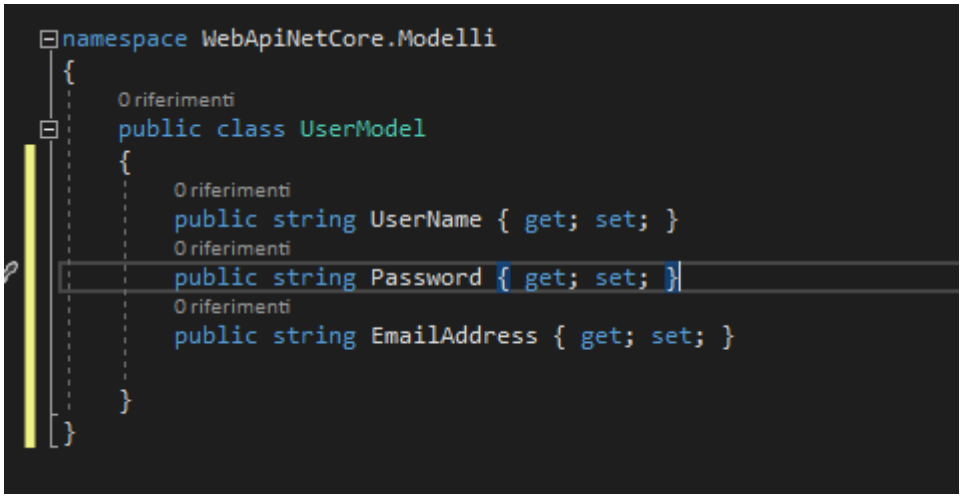
jwt authentication con netcore.

Video dimostrativo step by step:

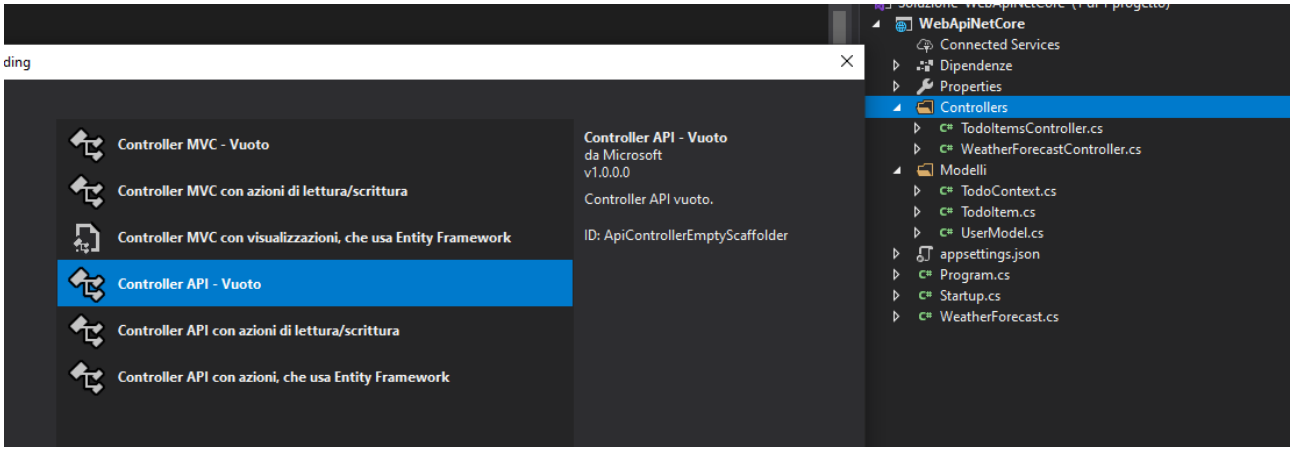
https://www.youtube.com/watch?v=l56YLbAVAfo

Step per implementare JWT bearer

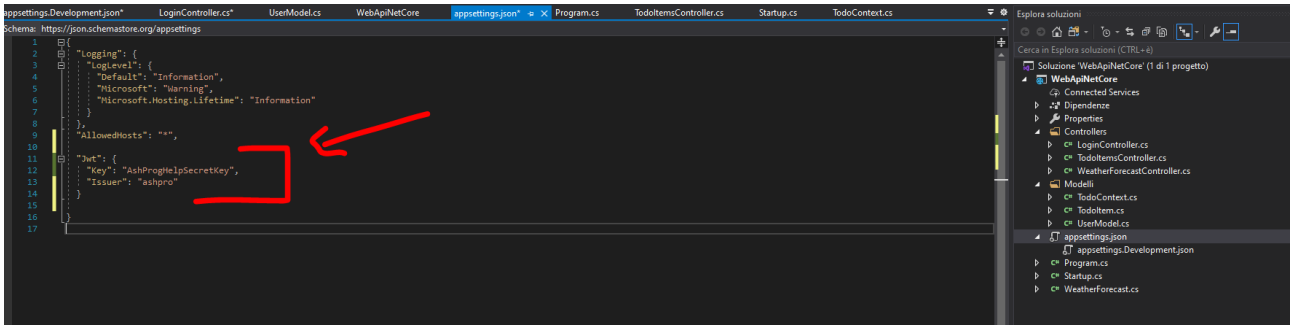
Creo un model (il model servirà per raccogliere i dati relativi all'utenza dal db quando viene recuperata dal db per poi memorizzarli nei claims:



Creo controller api vuoto di Login:



Vado aggiungere la secret key nel file di configurazione

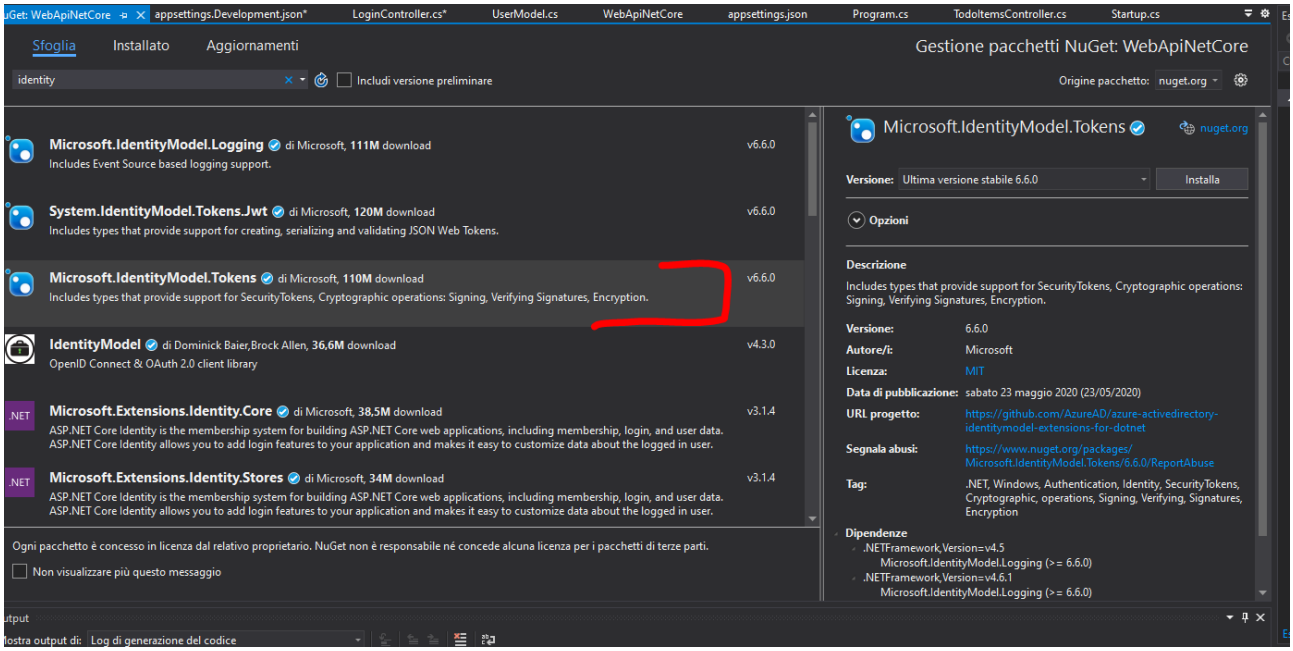


Questo è il codice del controllo di login:

```
using System.Linq;
using System.Security.Claims;
using System.Text;
using System.Threading.Tasks;
using Microsoft.AspNetCore.Http;
using Microsoft.AspNetCore.Mvc;
using Microsoft.Extensions.Configuration;
using Microsoft.IdentityModel.Tokens;
using WebApiNetCore.Modelli;

namespace WebApiNetCore.Controllers
{
    [Route("api/[controller]")]
    [ApiController]
    public class LoginController : ControllerBase
    {
        private IConfiguration _config;
        public LoginController(IConfiguration config)
        {
            _config = config;
        }

        //prende le credenziali di login e se le credenziali sono valide
ossia userid e pwd trovano riscontro nel database
        //con i dati dell'utente viene generato un token
        public IActionResult Login(string username, string pass)
        {
            UserModel login = new UserModel();
            login.UserName = username;
            login.Password = pass;
            IActionResult reponse = Unauthorized();

            var user = AuthenticateUser(login);
            if (user != null)
            {
                //se le credenziali di accesso sono corrette genero il
token
                var tokenStr = GenerateJSONWebToken(user);
                reponse = Ok(new {token= tokenStr });
            }
            return reponse;
        }

        private UserModel AuthenticateUser(UserModel login)
        {
            UserModel user = null;
            //qui va a vedere nel db se esiste un username con userid e
password
            if (login.UserName == "ashproghelp" && login.Password ==
"123")
```

```
            {
                user = new UserModel { UserName = "ashproghelp",
EmailAddress = "ashproghelp@gmail.com", Password = "123" };
            }

            return user;
        }


        private string GenerateJSONWebToken(UserModel userinfo)
        {
            //installare qui pacchetto nuget
microsoft.identity.model.tokens

            //la chiave dell'appsetting  viene codificata in binario
            var securityKey = new
SymmetricSecurityKey(Encoding.UTF8.GetBytes(_config["Jwt:Key"]));
            //la chiave dell'appsetting  viene passata a
SigningCredentials per ottenere delle credenziali
            var credentials = new SigningCredentials(securityKey,
SecurityAlgorithms.HmacSha256);

            //crea i JWT claims
            var claims = new[]
            {
                //qui installare pacchetto nuget
system.identitymodel.token.jwt
            new Claim(JwtRegisteredClaimNames.Sub,userinfo.UserName),
             new
Claim(JwtRegisteredClaimNames.Email,userinfo.EmailAddress),
              new
Claim(JwtRegisteredClaimNames.Jti,Guid.NewGuid().ToString())
            };

            //e successivamente si crea il jwt Token
            var token = new JwtSecurityToken(
                issuer: _config["Jwt:Issuer"],
                audience: _config["Jwt:Issuer"],
               claims,
               expires: DateTime.Now.AddMinutes(120),
               signingCredentials: credentials
                );
            //il token viene passato all'handler di gestione....
            var encodetoken = new
JwtSecurityTokenHandler().WriteToken(token);
            return encodetoken;
        }
    }
}
```

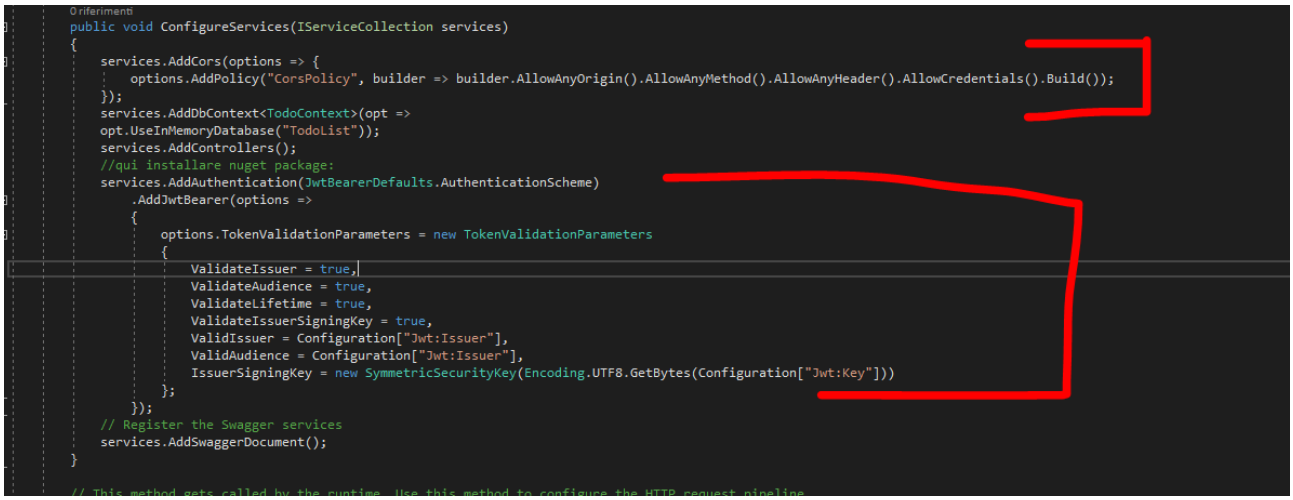
Installare mycrosoft.Identitymodel.Tokens e **system.identitymodel.token.jwt** con nuget



Poi occorre installare anche

`nuget system.identitymodel.token.jwt`

quindi andare a registrate nei servizi:



```
0 riferimenti
public void ConfigureServices(IServiceCollection services)
{
    services.AddCors(options => {
        options.AddPolicy("CorsPolicy", builder => builder.AllowAnyOrigin().AllowAnyMethod().AllowAnyHeader().AllowCredentials().Build());
    });
    services.AddDbContext<TodoContext>(opt =>
    opt.UseInMemoryDatabase("TodoList"));
    services.AddControllers();
    //qui installare nuget package:
    services.AddAuthentication(JwtBearerDefaults.AuthenticationScheme)
        .AddJwtBearer(options =>
        {
            options.TokenValidationParameters = new TokenValidationParameters
            {
                ValidateIssuer = true,
                ValidateAudience = true,
                ValidateLifetime = true,
                ValidateIssuerSigningKey = true,
                ValidIssuer = Configuration["Jwt:Issuer"],
                ValidAudience = Configuration["Jwt:Issuer"],
                IssuerSigningKey = new SymmetricSecurityKey(Encoding.UTF8.GetBytes(Configuration["Jwt:Key"]))
            };
        });
    // Register the Swagger services
    services.AddSwaggerDocument();
}

// This method gets called by the runtime. Use this method to configure the HTTP request pipeline.
```

Quindi andare a registrare il servizio aggiungendo cors per permettere di chiamare le api da domini differenti esplicitando determinate policies, e successivamente andando ad aggiungere la autenticazione JWT esplicitando i parametri di validazione:

```
public void ConfigureServices(IServiceCollection services)
        {
            services.AddCors(options => {
                options.AddPolicy("CorsPolicy", builder =>
builder.AllowAnyOrigin().AllowAnyMethod().AllowAnyHeader().AllowCredentia
ls().Build());
```

```
            });


services.AddAuthentication(JwtBearerDefaults.AuthenticationScheme)
                .AddJwtBearer(options =>
                {
                    options.TokenValidationParameters = new
TokenValidationParameters
                    {
                        ValidateIssuer = true,
                        ValidateAudience = true,
                        ValidateLifetime = true,
                        ValidateIssuerSigningKey = true,
                        ValidIssuer = Configuration["Jwt:Issuer"],
                        ValidAudience = Configuration["Jwt:Issuer"],
                        IssuerSigningKey = new
SymmetricSecurityKey(Encoding.UTF8.GetBytes(Configuration["Jwt:Key"]))
                    };
                });
        }
```

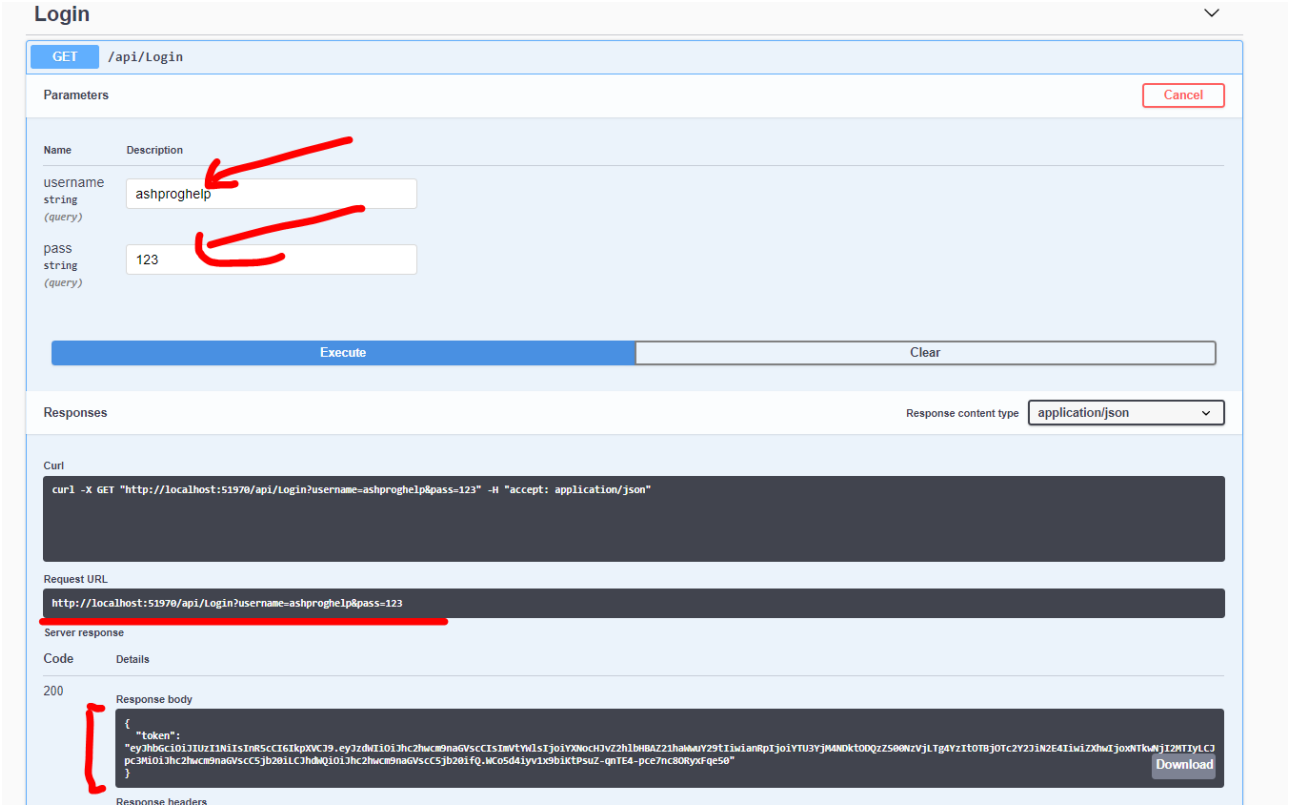

```
// This method gets called by the runtime. Use this method to configure the HTTP request pipeline.
0 riferimenti
public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
{
    if (env.IsDevelopment())
    {
        app.UseDeveloperExceptionPage();
    }

    //app.UseHttpsRedirection();

    app.UseRouting();
    app.UseAuthentication();

    app.UseAuthorization();

    app.UseEndpoints(endpoints =>
    {
        endpoints.MapControllers();
    });

    // Register the Swagger generator and the Swagger UI middlewares
    app.UseOpenApi();
    app.UseSwaggerUi3();
}
}
```

In fondo a login controller aggiungiamo anche due api che ci permettono di testare il tutto e di recuperare utenza claims e dei dati di esempio:

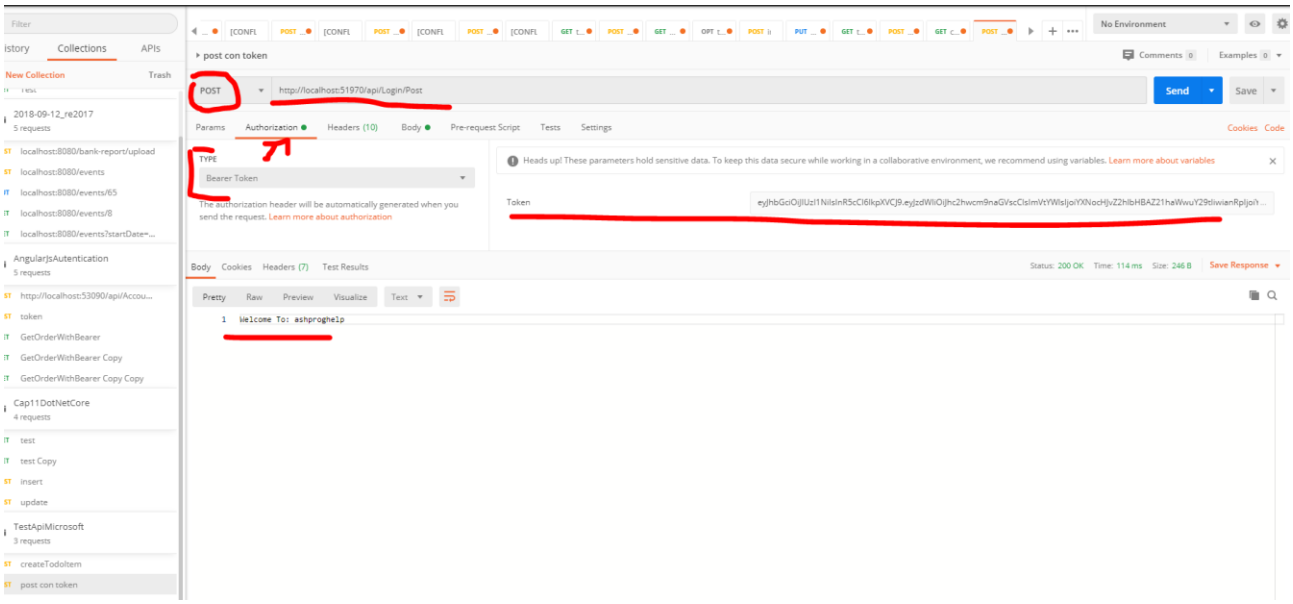
```
[Authorize]
[HttpPost("Post")]
0 riferimenti
public string Post()
{
    var identity = HttpContext.User.Identity as ClaimsIdentity;
    IList<Claim> claim = identity.Claims.ToList();
    var userName = claim[0].Value;
    return "Welcome To: " + userName;
}

[Authorize]
[HttpGet("GetValue")]
0 riferimenti
public ActionResult<IEnumerable<string>> Get()
{
    return new string[] { "value1", "value2" };
}
```

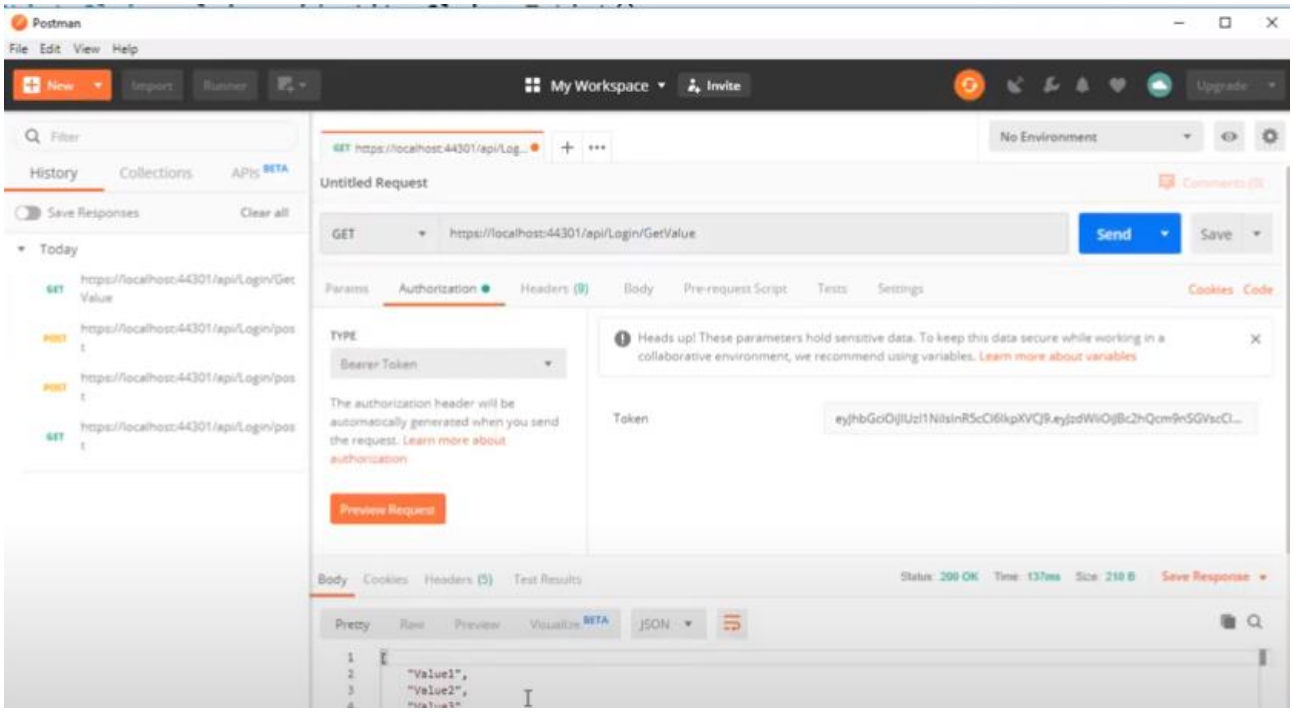
Per testare:

lanciare login, questa genererà un token



Il token va copiato nell'api coperta da security ad esempio post (ricordarsi di passare il token impostando il type bearertoken):


post con token
POST
http://localhost:51970/api/Login/Post
Send
Save
Params
Authorization
Headers (10)
Body
Pre-request Script
Tests
Settings
TYPE
Bearer Token
The authorization header will be automatically generated when you send the request. Learn more about authorization
Token
Body
Cookies
Headers (7)
Test Results
Pretty
Raw
Preview
Visualize
Text
1 Welcome To: ashproghelp


Postman
File Edit View Help
New
Import
Runner
My Workspace
Invite
Upgrade
No Environment
History
Collections
APIs BETA
Save Responses
Clear all
Today
Untitled Request
GET
https://localhost:44301/api/Login/GetValue
Send
Save
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
Cookies
Code
TYPE
Bearer Token
The authorization header will be automatically generated when you send the request. Learn more about authorization
Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. Learn more about variables
Token
Preview Request
Body
Cookies
Headers (5)
Test Results
Status: 200 OK
Time: 137ms
Size: 210 B
Save Response
Pretty
Raw
Preview
Visualize BETA
JSON
"Value1",
"Value2",