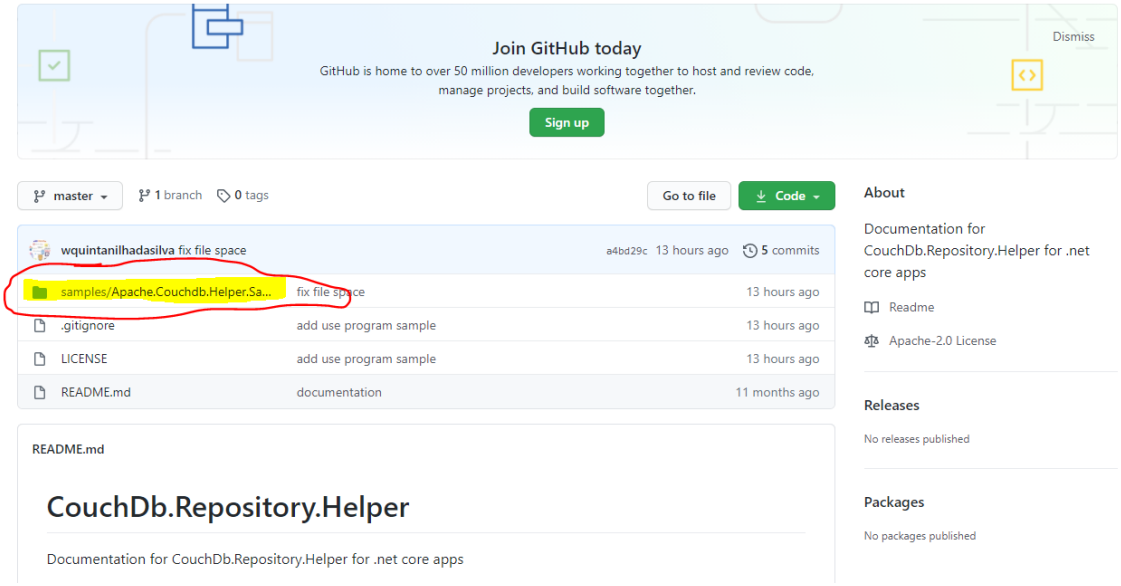
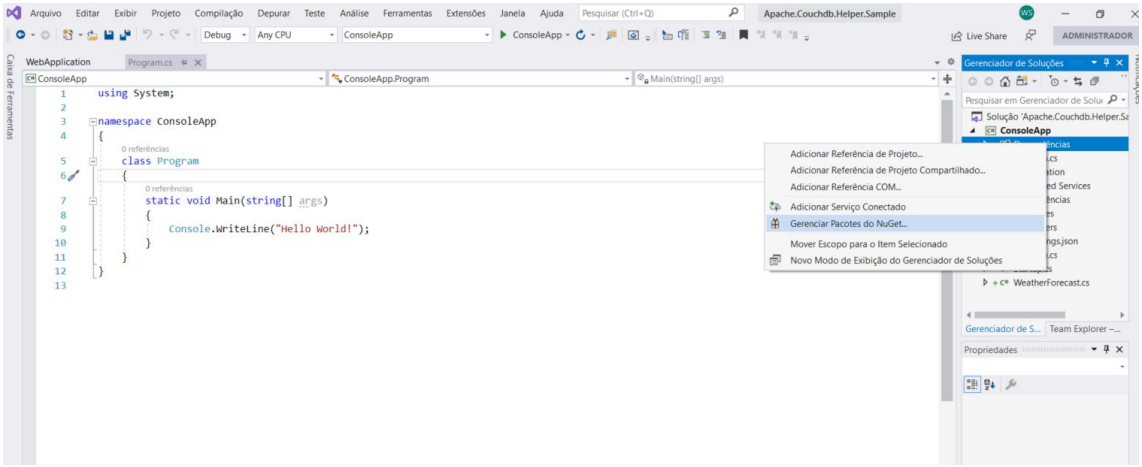
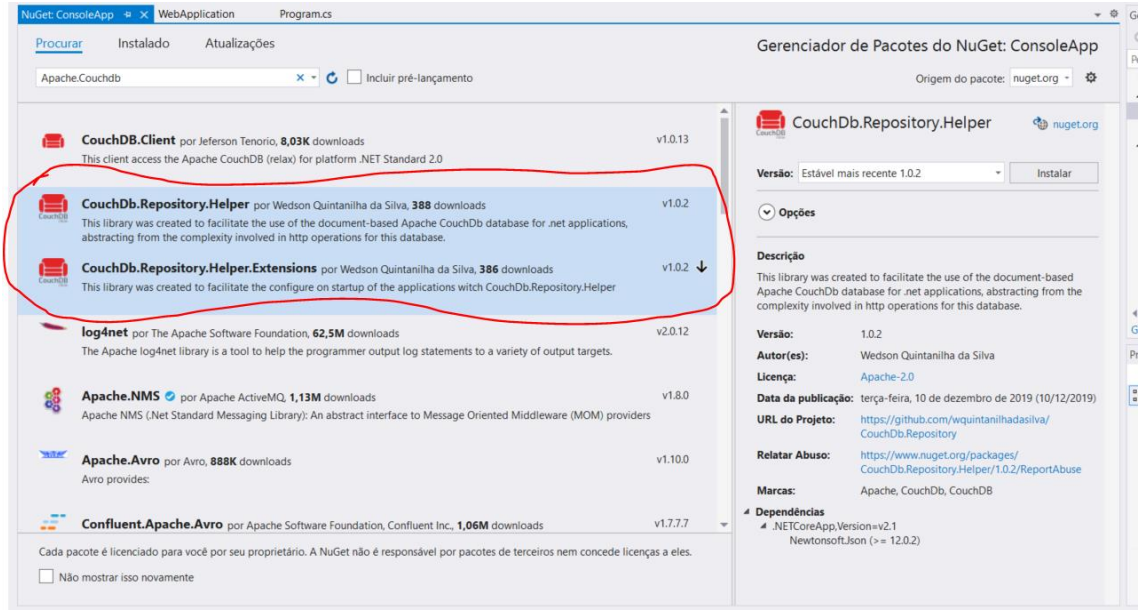
Open the sample solution shown in the image below and follow the explanations below.



Add nuget packages <u>bellow:</u>



Install packages:



Add config sections on appsettings.json:

```
12      {
13        "Name": "dev",
14        "ServerUrl": "http://localhost:5984",
15        "DatabaseName": "dev-users",
16        "Credential": {
17          "UserName": "jan",
18          "Password": "apple"
19        },
20        "Clusters": [
21          "http://20.0.0.116:5984"
22        ]
23      },
```

“CouchDbConnections” – Config section name. Will be referenced in startup code. Pode ser qualquer nome.

This section must contain one, only one, element called “Contexts”: []. This will be an array of configurations from one or more Apache CouchdDb databases that the application will interact with.

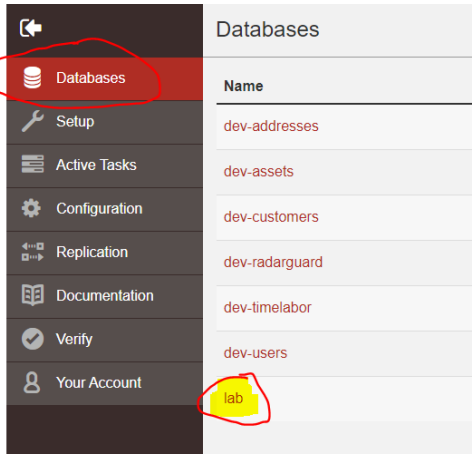
Each context must be defined according to the following structure:

```
10    "CouchDbConnections": {
11      "Contexts": [
12        {
13          "Name": "users-db",
14          "ServerUrl": "http://localhost:5984",
15          "DatabaseName": "lab",
16          "Credential": {
17            "UserName": "admin",
18            "Password": "admin"
19          }
20        },
21        {
```

“Name”: Name of the context that will be used by the application to access the database

“ServerUrl”: Server address, it can be a ***dns*** or ***ip*** address with its respective port

“DatabaseName”: Database name used by the context:



“Credential”: Opcional. Adicione esta configuração ao arquivo caso o seu banco de dados tenha as configurações de segurança ativadas, ou seja, caso tenha usuário e senha definido para o banco de dados.

Optional. Add this setting to the file if your database has security settings enabled, that is, if you have a username and password set for the database

“Clusters”: Se tiver uma configuração de cluster do seu Apache Couchdb, use esta configuração para informar ao framework que há clusters que podem ser acionados caso o servidor principal deixe de responder. As configurações dos clusters devem respeitar o que está definido na documentação do próprio Apache CouchDb. Informe o ip ou o endereço dns de um ou mais servidores clusters, separados por vírgula. O acesso ao banco de dados será usando as mesmas definições de usuário, senha e nome do banco de dados definido para o cluster principal.

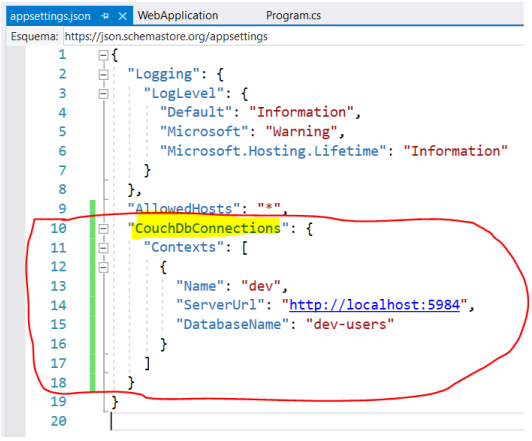
If you have a cluster configuration for your Apache Couchdb, use this configuration to inform the framework that there are clusters that can be triggered if the main server stops responding. The configurations of the clusters must respect what is defined in the Apache CouchDb documentation itself. Enter the ip or dns address of one or more cluster servers, separated by commas. Access to the database will be using the same user name, password and database name defined for the main cluster.

Exemplo (Sample):

```
"Clusters": [
  "http://100.1.1.1:5461",
  "http://localhost:8081"
]
```

Uma configuração simples sem cluster e sem usuário e senha pode ser observada no exemplo abaixo:

A simple configuration without cluster and without user and password can be seen in the example below:



Configure the framework indicating the configuration file, the section within it and the main file that will contain the "find" commands with the syntax mango querie.

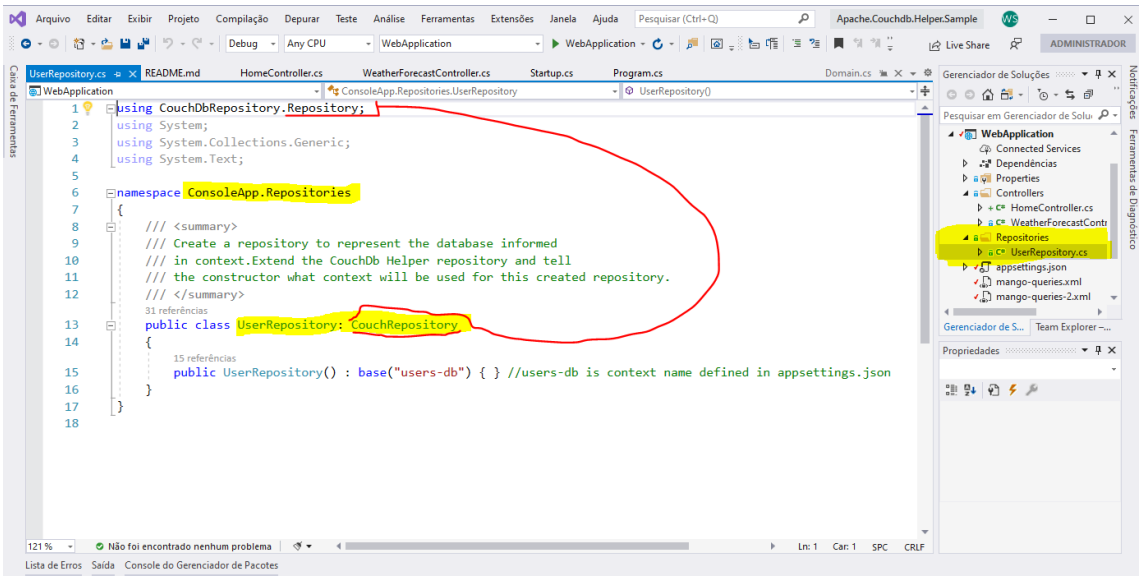
ConsoleApplication (startup program – Program.cs class):

```
using System;
using System.Collections.Generic;
using System.Linq;
using ClassLibrary;
using ConsoleApp.Repositories;
using CouchDb.Repository.Helper.Extensions;

namespace ConsoleApp
{
    0 referências
    class Program
    {
        0 referências
        static void Main(string[] args)
        {
            /**
             * Indicates the configuration file containing the couchDb
             * access data [appsettings.json], the name of the section
             * within this file with these data [CouchDbConnections] and
             * also the file with the commands mango queries find and
             * view that will be used by the program [mango -queries.xml].
             */
            CouchDbRepositoryExtensions.ConfigureCouchdDbHelper("appsettings.json", "CouchDbConnections", "mango-queries.xml");

            Console.WriteLine("CouchDb Helper Hello World use Sample!");
```

WebApplication (Startup.cs class):

```

using Microsoft.AspNetCore.Builder;
using Microsoft.AspNetCore.Hosting;

using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.DependencyInjection;
using Microsoft.Extensions.Hosting;

using CouchDb.Repository.Helper.Extensions;


namespace WebApplication
{
    2 referências
    public class Startup
    {
        0 referências
        public Startup(IConfiguration configuration)
        {
            Configuration = configuration;

            /**
             * Indicates the configuration file containing the couchDb
             * access data [appsettings.json], the name of the section
             * within this file with these data [CouchDbConnections] and
             * also the file with the commands mango queries find and
             * view that will be used by the program [mango -queries.xml].
             */
            configuration.ConfigureCouchdDbHelper("CouchDbConnections", "mango-queries.xml");
        }
```

Add a class to represent the database in the application. In this case, I'm calling it a repository, you are free to call the name you want:

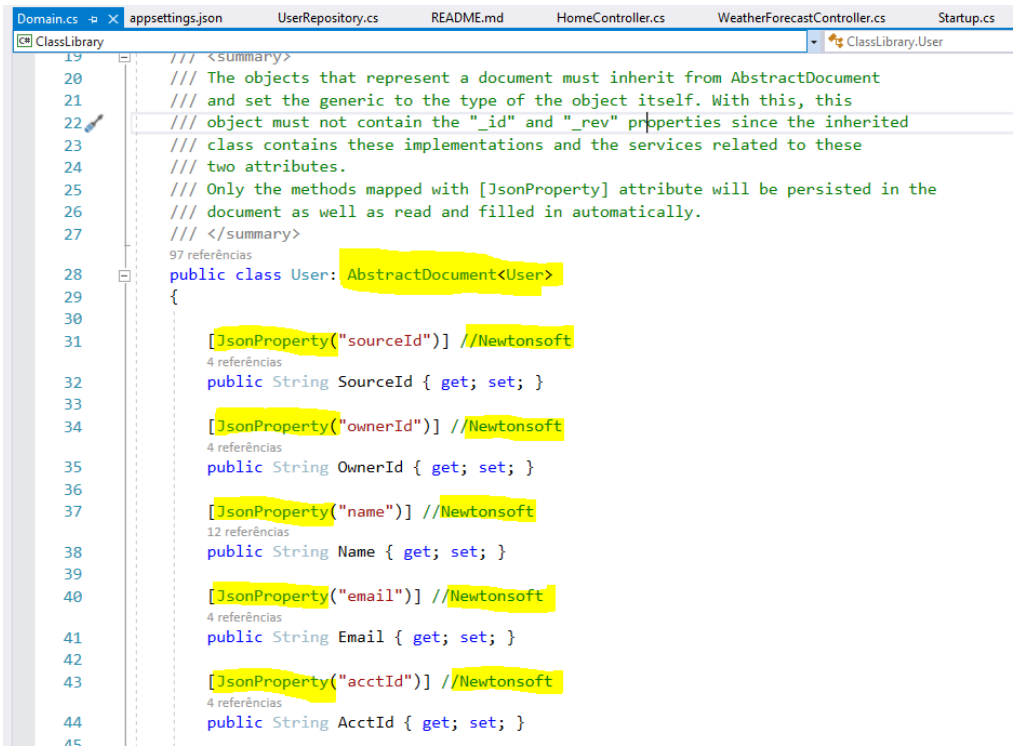


This class needs to extend the CouchDbRepository class. In the constructor, the name of the context where the database will be used must be informed, defined in the file appsettings.json.

```
},
"AllowedHosts": "*",
"CouchDbConnections": {
  "Contexts": [
    {
      "Name": "users-db",
      "ServerUrl": "http://localhost:5984",
      "DatabaseName": "lab",
      "Credential": {
        "UserName": "admin",
        "Password": "admin"
      }
    },
    {
      "Name": "home",
      "ServerUrl": "http://localhost:5984",
      "DatabaseName": "teste",
      "Credential": {
        "UserName": "jan",
        "Password": "apple"
      },
      "Clusters": [
        "http://100.1.1.1:5461",
        "http://localhost:8081"
      ]
    },
    {
      "Name": "trace",
      "ServerUrl": "http://localhost:5984",
      "DatabaseName": "trace",
      "Clusters": [
        "http://100.1.1.1:5461",
        "http://localhost:8081"
      ]
    }
  ]
}
```

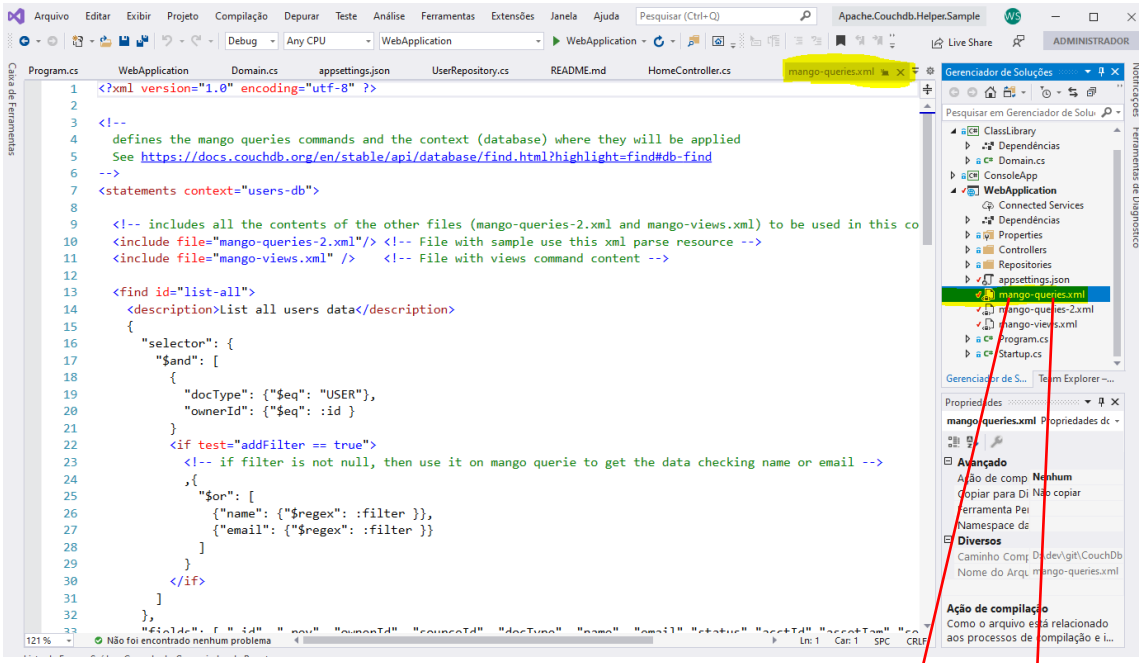
Create domain classes that will represent the documents in the database. This class must extend the "AbstractDocument" class.

The attributes that will be serialized in the database document must be noted with "JsonProperty". FOR THE sake of INTEGRITY AND RISK, I emphasize that ALL ATTRIBUTES IN THE DATABASE MUST HAVE A PROPERTY IN THE OBJECT, otherwise an exception will be thrown.



```
/// <summary>
/// The objects that represent a document must inherit from AbstractDocument
/// and set the generic to the type of the object itself. With this, this
/// object must not contain the "_id" and "_rev" properties since the inherited
/// class contains these implementations and the services related to these
/// two attributes.
/// Only the methods mapped with [JsonProperty] attribute will be persisted in the
/// document as well as read and filled in automatically.
/// </summary>
97 referências
public class User: AbstractDocument<User>
{

    [JsonProperty("sourceId")] //Newtonsoft
    4 referências
    public String SourceId { get; set; }

    [JsonProperty("ownerId")] //Newtonsoft
    4 referências
    public String OwnerId { get; set; }

    [JsonProperty("name")] //Newtonsoft
    12 referências
    public String Name { get; set; }

    [JsonProperty("email")] //Newtonsoft
    4 referências
    public String Email { get; set; }

    [JsonProperty("acctId")] //Newtonsoft
    4 referências
    public String AcctId { get; set; }
```

Create the file that will contain the find commands (mango queries) or their template.



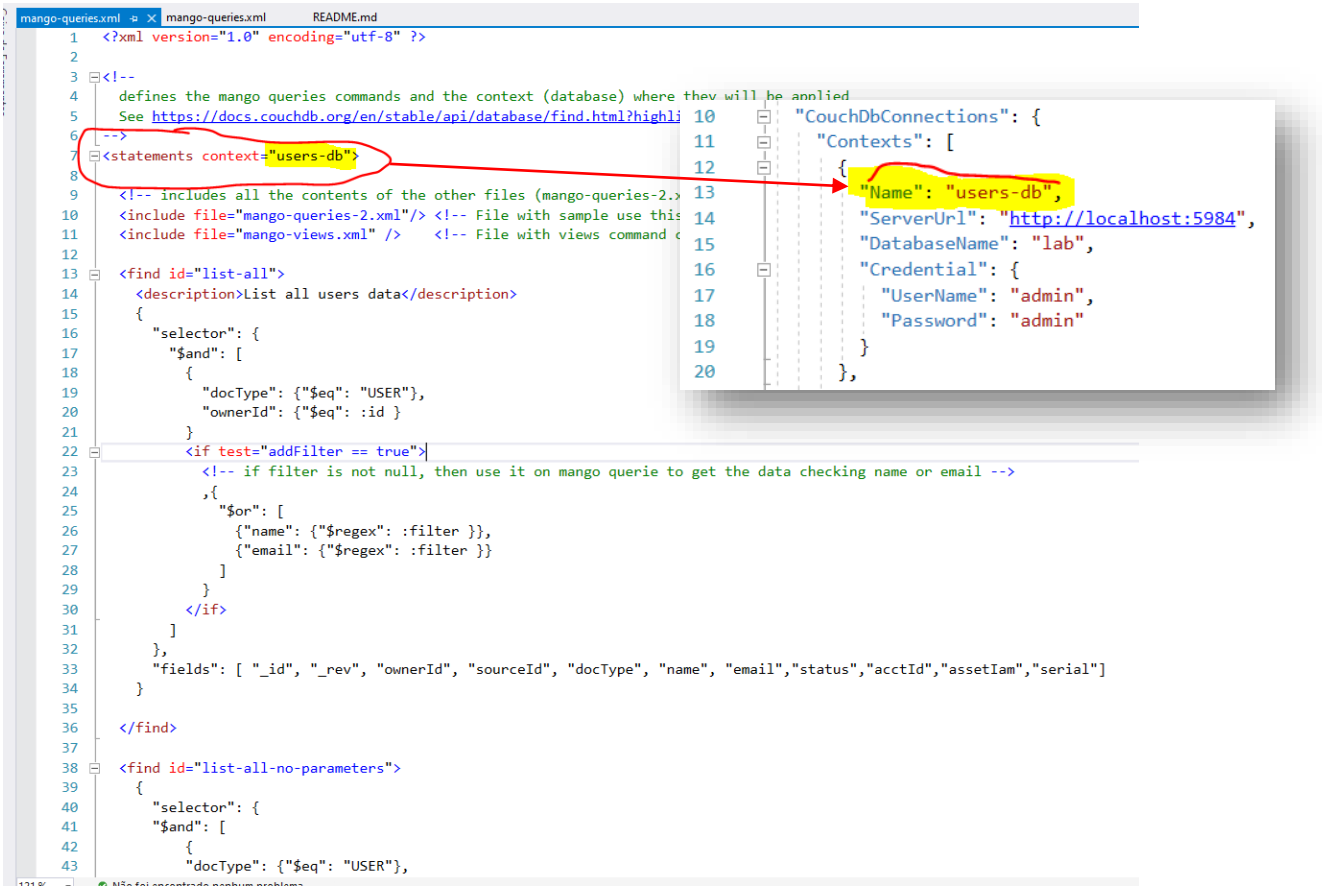
```
<?xml version="1.0" encoding="utf-8" ?>

<!--
  defines the mango queries commands and the context (database) where they will be applied
  See https://docs.couchdb.org/en/stable/api/database/find.html?highlight=find#db-find
-->
<statements context="users-db">

  <!-- includes all the contents of the other files (mango-queries-2.xml and mango-views.xml) to be used in this co
  <include file="mango-queries-2.xml"/> <!-- File with sample use this xml parse resource -->
  <include file="mango-views.xml" />    <!-- File with views command content -->

  <find id="list-all">
    <description>List all users data</description>
    {
      "selector": {
        "$and": [
          {
            "docType": {"$eq": "USER"},
            "ownerId": {"$eq": :id }
          }
          <if test="addFilter == true">
            <!-- if filter is not null, then use it on mango querie to get the data checking name or email -->
            ,{
              "$or": [
                {"name": {"$regex": :filter }},
                {"email": {"$regex": :filter }}
              ]
            }
          </if>
        ]
      },
```

The name of this file must be the same as indicated when initializing the framework configuration there in the initial method. Examples:

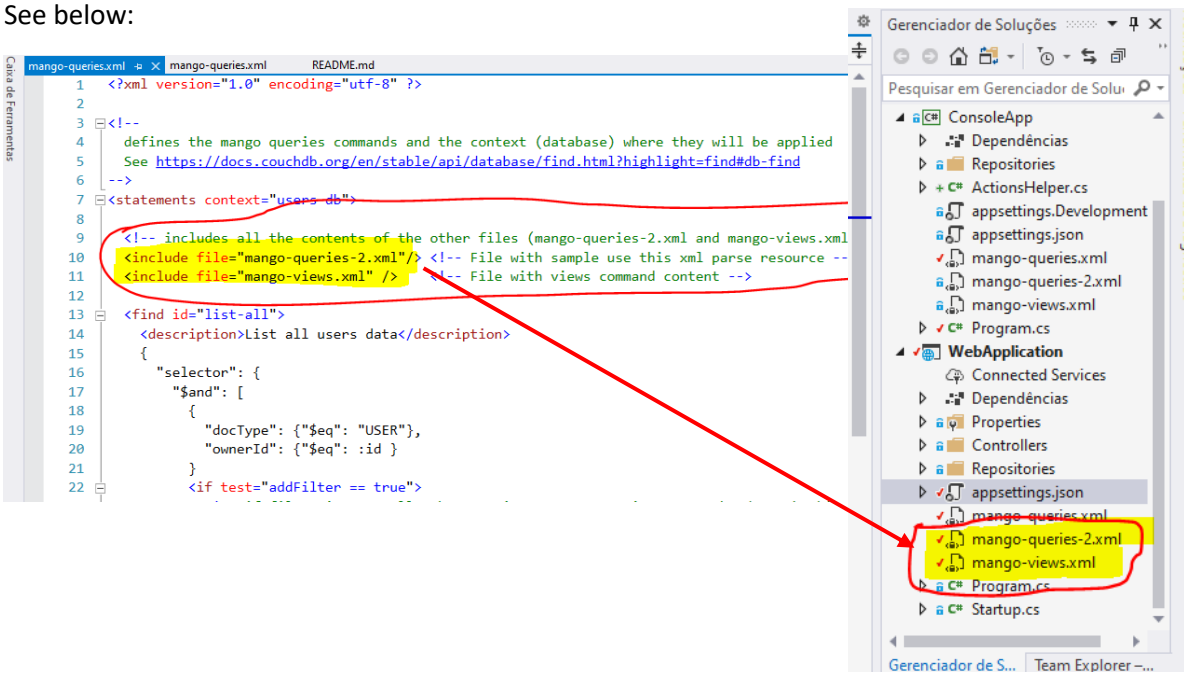
```
namespace WebApplication
{
    2 referências
    public class Startup
    {
        0 referências
        public Startup(IConfiguration configuration)
        {
            Configuration = configuration;

            /**
             * Indicates the configuration file containing the couchDb
             * access data [appsettings.json], the name of the section
             * within this file with these data [CouchDbConnections] and
             * also the file with the commands mango queries find and
             * view that will be used by the program [mango -queries.xml].
             */
            configuration.ConfigureCouchdDbHelper("CouchDbConnections", "mango-queries.xml");
        }
```

```
namespace ConsoleApp
{
    0 referências
    class Program
    {
        0 referências
        static void Main(string[] args)
        {
            /**
             * Indicates the configuration file containing the couchDb
             * access data [appsettings.json], the name of the section
             * within this file with these data [CouchDbConnections] and
             * also the file with the commands mango queries find and
             * view that will be used by the program [mango -queries.xml].
             */
            CouchDbRepositoryExtensions.ConfigureCouchdDbHelper("appsettings.json", "CouchDbConnections", "mango-queries.xml");

            Console.WriteLine("CouchDb Helper Hello World use Sample!");
```

Define the resources available for the application, indicating the context to which it should be applied. Each file only allows a single "*statements*" block. Use any of the contexts mapped in the *appsettings.json* configuration file:



Organize your find commands into separate files. To do this, you can include these additional files in the main file (main file is the file that was mapped when the application was started). See below:

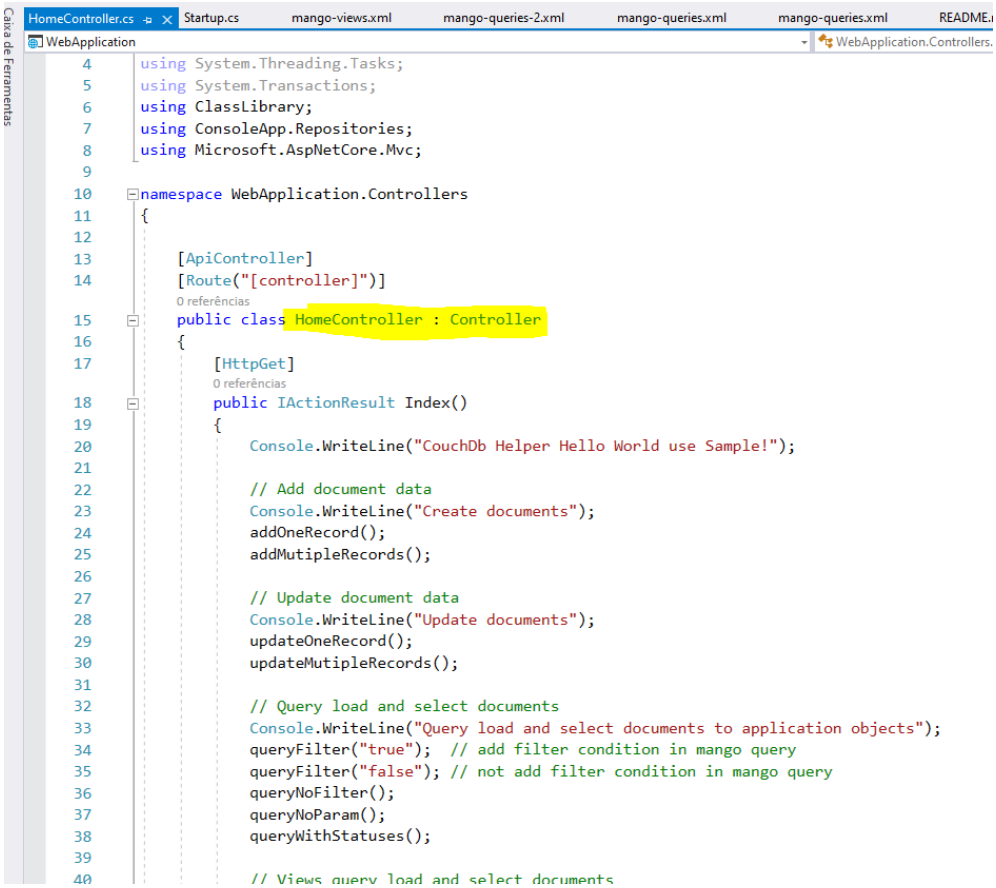


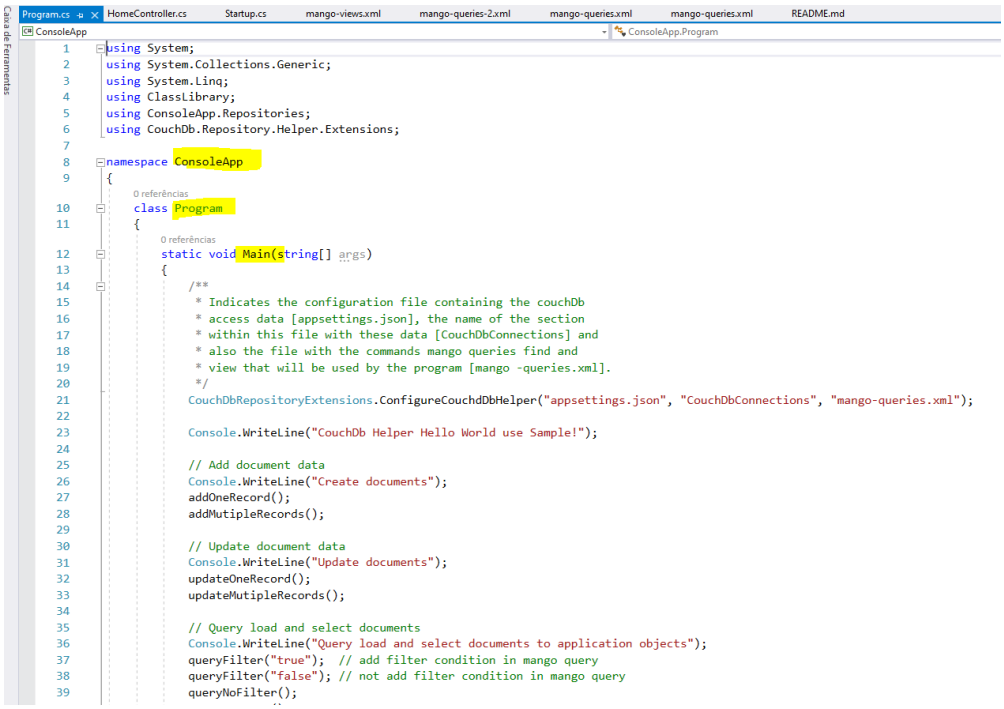
In this file, use the resources available in the couchdb documentation to create your queries: https://docs.couchdb.org/en/stable/api/database/find.html

In the sample solution ...

The HomeController class of the WebApplication project contains examples of use for CRUD operations in an API.

The Program class of the ConsoleApplication project contains examples of use for CRUD operations in a console application.





Manager documents:

:: **Insert** ONE document – Return ID and REVISION data

```
265         /// <summary>
266         /// Add ONE record document in database
267         /// </summary>
            1 referência
268         static void addOneRecord()
269         {
270             Console.WriteLine("addOneRecord");
271
272             User user = createUser("email@email.com");
273
274             using (UserRepository db = new UserRepository())
275             {
276                 var result = db.Insert<User>(user); // add document and return instance changed with operation revision id
277                 Console.WriteLine(result.Revision);
278                 Console.WriteLine(result.Id);
279             }
280
281             Console.WriteLine("====================");
282         }
```

:: **Insert** MUTIPLE documents – Returns the unit of work with the individual results

```
284         /// <summary>
285         /// Add mutiple documents in database
286         /// </summary>
            1 referência
287         static void addMutipleRecords()
288         {
289             Console.WriteLine("addMutipleRecords");
290
291             var users = new List<User>();
292             for(int i = 0; i < 10; i++)
293             {
294                 users.Add(createUser($"loop.user.{i}"));
295             }
296
297             using (UserRepository db = new UserRepository())
298             {
299                 var unitofwork = db.Insert<User>(users);
300
301                 // unitofwork contains the return of the operation of each record added
302                 Console.WriteLine($"Contain error: {unitofwork.HasError()}"); ; // status that indicates if there was an error
303
304                 Console.WriteLine("Listing errors:");
305                 // Access records that have errors to be processed
306                 Array.ForEach(unitofwork.Errors.ToArray(), Console.WriteLine);
307
308                 Console.WriteLine("Listing success:");
309                 // Access records that have been successfully processed
310                 Array.ForEach(unitofwork.Success.ToArray(), Console.WriteLine);
311
312                 Console.WriteLine("Sent items:");
313                 // Access the original items sent for operation in the database
314                 Array.ForEach(unitofwork.Items.ToArray(), Console.WriteLine);
315
316
317             }
318
319             Console.WriteLine("====================");
320         }
```

:: **<u>Update</u>** ONE document – Return document with changed REVISION data

Current id and revision is required to make changes to documents. Therefore, first retrieve the document and modify this recovered document.

```
322         static void updateOneRecord()
323         {
324             Console.WriteLine("updateOneRecord");
325
326             using (UserRepository db = new UserRepository())
327             {
328                 // Load document data by ID
329                 var user = db.Get<User>("email@email.com");
330                 user.Name = user.Name + "::CHANGED";
331
332                 var result = db.Update<User>(user); // update document and return instance changed with operation revision id
333                 Console.WriteLine(result.Revision);
334             }
335
336             Console.WriteLine("====================");
337         }
```

:: **Update** MUTIPLE documents – Returns the unit of work with the individual results

```
339         /// <summary>
340         /// Updates a group of documents at once in the database.Remember that CouchDb does not implement ACID properties.
341         /// </summary>
            1 referência
342         static void updateMutipleRecords()
343         {
344             Console.WriteLine("updateMutipleRecords");
345
346             using (UserRepository db = new UserRepository())
347             {
348
349                 // Loads all documents of a type
350                 var users = db.GetAllOf<User>();
351                 users.ForEach(u => u.Name = u.Name + "::CHANGED");
352
353                 // Send update command with data to will be update
354                 var unitofwork = db.Update<User>(users);
355
356                 // unitofwork contains the return of the operation of each record added
357                 Console.WriteLine($"Contain error: {unitofwork.HasError()}"); ; // status that indicates if there was an error
358
359                 Console.WriteLine("Listing errors:");
360                 // Access records that have errors to be processed
361                 Array.ForEach(unitofwork.Errors.ToArray(), Console.WriteLine);
362
363                 Console.WriteLine("Listing success:");
364                 // Access records that have been successfully processed
365                 Array.ForEach(unitofwork.Success.ToArray(), Console.WriteLine);
366
367                 Console.WriteLine("Sent items:");
368                 // Access the original items sent for operation in the database
369                 Array.ForEach(unitofwork.Items.ToArray(), Console.WriteLine);
370
371
372             }
373
374             Console.WriteLine("====================");
375         }
```

The code below retrieves all documents of a type.

```
// Loads all documents of a type
var users = db.GetAllOf<User>();
users.ForEach(u => u.Name = u.Name + "::CHANGED");
```

This is just an example, in your case, you will recover only the documents you want to delete. If you already have the documents updated, you do not need this step, just submit them, but be careful, you need to ensure that the revision is the most recent!

:: **Delete** ONE document – Return document with changed REVISION data

Current id and revision is required to delete documents. Therefore, first retrieve the document by key and modify this recovered document.

```
377         static void deleteOneRecord()
378         {
379             Console.WriteLine("deleteOneRecord");
380
381             using (UserRepository db = new UserRepository())
382             {
383                 // Load document data by ID
384                 var user = db.Get<User>("email@email.com");
385
386                 var result = db.Delete<User>(user); // delete document from database. Return true case sucess or false case not deleted
387                 Console.WriteLine($"Sucesso: {result}");
388             }
389
390             Console.WriteLine("====================");
391         }
```

:: **Delete** MUTIPLE documents – Returns the unit of work with the individual results

```
393         static void deleteMutipleRecords()
394         {
395             Console.WriteLine("deleteMutipleRecords");
396 
397             using (UserRepository db = new UserRepository())
398             {
399 
400                 // Loads all documents of a type
401                 var users = db.GetAllOf<User>();
402 
403                 // Send update command with data to will be deleted
404                 var unitofwork = db.Delete<User>(users);
405 
406                 // unitofwork contains the return of the operation of each record added
407                 Console.WriteLine($"Contain error: {unitofwork.HasError()}"); ; // status that indicates if there was an error
408 
409                 Console.WriteLine("Listing errors:");
410                 // Access records that have errors to be processed
411                 Array.ForEach(unitofwork.Errors.ToArray(), Console.WriteLine);
412 
413                 Console.WriteLine("Listing success:");
414                 // Access records that have been successfully processed
415                 Array.ForEach(unitofwork.Success.ToArray(), Console.WriteLine);
416 
417                 Console.WriteLine("Sent items:");
418                 // Access the original items sent for operation in the database
419                 Array.ForEach(unitofwork.Items.ToArray(), Console.WriteLine);
420 
421             }
422 
423             Console.WriteLine("====================");
424         }
```

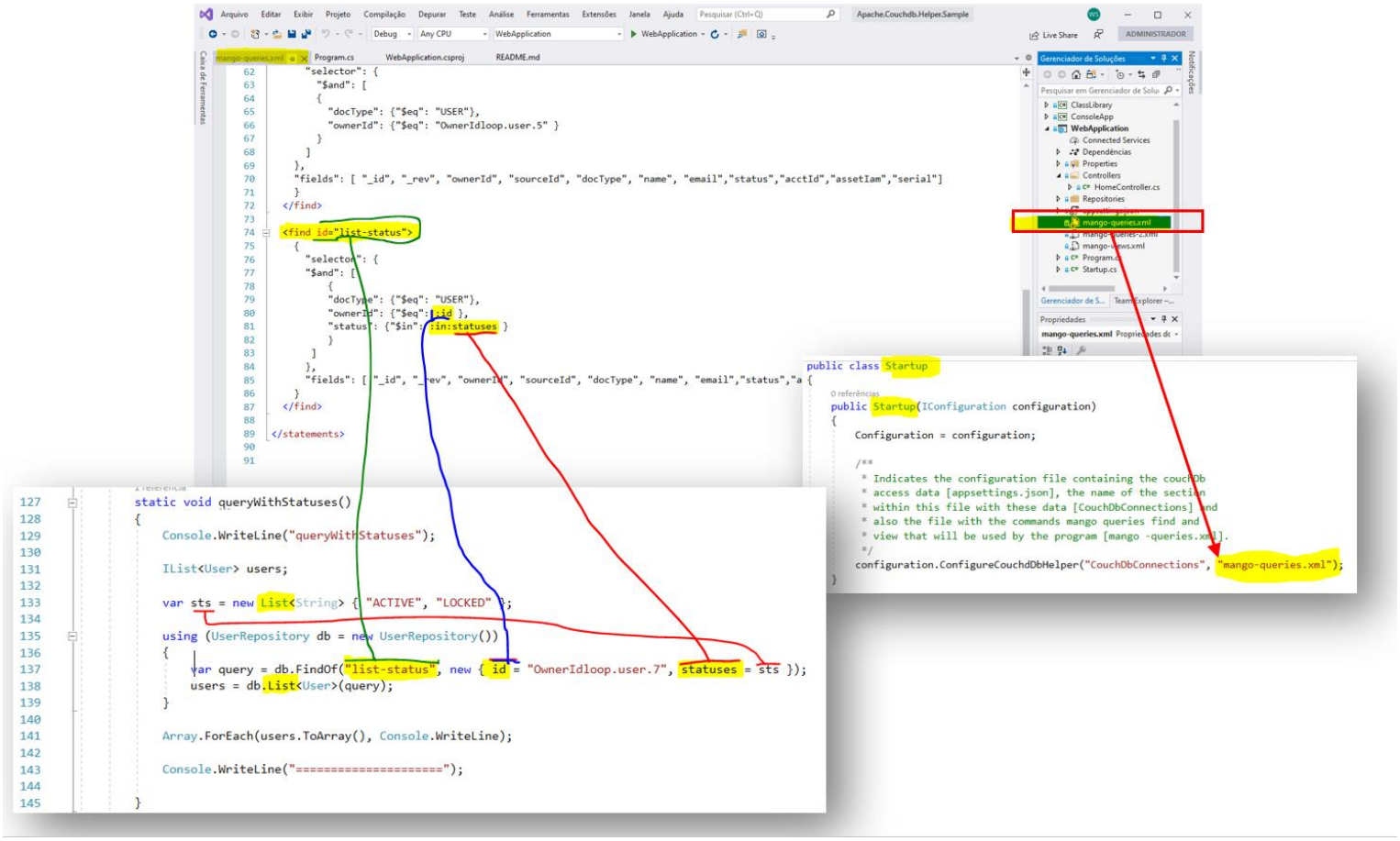
The code below retrieves all documents of a type.

```
// Loads all documents of a type
var users = db.GetAllOf<User>();
```

This is just an example, in your case, you will recover only the documents you want to delete. If you already have the documents updated, you do not need this step, just submit them, but be careful, you need to ensure that the revision is the most recent!

:: **SELECT** documents by querie filter

Define and save your queries in the xml file (you can use one or more of a file according to your project organization) using the "find" commands with Mango-Queries syntax from couchdb itself. The main file must be informed in the initial configuration of the project and it must include the others if they exist.



The above codes were extracted from the sample projects published in this github. Download the solution and analyze the codes in detail for further understanding.