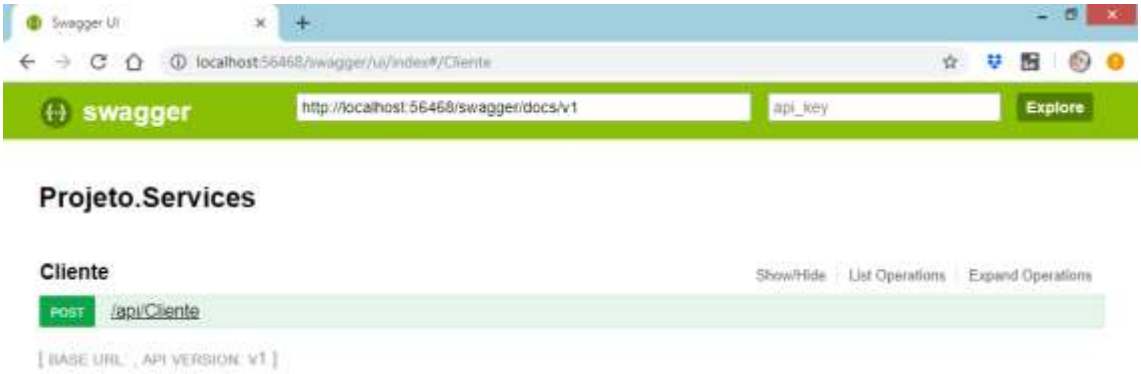
Swagger

Framework utilizado para gerar documentação em projetos do tipo API.

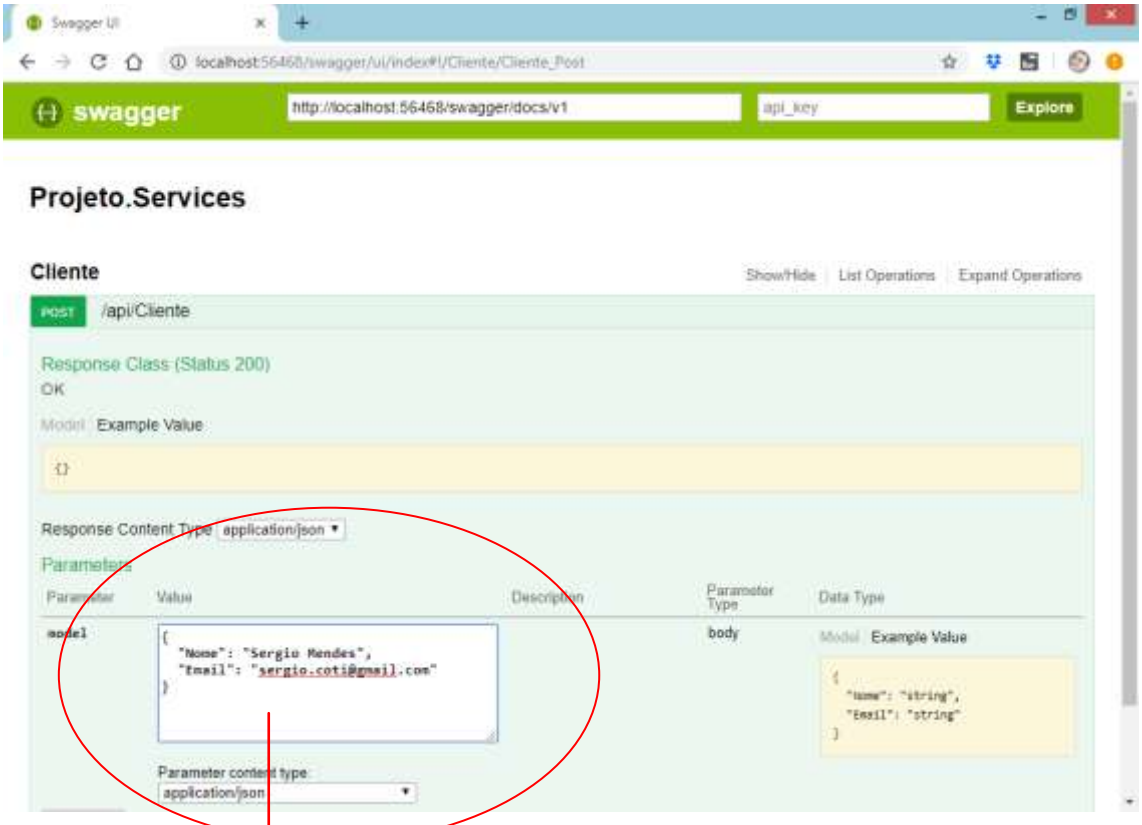


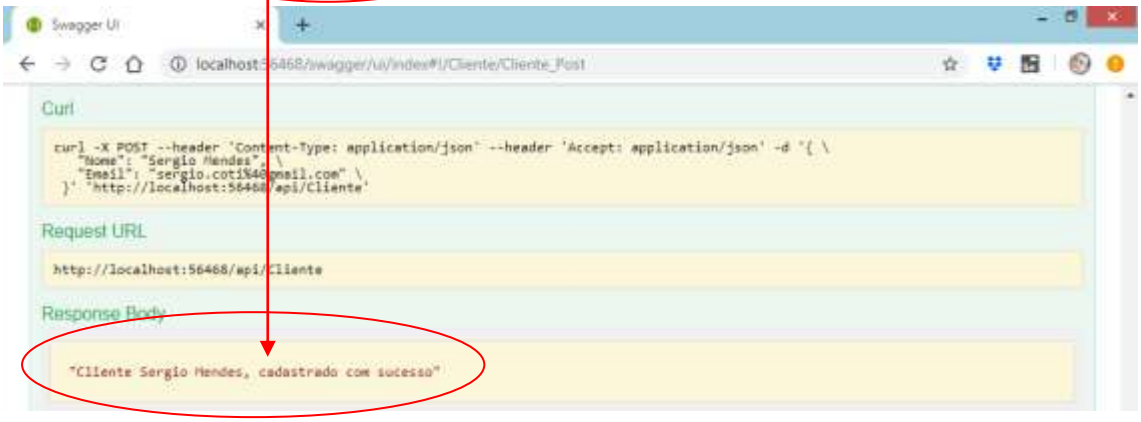
Alterando a página inicial do projeto: **swagger**




swagger
http://localhost:56468/swagger/docs/v1
api_key
Explore
Projeto.Services
Cliente
Show/Hide
List Operations
Expand Operations
POST
/api/Cliente

Testando:


swagger
http://localhost:56468/swagger/docs/v1
api_key
Explore
Projeto.Services
Cliente
Show/Hide
List Operations
Expand Operations
POST
/api/Cliente
Response Class (Status 200)
OK
Example Value
Response Content Type
application/json
Parameters
Parameter
Value
Description
Parameter Type
Data Type
model
{
"Nome": "Sergio Mendes",
"Email": "sergio.coti@gmail.com"
}
body
Example Value
Parameter content type
application/json


Curl
Request URL
http://localhost:56468/api/Cliente
Response Body
"Cliente Sergio Mendes, cadastrado com sucesso"