

CRUDWebApp

Generated by Doxygen 1.13.2

1 CRUDWebApp	1
1.1 Overview	1
1.2 Caution	1
1.3 Used Libraries	1
1.3.1 Backend	1
1.3.2 Frontend	2
1.4 How to compile	2
2 Namespace Index	3
2.1 Namespace List	3
3 Hierarchical Index	5
3.1 Class Hierarchy	5
4 Class Index	7
4.1 Class List	7
5 Namespace Documentation	11
5.1 CRUDService Namespace Reference	11
5.2 CRUDService.Contracts Namespace Reference	11
5.3 CRUDService.Controllers Namespace Reference	11
5.4 CRUDService.Data Namespace Reference	11
5.5 CRUDService.DTOs Namespace Reference	12
5.6 CRUDService.Helpers Namespace Reference	12
5.7 CRUDService.Migrations Namespace Reference	12
5.8 CRUDService.Models Namespace Reference	12
5.9 CRUDService.Repository Namespace Reference	13
5.10 CRUDService.Service Namespace Reference	13
5.11 CRUDService.Validators Namespace Reference	13
5.12 FrontEnd Namespace Reference	13
5.13 FrontEnd.Models Namespace Reference	13
5.14 FrontEnd.Pages Namespace Reference	14
5.15 FrontEnd.Services Namespace Reference	14
5.16 FrontEnd.Validators Namespace Reference	14
6 Class Documentation	15
6.1 CRUDService.Data.AppDbContext Class Reference	15
6.1.1 Detailed Description	15
6.1.2 Member Function Documentation	15
6.1.2.1 OnModelCreating()	15
6.2 CRUDService.Migrations.AppDbContextModelSnapshot Class Reference	16
6.3 CRUDService.Controllers.AuthController Class Reference	16
6.3.1 Detailed Description	17
6.3.2 Constructor & Destructor Documentation	17

6.3.2.1 AuthController()	17
6.3.3 Member Function Documentation	17
6.3.3.1 Authorize()	17
6.4 FrontEnd.Services.AuthService Class Reference	18
6.4.1 Detailed Description	18
6.4.2 Member Function Documentation	18
6.4.2.1 InitializeAsync()	18
6.4.2.2 Logout()	19
6.4.2.3 SetToken()	19
6.5 CRUDService.DTOs.BaseContactDTO Class Reference	19
6.5.1 Detailed Description	20
6.6 CRUDService.Models.Category Class Reference	20
6.6.1 Detailed Description	20
6.7 FrontEnd.Models.Category Class Reference	20
6.7.1 Detailed Description	20
6.8 CRUDService.Contracts.CategoryConfiguration Class Reference	21
6.8.1 Detailed Description	21
6.8.2 Member Function Documentation	21
6.8.2.1 Configure()	21
6.9 CRUDService.Models.Contact Class Reference	21
6.9.1 Detailed Description	22
6.10 FrontEnd.Models.Contact Class Reference	22
6.10.1 Detailed Description	22
6.11 FrontEnd.Pages.ContactAddView Class Reference	23
6.11.1 Detailed Description	24
6.11.2 Member Function Documentation	24
6.11.2.1 LoadContent()	24
6.11.2.2 OnInitializedAsync()	24
6.11.2.3 OnParametersSetAsync()	24
6.11.2.4 SaveContact()	24
6.11.2.5 ValidateEmail()	25
6.12 CRUDService.Contracts.ContactConfiguration Class Reference	25
6.12.1 Detailed Description	25
6.12.2 Member Function Documentation	25
6.12.2.1 Configure()	25
6.13 CRUDService.Controllers.ContactController Class Reference	26
6.13.1 Detailed Description	27
6.13.2 Constructor & Destructor Documentation	27
6.13.2.1 ContactController()	27
6.13.3 Member Function Documentation	27
6.13.3.1 CheckIfEmailTaken()	27
6.13.3.2 CreateContact()	27

6.13.3.3 DeleteContact()	28
6.13.3.4 GetCategories()	29
6.13.3.5 GetContact()	29
6.13.3.6 GetContacts()	29
6.13.3.7 GetSubAllCategories()	30
6.13.3.8 GetSubCategories()	30
6.13.3.9 UpdateContact()	30
6.14 FrontEnd.Pages.ContactDetails Class Reference	31
6.14.1 Member Function Documentation	31
6.14.1.1 DeleteContact()	31
6.14.1.2 LoadContactList()	32
6.14.1.3 OnParametersSetAsync()	32
6.14.1.4 RedirectToEdit()	32
6.15 FrontEnd.Pages.ContactEditView Class Reference	32
6.15.1 Member Function Documentation	33
6.15.1.1 LoadContent()	33
6.15.1.2 OnInitializedAsync()	34
6.15.1.3 OnParametersSetAsync()	34
6.15.1.4 RedirectToDetails()	34
6.15.1.5 SaveContact()	34
6.15.1.6 ValidateEmail()	34
6.16 FrontEnd.Pages.ContactList Class Reference	35
6.16.1 Member Function Documentation	35
6.16.1.1 DecrementSkip()	35
6.16.1.2 DeleteContact()	35
6.16.1.3 IncrementSkip()	36
6.16.1.4 LoadContactList()	36
6.16.1.5 OnInitializedAsync()	36
6.16.1.6 RedirectToDetails()	36
6.16.1.7 RedirectToEdit()	37
6.17 CRUDService.Repository.ContactRepository Class Reference	37
6.17.1 Detailed Description	38
6.17.2 Constructor & Destructor Documentation	38
6.17.2.1 ContactRepository()	38
6.17.3 Member Function Documentation	38
6.17.3.1 AddContact()	38
6.17.3.2 CheckIfEmailTaken()	39
6.17.3.3 CheckIfIdExists()	39
6.17.3.4 DeleteContact()	39
6.17.3.5 FindAllCategories()	40
6.17.3.6 FindAllContacts()	40
6.17.3.7 FindAllSubCategories()	40

6.17.3.8 FindAllSubCategoriesById()	40
6.17.3.9 FindCategoryNameById()	41
6.17.3.10 FindContactById()	41
6.17.3.11 FindUserEmailById()	41
6.17.3.12 UpdateContact()	42
6.18 CRUDService.Service.ContactService Class Reference	42
6.18.1 Detailed Description	43
6.18.2 Constructor & Destructor Documentation	43
6.18.2.1 ContactService()	43
6.18.3 Member Function Documentation	44
6.18.3.1 AddContact()	44
6.18.3.2 CheckIfEmailTaken()	44
6.18.3.3 CheckIfIdExists()	44
6.18.3.4 CommonContactValidation()	45
6.18.3.5 DeleteContact()	45
6.18.3.6 FindAllCategories()	46
6.18.3.7 FindAllContacts()	46
6.18.3.8 FindAllSubCategories()	46
6.18.3.9 FindAllSubCategoriesById()	46
6.18.3.10 FindCategoryNameById()	47
6.18.3.11 FindContactById()	47
6.18.3.12 FindUserEmailById()	47
6.18.3.13 UpdateContact()	48
6.19 CRUDService.DTOs.CreateContactRequest Class Reference	48
6.19.1 Detailed Description	49
6.20 FrontEnd.Models.CreateContactRequest Class Reference	49
6.20.1 Detailed Description	50
6.21 FrontEnd.Models.DetailedContact Class Reference	50
6.21.1 Detailed Description	51
6.22 CRUDService.DTOs.DetailedContactDTO Class Reference	51
6.22.1 Detailed Description	51
6.23 CRUDService.DTOs.GetContactResponse Class Reference	52
6.23.1 Detailed Description	52
6.24 FrontEnd.Models.GetContactResponse Class Reference	53
6.24.1 Detailed Description	53
6.25 CRUDService.Repository.IContactRepository Interface Reference	53
6.25.1 Detailed Description	54
6.25.2 Member Function Documentation	54
6.25.2.1 AddContact()	54
6.25.2.2 CheckIfEmailTaken()	54
6.25.2.3 CheckIfIdExists()	55
6.25.2.4 DeleteContact()	55

6.25.2.5 FindAllCategories()	56
6.25.2.6 FindAllContacts()	56
6.25.2.7 FindAllSubCategories()	56
6.25.2.8 FindAllSubCategoriesById()	56
6.25.2.9 FindCategoryNameById()	57
6.25.2.10 FindContactById()	57
6.25.2.11 FindUserEmailById()	57
6.25.2.12 UpdateContact()	58
6.26 CRUDService.Service.IContactService Interface Reference	58
6.26.1 Detailed Description	59
6.26.2 Member Function Documentation	59
6.26.2.1 AddContact()	59
6.26.2.2 CheckIfEmailTaken()	60
6.26.2.3 CheckIfIdExists()	60
6.26.2.4 CommonContactValidation()	60
6.26.2.5 DeleteContact()	60
6.26.2.6 FindAllCategories()	61
6.26.2.7 FindAllContacts()	61
6.26.2.8 FindAllSubCategories()	61
6.26.2.9 FindAllSubCategoriesById()	61
6.26.2.10 FindCategoryNameById()	62
6.26.2.11 FindContactById()	62
6.26.2.12 FindUserEmailById()	62
6.26.2.13 UpdateContact()	63
6.27 CRUDService.Migrations.InitialCreate Class Reference	63
6.27.1 Detailed Description	64
6.28 CRUDService.Repository.IUserRepository Interface Reference	64
6.28.1 Detailed Description	64
6.28.2 Member Function Documentation	64
6.28.2.1 FindUserPasswordHash()	64
6.29 CRUDService.Service.IUserService Interface Reference	65
6.29.1 Detailed Description	65
6.29.2 Member Function Documentation	65
6.29.2.1 Authenticate()	65
6.29.2.2 FindUserPasswordHash()	65
6.29.2.3 GenerateJwtToken()	66
6.29.2.4 VerifyPassword()	66
6.30 FrontEnd.Pages.Login Class Reference	67
6.30.1 Member Function Documentation	67
6.30.1.1 Login()	67
6.30.1.2 OnInitializedAsync()	67
6.31 CRUDService.Validators.PasswordValidator Class Reference	68

6.31.1 Detailed Description	68
6.31.2 Member Function Documentation	68
6.31.2.1 IsValid()	68
6.32 FrontEnd.Validators.PasswordValidator Class Reference	69
6.32.1 Detailed Description	69
6.32.2 Member Function Documentation	69
6.32.2.1 IsValid()	69
6.33 CRUDService.Models.SubCategory Class Reference	70
6.33.1 Detailed Description	70
6.34 FrontEnd.Models.SubCategory Class Reference	70
6.34.1 Detailed Description	70
6.35 CRUDService.Contracts.SubCategoryConfiguration Class Reference	71
6.35.1 Detailed Description	71
6.35.2 Member Function Documentation	71
6.35.2.1 Configure()	71
6.36 CRUDService.DTOs.UpdateContactRequest Class Reference	71
6.36.1 Detailed Description	72
6.37 FrontEnd.Models.UpdateContactRequest Class Reference	72
6.37.1 Detailed Description	73
6.38 CRUDService.Models.User Class Reference	73
6.38.1 Detailed Description	73
6.39 FrontEnd.Models.User Class Reference	73
6.39.1 Detailed Description	74
6.40 CRUDService.Repository.UserRepository Class Reference	74
6.40.1 Detailed Description	74
6.40.2 Constructor & Destructor Documentation	74
6.40.2.1 UserRepository()	74
6.40.3 Member Function Documentation	75
6.40.3.1 FindUserPasswordHash()	75
6.41 CRUDService.Service.UserService Class Reference	75
6.41.1 Constructor & Destructor Documentation	76
6.41.1.1 UserService()	76
6.41.2 Member Function Documentation	76
6.41.2.1 Authenticate()	76
6.41.2.2 FindUserPasswordHash()	76
6.41.2.3 GenerateJwtToken()	77
6.41.2.4 VerifyPassword()	77
Index	79

Chapter 1

CRUDWebApp

1.1 Overview

The **CRUDWebApp** is composed of 2 projects:

- [CRUDService](#): based on ASP.NET Core which serves as backend application
- [FrontEnd](#): based on Blazor WebAssembly (WASM) which serves as SPA frontend application.

To view full documentation open `./html/index.html` file in a browser.

1.2 Caution

For the whole app to work properly as is, you need **Postgres Server** running on **localhost** on port **5432**.

If your configuration **differs**, edit connection specifics in **appsettings.json** in **root directory** of [CRUDService](#) to match yours.

1.3 Used Libraries

1.3.1 Backend

- Microsoft.EntityFrameworkCore
- Microsoft.EntityFrameworkCore.Metadata.Builders
- Microsoft.AspNetCore.Mvc
- Microsoft.AspNetCore.Authorization
- Microsoft.EntityFrameworkCore
- System.ComponentModel.DataAnnotations
- System.Security.Cryptography

- Microsoft.EntityFrameworkCore.Migrations
- Npgsql.EntityFrameworkCore.PostgreSQL.Metadata
- Microsoft.EntityFrameworkCore.Storage.ValueConversion
- Microsoft.EntityFrameworkCore.Infrastructure
- Microsoft.IdentityModel.Tokens
- System.IdentityModel.Tokens.Jwt
- System.Security.Claims

1.3.2 Frontend

- System.ComponentModel.DataAnnotations
- System.Text.Json
- System.Net.Http.Headers
- System.Net.Http.Json
- Microsoft.AspNetCore.Components
- System.IdentityModel.Tokens.Jwt
- System.Security.Claims
- Blazored.LocalStorage
- Microsoft.AspNetCore.Components.Forms
- Microsoft.AspNetCore.Components.Routing
- Microsoft.AspNetCore.Components.Web
- Microsoft.AspNetCore.Components.Web.Virtualization
- Microsoft.AspNetCore.Components.WebAssembly.Http
- Microsoft.JSInterop
- Microsoft.AspNetCore.Components.WebAssembly.Hosting

1.4 How to compile

- Download code from github: <https://github.com/sigmor10/CRUDWebApp>
- Open Console / PowerShell in [CRUDService](#) project's root directory
- Run the "dotnet ef database update" command to run migrations, or you can load sql dump
- Open the main folder and run .sln file in Visual Studio 2022
- Run both projects [CRUDService](#) and [FrontEnd](#) in any order
 - Note 1: If [FrontEnd](#) is run before [CRUDService](#), requests to backend will fail.
 - Note 2: On first run of [CRUDService](#) you will be prompted with whether to trust ASP.NET self signed Certificate. Agree to it so that the app will run with REST API communication over https

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

CRUDService	11
CRUDService.Contracts	11
CRUDService.Controllers	11
CRUDService.Data	11
CRUDService.DTOs	12
CRUDService.Helpers	12
CRUDService.Migrations	12
CRUDService.Models	12
CRUDService.Repository	13
CRUDService.Service	13
CRUDService.Validators	13
FrontEnd	13
FrontEnd.Models	13
FrontEnd.Pages	14
FrontEnd.Services	14
FrontEnd.Validators	14

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

FrontEnd.Services.AuthService	18
CRUDService.DTOs.BaseContactDTO	19
CRUDService.DTOs.DetailedContactDTO	51
CRUDService.DTOs.CreateContactRequest	48
CRUDService.DTOs.GetContactResponse	52
CRUDService.DTOs.UpdateContactRequest	71
CRUDService.Models.Category	20
FrontEnd.Models.Category	20
ComponentBase	
FrontEnd.Pages.ContactAddView	23
FrontEnd.Pages.ContactDetails	31
FrontEnd.Pages.ContactEditView	32
FrontEnd.Pages.ContactList	35
FrontEnd.Pages.Login	67
CRUDService.Models.Contact	21
FrontEnd.Models.Contact	22
FrontEnd.Models.DetailedContact	50
FrontEnd.Models.CreateContactRequest	49
FrontEnd.Models.GetContactResponse	53
FrontEnd.Models.UpdateContactRequest	72
ControllerBase	
CRUDService.Controllers.AuthController	16
CRUDService.Controllers.ContactController	26
DbContext	
CRUDService.Data.AppDbContext	15
CRUDService.Repository.IContactRepository	53
CRUDService.Repository.ContactRepository	37
CRUDService.Service.IContactService	58
CRUDService.Service.ContactService	42
IEntityTypeConfiguration	
CRUDService.Contracts.CategoryConfiguration	21
CRUDService.Contracts.ContactConfiguration	25
CRUDService.Contracts.SubCategoryConfiguration	71
CRUDService.Repository.IUserRepository	64

CRUDService.Repository.UserRepository	74
CRUDService.Service.IUserService	65
CRUDService.Service.UserService	75
Migration	
CRUDService.Migrations.InitialCreate	63
ModelSnapshot	
CRUDService.Migrations.AppDbContextModelSnapshot	16
CRUDService.Models.SubCategory	70
FrontEnd.Models.SubCategory	70
CRUDService.Models.User	73
FrontEnd.Models.User	73
ValidationAttribute	
CRUDService.Validators.PasswordValidator	68
FrontEnd.Validators.PasswordValidator	69

Chapter 4

Class Index

4.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

CRUDService.Data.AppDbContext	
Class used to manage the connection to the database	15
CRUDService.Migrations.AppDbContextModelSnapshot	16
CRUDService.Controllers.AuthController	
Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer	16
FrontEnd.Services.AuthService	
Authentication and jwt token handling class	18
CRUDService.DTOs.BaseContactDTO	
Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests	19
CRUDService.Models.Category	
Entity class for Dictionary table Categories	20
FrontEnd.Models.Category	
Entity class for Dictionary entity Category For database table constraint details see Contracts/↔ CategoryConfiguration.cs file Annotated for early validation and early rejection of invalid requests	20
CRUDService.Contracts.CategoryConfiguration	
Class needed for configuring specific rules of its table in the db	21
CRUDService.Models.Contact	
Entity class for CRUD entity Contact For database table constraint details see Contracts/↔ ContactConfiguration.cs file	21
FrontEnd.Models.Contact	
Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests	22
FrontEnd.Pages.ContactAddView	
Code behind of ContactAddView	23
CRUDService.Contracts.ContactConfiguration	
Class needed for configuring specific rules of Contacts table in the database	25
CRUDService.Controllers.ContactController	
Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer	26
FrontEnd.Pages.ContactDetails	31
FrontEnd.Pages.ContactEditView	32
FrontEnd.Pages.ContactList	35
CRUDService.Repository.ContactRepository	
Implements repository logic related to access to the database	37

CRUDService.Service.ContactService	
Implements bussiness logic and mediates between contrler and repository layers	42
CRUDService.DTOs.CreateContactRequest	
DTO class used for updates and creation requests, it posses every field informative field of contact. Annotated for early valdiation and early rejection of invalid requests	48
FrontEnd.Models.CreateContactRequest	
DTO class used for updates and creation requests, it posses every field informative field of contact Annotated for early valdiation and early rejection of invalid requests	49
FrontEnd.Models.DetailedContact	
More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early valdiation and early rejection of invalid requests	50
CRUDService.DTOs.DetailedContactDTO	
More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early valdiation and early rejection of invalid requests	51
CRUDService.DTOs.GetContactResponse	
Detailed DTO class used to transfer data needed for detailed view of contact info. Caution↔ : Password field is purposefully omitted due to security reasons. Annotated for early valdiation and early rejection of invalid requests	52
FrontEnd.Models.GetContactResponse	
Detailed DTO class used to transfer data needed for detailed view of contact info. Caution↔ : Password field is purposefully omitted due to security reasons. Annotated for early valdiation and early rejection of invalid requests	53
CRUDService.Repository.IContactRepository	
Interface possesses collection of methods for handling data stored in the database	53
CRUDService.Service.IContactService	
Defines bussiness logic operations for Contact management	58
CRUDService.Migrations.InitialCreate	63
CRUDService.Repository.IUserRepository	
Interface possesses collection of methods for handling data stored in the database	64
CRUDService.Service.IUserService	
Defines bussiness logic in regards authentication of users	65
FrontEnd.Pages.Login	67
CRUDService.Validators.PasswordValidator	
Custom password validator for use in automatic password validation through annotations . . .	68
FrontEnd.Validators.PasswordValidator	
Custom password validator for use in automatic password validation through annotations . . .	69
CRUDService.Models.SubCategory	
Entity class for Dictionary entity SubCategory it is used only for dictionary entries For SubCategory that are limited to bussiness Category For database table constraint details see Contracts/SubCategoryConfiguration.cs file	70
FrontEnd.Models.SubCategory	
Entity class for Dictionary entity SubCategory it is used only for dictionary entries For SubCategory that are limited to bussiness Category For database table constraint details see Contracts/SubCategoryConfiguration.cs file Annotated for early valdiation and early rejection of invalid requests	70
CRUDService.Contracts.SubCategoryConfiguration	
Class needed for configuring specific rules of its table in the db	71
CRUDService.DTOs.UpdateContactRequest	
DTO class for use when recieving Contact update requests. Annotated for early valdiation and early rejection of invalid requests	71
FrontEnd.Models.UpdateContactRequest	
DTO class for use when recieving Contact update requests Annotated for early valdiation and early rejection of invalid requests	72
CRUDService.Models.User	
Class representing a user	73
FrontEnd.Models.User	
Class representing a user. Annotated for early valdiation and early rejection of invalid requests	73

CRUDService.Repository.UserRepository	
Implementation of IUserRepository interface	74
CRUDService.Service.UserService	75

Chapter 5

Namespace Documentation

5.1 CRUDService Namespace Reference

5.2 CRUDService.Contracts Namespace Reference

Classes

- class [CategoryConfiguration](#)
Class needed for configuring specific rules of its table in the db.
- class [ContactConfiguration](#)
Class needed for configuring specific rules of Contacts table in the database.
- class [SubCategoryConfiguration](#)
Class needed for configuring specific rules of its table in the db.

5.3 CRUDService.Controllers Namespace Reference

Classes

- class [AuthController](#)
Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer.
- class [ContactController](#)
Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer.

5.4 CRUDService.Data Namespace Reference

Classes

- class [AppDbContext](#)
Class used to manage the connection to the database.
- class **Initializer**
Populates empty database tables.

5.5 CRUDService.DTOs Namespace Reference

Classes

- class [BaseContactDTO](#)
Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests.
- class [CreateContactRequest](#)
DTO class used for updates and creation requests, it posses every field informative field of contact. Annotated for early validation and early rejection of invalid requests.
- class [DetailedContactDTO](#)
More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early validation and early rejection of invalid requests.
- class [GetContactResponse](#)
Detailed DTO class used to transfer data needed for detailed view of contact info. Caution: Password field is purposefully omitted due to security reasons. Annotated for early validation and early rejection of invalid requests.
- class [UpdateContactRequest](#)
DTO class for use when receiving Contact update requests. Annotated for early validation and early rejection of invalid requests.

5.6 CRUDService.Helpers Namespace Reference

Classes

- class **ContactMapper**
Class contains methods used to transform [Contact](#) entity to and from DTO objects.
- class **HelperMethods**
Collection of helper methods.

5.7 CRUDService.Migrations Namespace Reference

Classes

- class [AppDbContextModelSnapshot](#)
- class [InitialCreate](#)

5.8 CRUDService.Models Namespace Reference

Classes

- class [Category](#)
Entity class for Dictionary table Categories.
- class [Contact](#)
Entity class for CRUD entity [Contact](#) For database table constraint details see Contracts/ContactConfiguration.cs file.
- class [SubCategory](#)
Entity class for Dictionary entity [SubCategory](#) it is used only for dictionary entries For [SubCategory](#) that are limited to business [Category](#) For database table constraint details see Contracts/SubCategoryConfiguration.cs file.
- class [User](#)
Class representing a user.

5.9 CRUDService.Repository Namespace Reference

Classes

- class [ContactRepository](#)
Implements repository logic related to access to the database.
- interface [IContactRepository](#)
Interface possesses collection of methods for handling data stored in the database.
- interface [IUserRepository](#)
Interface possesses collection of methods for handling data stored in the database.
- class [UserRepository](#)
Implementation of [IUserRepository](#) interface.

5.10 CRUDService.Service Namespace Reference

Classes

- class [ContactService](#)
Implements bussiness logic and mediates between contrler and repository layers.
- interface [IContactService](#)
Defines bussiness logic operations for [Contact](#) management.
- interface [IUserService](#)
Defines bussiness logic in regards authentication of users.
- class [UserService](#)

5.11 CRUDService.Validators Namespace Reference

Classes

- class [PasswordValidator](#)
Custom password validator for use in automatic password validation through annotations.

5.12 FrontEnd Namespace Reference

5.13 FrontEnd.Models Namespace Reference

Classes

- class [Category](#)
Entity class for Dictionary entity [Category](#) For database table constraint details see Contracts/Category↔ Configuration.cs file Annotated for early valdiation and early rejection of invalid requests.
- class [Contact](#)
Base DTO holds every field that is used in every other contact DTO class Annotated for early valdiation and early rejection of invalid requests.
- class [CreateContactRequest](#)

dTO class used for updates and creation requests, it posses every field informative field of contact Annotated for early validation and early rejection of invalid requests.

- class [DetailedContact](#)

More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early validation and early rejection of invalid requests.

- class [GetContactResponse](#)

Detailed DTO class used to transfer data needed for detailed view of contact info. Caution: Password field is purposefully omitted due to security reasons. Annotated for early validation and early rejection of invalid requests.

- class [SubCategory](#)

Entity class for Dictionary entity [SubCategory](#) it is used only for dictionary entries For [SubCategory](#) that are limited to bussiness [Category](#) For database table constraint details see Contracts/SubCategoryConfiguration.cs file Annotated for early validation and early rejection of invalid requests.

- class [UpdateContactRequest](#)

DTO class for use when recieving [Contact](#) update requests Annotated for early validation and early rejection of invalid requests.

- class [User](#)

Class representing a user. Annotated for early validation and early rejection of invalid requests.

5.14 FrontEnd.Pages Namespace Reference

Classes

- class [ContactAddView](#)

Code behind of [ContactAddView](#).

- class [ContactDetails](#)
- class [ContactEditView](#)
- class [ContactList](#)
- class [Login](#)

5.15 FrontEnd.Services Namespace Reference

Classes

- class [AuthService](#)

Authentication and jwt token handling class.

5.16 FrontEnd.Validators Namespace Reference

Classes

- class [PasswordValidator](#)

Custom password validator for use in automatic password validation through annotations.

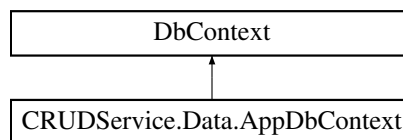
Chapter 6

Class Documentation

6.1 CRUDService.Data.AppDbContext Class Reference

Class used to manage the connection to the database.

Inheritance diagram for CRUDService.Data.AppDbContext:



Public Member Functions

- **AppDbContext** (DbContextOptions< [AppDbContext](#) > options)

Protected Member Functions

- override void [OnModelCreating](#) (ModelBuilder modelBuilder)
Applies custom rules to properties of columns that are based on class fields.

Properties

- DbSet< [Contact](#) > **Contacts** [get, set]
- DbSet< [Category](#) > **Categories** [get, set]
- DbSet< [SubCategory](#) > **SubCategories** [get, set]

6.1.1 Detailed Description

Class used to manage the connection to the database.

6.1.2 Member Function Documentation

6.1.2.1 OnModelCreating()

```
override void CRUDService.Data.AppDbContext.OnModelCreating (
    modelBuilder modelBuilder) [inline], [protected]
```

Applies custom rules to properties of columns that are based on class fields.

Parameters

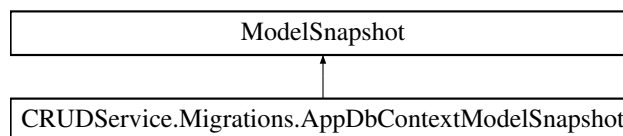
<i>modelBuilder</i>	
---------------------	--

The documentation for this class was generated from the following file:

- CRUDService/Data/AppDbContext.cs

6.2 CRUDService.Migrations.AppDbContextModelSnapshot Class Reference

Inheritance diagram for CRUDService.Migrations.AppDbContextModelSnapshot:



Protected Member Functions

- override void **BuildModel** (ModelBuilder modelBuilder)

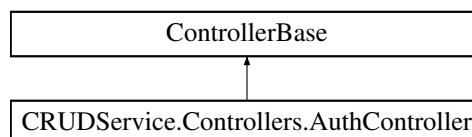
The documentation for this class was generated from the following file:

- CRUDService/Migrations/AppDbContextModelSnapshot.cs

6.3 CRUDService.Controllers.AuthController Class Reference

Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer.

Inheritance diagram for CRUDService.Controllers.AuthController:



Public Member Functions

- [AuthController](#) (ILogger< [ContactController](#) > logger, [IUserService](#) service)
Constructor with dependency injections.
- async Task< IActionResult > [Authorize](#) ([FromBody] [User](#) user)
Returns paginated list of Contacts.

Private Attributes

- readonly [IUserService](#) `_userService`
Property used to access [User Service](#).
- readonly ILogger< [ContactController](#) > `_logger`

6.3.1 Detailed Description

Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer.

6.3.2 Constructor & Destructor Documentation

6.3.2.1 AuthController()

```
CRUDService.Controllers.AuthController.AuthController (
    ILogger< ContactController > logger,
    IUserService service) [inline]
```

Constructor with dependency injections.

Parameters

<i>logger</i>	
<i>service</i>	

6.3.3 Member Function Documentation

6.3.3.1 Authorize()

```
async Task< IActionResult > CRUDService.Controllers.AuthController.Authorize (
    [FromBody] User user) [inline]
```

Returns paginated list of Contacts.

Parameters

<i>user</i>	User object passed for use of in service layer
-------------	--

Returns

Jwt Token or 401 Unauthorized message

The documentation for this class was generated from the following file:

- `CRUDService/Controllers/AuthController.cs`

6.4 FrontEnd.Services.AuthService Class Reference

Authentication and jwt token handling class.

Public Member Functions

- **AuthService** (ILocalStorageService localStorage)
- async Task [InitializeAsync](#) ()
Initializes token and authorization mechanics.
- async Task [SetToken](#) (string token)
Puts token in local storage.
- async Task [Logout](#) ()
Logs user out and deletes token.

Properties

- bool **IsLoggedIn** [get, private set]
- string? **UserEmail** [get, private set]

Events

- Action? **OnChange**

Private Member Functions

- void **NotifyStateChanged** ()

Private Attributes

- readonly ILocalStorageService **_localStorage**

6.4.1 Detailed Description

Authentication and jwt token handling class.

6.4.2 Member Function Documentation

6.4.2.1 InitializeAsync()

```
async Task FrontEnd.Services.AuthService.InitializeAsync () [inline]
```

Initializes token and authorization mechanics.

Returns

6.4.2.2 Logout()

```
async Task FrontEnd.Services.AuthService.Logout () [inline]
```

Logs user out and deletes token.

Returns

6.4.2.3 SetToken()

```
async Task FrontEnd.Services.AuthService.SetToken (
    string token) [inline]
```

Puts token in local storage.

Parameters

<i>token</i>	Jwt token
--------------	-----------

Returns

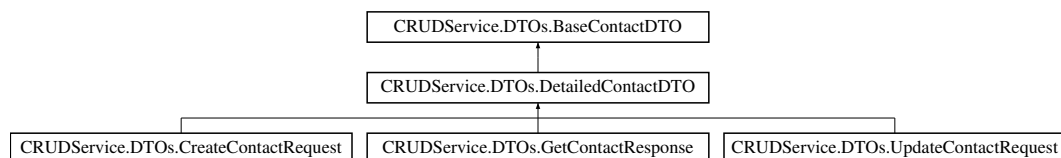
The documentation for this class was generated from the following file:

- FrontEnd/Services/AuthService.cs

6.5 CRUDService.DTOs.BaseContactDTO Class Reference

Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for CRUDService.DTOs.BaseContactDTO:



Properties

- Guid **Id** [get, set]
- required string **Name** [get, set]
- required string **Surname** [get, set]
- required string **Email** [get, set]

6.5.1 Detailed Description

Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests.

The documentation for this class was generated from the following file:

- CRUService/DTOs/BaseContactDTO.cs

6.6 CRUService.Models.Category Class Reference

Entity class for Dictionary table Categories.

Properties

- required int **Id** [get, set]
- required string **Name** [get, set]

6.6.1 Detailed Description

Entity class for Dictionary table Categories.

The documentation for this class was generated from the following file:

- CRUService/Models/Category.cs

6.7 FrontEnd.Models.Category Class Reference

Entity class for Dictionary entity [Category](#) For database table constraint details see Contracts/Category↔ Configuration.cs file Annotated for early validation and early rejection of invalid requests.

Properties

- int **Id** [get, set]
- required string **Name** [get, set]

6.7.1 Detailed Description

Entity class for Dictionary entity [Category](#) For database table constraint details see Contracts/Category↔ Configuration.cs file Annotated for early validation and early rejection of invalid requests.

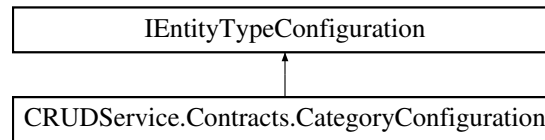
The documentation for this class was generated from the following file:

- FrontEnd/Models/Category.cs

6.8 CRUDService.Contracts.CategoryConfiguration Class Reference

Class needed for configuring specific rules of its table in the db.

Inheritance diagram for CRUDService.Contracts.CategoryConfiguration:



Public Member Functions

- void [Configure](#) (EntityTypeBuilder< [Category](#) > builder)
Sets configuration of the Categories table.

6.8.1 Detailed Description

Class needed for configuring specific rules of its table in the db.

6.8.2 Member Function Documentation

6.8.2.1 Configure()

```
void CRUDService.Contracts.CategoryConfiguration.Configure (
    EntityTypeBuilder< Category > builder) [inline]
```

Sets configuration of the Categories table.

Parameters

<i>builder</i>	
----------------	--

The documentation for this class was generated from the following file:

- `CRUDService/Contracts/CategoryConfiguration.cs`

6.9 CRUDService.Models.Contact Class Reference

Entity class for CRUD entity [Contact](#) For database table constraint details see `Contracts/ContactConfiguration.cs` file.

Properties

- Guid **Id** = Guid.NewGuid() [get, set]
- required string **Name** [get, set]
- required string **Surname** [get, set]
- required string **Email** [get, set]
- string? **PasswordHash** [get, set]
- required int **CategoryId** [get, set]
- string? **SubCategory** [get, set]
- required string **Phone** [get, set]
- required DateOnly **BirthDate** [get, set]

6.9.1 Detailed Description

Entity class for CRUD entity [Contact](#) For database table constraint details see Contracts/ContactConfiguration.cs file.

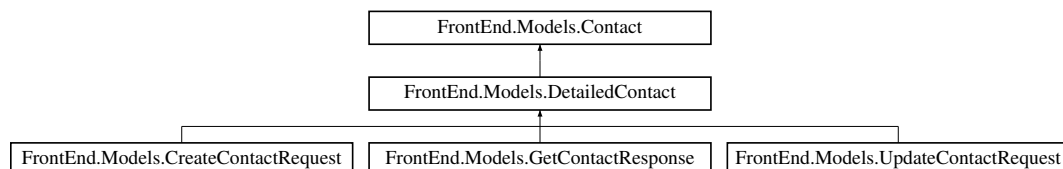
The documentation for this class was generated from the following file:

- CRUDService/Models/Contact.cs

6.10 FrontEnd.Models.Contact Class Reference

Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for FrontEnd.Models.Contact:



Properties

- Guid **Id** [get, set]
- string? **Name** [get, set]
- string? **Surname** [get, set]
- string? **Email** [get, set]

6.10.1 Detailed Description

Base DTO holds every field that is used in every other contact DTO class Annotated for early validation and early rejection of invalid requests.

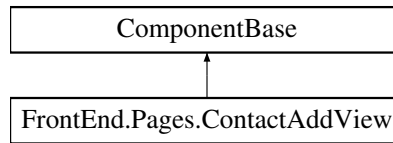
The documentation for this class was generated from the following file:

- FrontEnd/Models/Contact.cs

6.11 FrontEnd.Pages.ContactAddView Class Reference

Code behind of [ContactAddView](#).

Inheritance diagram for FrontEnd.Pages.ContactAddView:



Protected Member Functions

- override async Task [OnInitializedAsync](#) ()
Redirects unauthorized users to the login page.
- override async Task [OnParametersSetAsync](#) ()
Initializes contact list.

Properties

- string **selectedSubCategory** [get, set]
- int **selectedCategory** [get, set]

Private Member Functions

- void **SetToDefaultValues** ()
Sets Entity and form to default values.
- async Task [LoadContent](#) ()
Fetches paginated list from backend.
- void **FilterSubCategories** ()
Filters SubCategories to select only one viable for given category.
- async Task< bool > [ValidateEmail](#) ()
Checks if given email is already in use by other user.
- async Task [SaveContact](#) ()
Saves edited contact.
- void **RedirectToList** ()
Redirects to contact list view.

Private Attributes

- [CreateContactRequest](#)? **contact** = new()
- List< [Category](#) >? **categories**
- List< [SubCategory](#) >? **subCats**
- List< [SubCategory](#) > **filteredSubCats** = new()
- bool **emailExists** = false
- bool **IsCustomSubCategory** = false
- string **_selectedSubCategory**
- int **_selectedCategory**

6.11.1 Detailed Description

Code behind of [ContactAddView](#).

6.11.2 Member Function Documentation

6.11.2.1 LoadContent()

```
async Task FrontEnd.Pages.ContactAddView.LoadContent () [inline], [private]
```

Fetches paginated list from backend.

Returns

6.11.2.2 OnInitializedAsync()

```
override async Task FrontEnd.Pages.ContactAddView.OnInitializedAsync () [inline], [protected]
```

Redirects unauthorized users to the login page.

Returns

6.11.2.3 OnParametersSetAsync()

```
override async Task FrontEnd.Pages.ContactAddView.OnParametersSetAsync () [inline], [protected]
```

Initializes contact list.

Returns

6.11.2.4 SaveContact()

```
async Task FrontEnd.Pages.ContactAddView.SaveContact () [inline], [private]
```

Saves edited contact.

Returns

6.11.2.5 ValidateEmael()

```
async Task< bool > FrontEnd.Pages.ContactAddView.ValidateEmael () [inline], [private]
```

Checks if given email is already in use by other user.

Returns

bool saying whether email is valid and not taken

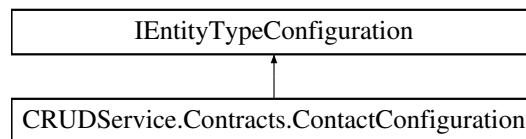
The documentation for this class was generated from the following file:

- FrontEnd/Pages/ContactAddView.razor.cs

6.12 CRUDService.Contracts.ContactConfiguration Class Reference

Class needed for configuring specific rules of Contacts table in the database.

Inheritance diagram for CRUDService.Contracts.ContactConfiguration:



Public Member Functions

- void [Configure](#) (EntityTypeBuilder< [Contact](#) > builder)
Sets configuration of the Contacts table.

6.12.1 Detailed Description

Class needed for configuring specific rules of Contacts table in the database.

6.12.2 Member Function Documentation

6.12.2.1 Configure()

```
void CRUDService.Contracts.ContactConfiguration.Configure (  
    EntityTypeBuilder< Contact > builder) [inline]
```

Sets configuration of the Contacts table.

Parameters

<i>builder</i>	
----------------	--

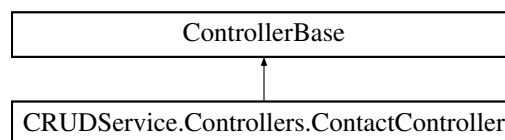
The documentation for this class was generated from the following file:

- CRUDService/Contracts/ContactConfiguration.cs

6.13 CRUDService.Controllers.ContactController Class Reference

Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer.

Inheritance diagram for CRUDService.Controllers.ContactController:



Public Member Functions

- [ContactController](#) (ILogger< [ContactController](#) > logger, [IContactService](#) service)
Constructor with dependency injections.
- async Task< IActionResult > [GetContacts](#) (int skip, int take)
Returns paginated list of Contacts.
- async Task< IActionResult > [GetContact](#) (Guid id)
Returns a detailed Contact with given id.
- async Task< IActionResult > [GetCategories](#) ()
Returns list of all categories.
- async Task< IActionResult > [GetSubCategories](#) (int id)
Returns list of anmes of all subcategories for given category id.
- async Task< IActionResult > [GetSubAllCategories](#) ()
Returns list of anmes of all subcategories.
- async Task< IActionResult > [CheckIfEmailTaken](#) ([FromQuery] string email)
Returns information if email is taken or not.
- async Task< IActionResult > [CreateContact](#) ([FromBody] [CreateContactRequest](#) request)
Creates new Contact instance.
- async Task< IActionResult > [UpdateContact](#) (Guid id, [FromBody] [UpdateContactRequest](#) request)
Updates existing Contact instance.
- async Task< IActionResult > [DeleteContact](#) (Guid id)
Deletes existing Contact.

Private Attributes

- readonly [IContactService](#) **_contactService**
Properly used to access Contact Service.
- readonly ILogger< [ContactController](#) > **_logger**

6.13.1 Detailed Description

Controller class which handles http(s) communication, through the use of REST API. It only handles requests/responses, actual operations are relayed to service layer.

6.13.2 Constructor & Destructor Documentation

6.13.2.1 ContactController()

```
CRUDService.Controllers.ContactController.ContactController (
    ILogger< ContactController > logger,
    IContactService service) [inline]
```

Constructor with dependency injections.

Parameters

<i>logger</i>	
<i>service</i>	

6.13.3 Member Function Documentation

6.13.3.1 CheckIfEmailTaken()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.CheckIfEmailTaken (
    [FromQuery] string email) [inline]
```

Returns information if email is taken or not.

Parameters

<i>email</i>	Email that is to be checked
--------------	-----------------------------

Returns

bool saying whether given email already exists in database or not

6.13.3.2 CreateContact()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.CreateContact (
    [FromBody] CreateContactRequest request) [inline]
```

Creates new Contact instance.

Parameters

<i>request</i>	CreateContactRequest object with data needed to create new Contact
----------------	--

Returns

201 code or 400, depending on whether entry was created or not

6.13.3.3 DeleteContact()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.DeleteContact (
    Guid id) [inline]
```

Deletes existing Contact.

Parameters

<i>id</i>	Contact's Guid
-----------	----------------

Returns

404 code if Contact with given id does not exist 200 code if Contact was successfully deleted

6.13.3.4 GetCategories()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.GetCategories () [inline]
```

Returns list of all categories.

Returns

List of all categories in the database

6.13.3.5 GetContact()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.GetContact (
    Guid id) [inline]
```

Returns a detailed Contact with given id.

Parameters

<i>id</i>	Guid of the requested contact
-----------	-------------------------------

Returns

404 or requested Contact transformed into [GetContactResponse](#) Object

6.13.3.6 GetContacts()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.GetContacts (
    int skip,
    int take) [inline]
```

Returns paginated list of Contacts.

Parameters

<i>skip</i>	Defines how many records should be skipped
<i>take</i>	Defines max length of returned list

Returns

Returns list Of [BaseContactDTO](#) objects, can be empty

6.13.3.7 GetSubAllCategories()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.GetSubAllCategories ()  
[inline]
```

Returns list of anmes of all subcategories.

Returns

list of all subcategoires in the database

6.13.3.8 GetSubCategories()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.GetSubCategories (  
    int id) [inline]
```

Returns list of anmes of all subcategories for given category id.

Parameters

<i>id</i>	Id of the category, requested subcategories belongg to.
-----------	---

Returns

List of all subcategory names that belong to Category with given id

6.13.3.9 UpdateContact()

```
async Task< IActionResult > CRUDService.Controllers.ContactController.UpdateContact (  
    Guid id,  
    [FromBody] UpdateContactRequest request) [inline]
```

Updates existing Contact instance.

Parameters

<i>id</i>	Contact's Guid
<i>request</i>	UpdateContactRequest object containing new/updated data for existing Contact

Returns

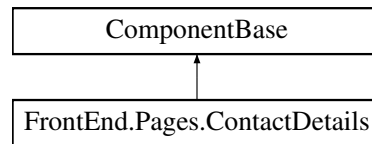
following http codes: 404 if no contact exists with given id, 204 if update was successful 400 if data in [UpdateContactRequest](#) was invalid

The documentation for this class was generated from the following file:

- CRUDService/Controllers/ContactController.cs

6.14 FrontEnd.Pages.ContactDetails Class Reference

Inheritance diagram for FrontEnd.Pages.ContactDetails:



Protected Member Functions

- override async Task [OnParametersSetAsync](#) ()
Initializes contact list.

Properties

- Guid **id** [get, set]

Private Member Functions

- async Task [LoadContactList](#) ()
Fetches paginated list from backend.
- async Task [DeleteContact](#) (Guid id)
Sends delete request.
- void [RedirectToEdit](#) (Guid id)
Redirects to [Contact](#)'s edit view.
- void [RedirectToList](#) ()
Redirects to contact list view.

Private Attributes

- [GetContactResponse?](#) **contact**

6.14.1 Member Function Documentation

6.14.1.1 DeleteContact()

```

async Task FrontEnd.Pages.ContactDetails.DeleteContact (
    Guid id) [inline], [private]
  
```

Sends delete request.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

6.14.1.2 LoadContactList()

```
async Task FrontEnd.Pages.ContactDetails.LoadContactList () [inline], [private]
```

Fetches paginated list from backend.

Returns

6.14.1.3 OnParametersSetAsync()

```
override async Task FrontEnd.Pages.ContactDetails.OnParametersSetAsync () [inline], [protected]
```

Initializes contact list.

Returns

6.14.1.4 RedirectToEdit()

```
void FrontEnd.Pages.ContactDetails.RedirectToEdit (  
    Guid id) [inline], [private]
```

Redirects to [Contact](#)'s edit view.

Parameters

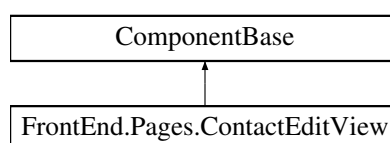
<i>id</i>	Contact 's Guid
-----------	---------------------------------

The documentation for this class was generated from the following file:

- FrontEnd/Pages/ContactDetails.razor.cs

6.15 FrontEnd.Pages.ContactEditView Class Reference

Inheritance diagram for FrontEnd.Pages.ContactEditView:



Protected Member Functions

- override async Task [OnInitializedAsync](#) ()
Redirects unauthorized users to the login page.
- override async Task [OnParametersSetAsync](#) ()
Initializes contact list.

Properties

- Guid **id** [get, set]
- string **selectedSubCategory** [get, set]
- int **selectedCategory** [get, set]

Private Member Functions

- void **SetToDefaultValues** ()
Sets Entity and form to default values.
- async Task [LoadContent](#) ()
Fetches paginated list from backend.
- void **FilterSubCategories** ()
Filters SubCategories to select only one viable for given category.
- async Task< bool > [ValidateEmail](#) ()
Checks if given email is already in use by other user.
- async Task [SaveContact](#) ()
Saves edited contact.
- void [RedirectToDetails](#) (Guid id)
Redirects to [Contact](#)'s edit view.

Private Attributes

- [GetContactResponse?](#) **ogContact**
- [UpdateContactRequest?](#) **contact**
- List< [Category](#) >? **categories**
- List< [SubCategory](#) >? **subCats**
- List< [SubCategory](#) > **filteredSubCats** = new()
- bool **emailExists** = false
- bool **IsCustomSubCategory** = false
- string **_selectedSubCategory**
- int **_selectedCategory**

6.15.1 Member Function Documentation

6.15.1.1 LoadContent()

```
async Task FrontEnd.Pages.ContactEditView.LoadContent () [inline], [private]
```

Fetches paginated list from backend.

Returns

6.15.1.2 OnInitializedAsync()

```
override async Task FrontEnd.Pages.ContactEditView.OnInitializedAsync () [inline], [protected]
```

Redirects unauthorized users to the login page.

Returns

6.15.1.3 OnParametersSetAsync()

```
override async Task FrontEnd.Pages.ContactEditView.OnParametersSetAsync () [inline], [protected]
```

Initializes contact list.

Returns

6.15.1.4 RedirectToDetails()

```
void FrontEnd.Pages.ContactEditView.RedirectToDetails (
    Guid id) [inline], [private]
```

Redirects to [Contact](#)'s edit view.

Parameters

<i>id</i>	Contact Guid
-----------	------------------------------

6.15.1.5 SaveContact()

```
async Task FrontEnd.Pages.ContactEditView.SaveContact () [inline], [private]
```

Saves edited contact.

Returns

6.15.1.6 ValidateEmail()

```
async Task< bool > FrontEnd.Pages.ContactEditView.ValidateEmail () [inline], [private]
```

Checks if given email is already in use by other user.

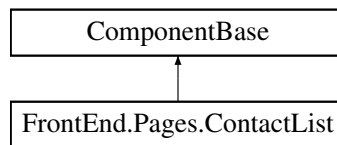
Returns

The documentation for this class was generated from the following file:

- FrontEnd/Pages/ContactEditView.razor.cs

6.16 FrontEnd.Pages.ContactList Class Reference

Inheritance diagram for FrontEnd.Pages.ContactList:



Protected Member Functions

- override async Task [OnInitializedAsync](#) ()
Initializes contact list.

Private Member Functions

- async Task [LoadContactList](#) ()
Fetches paginated list from backend.
- async Task [IncrementSkip](#) ()
Next list page.
- async Task [DecrementSkip](#) ()
Previous list page.
- async Task [DeleteContact](#) (Guid id)
Sends delete request.
- void [RedirectToEdit](#) (Guid id)
Redirects to [Contact](#)'s edit view.
- void [RedirectToDetails](#) (Guid id)
Redirects to [Contact](#)'s details view.
- void [RedirectToAdd](#) ()
Redirects to add contact view.

Private Attributes

- List< [Contact](#) >? **contacts**
- int **skip** = 0
- int **take** = 7

6.16.1 Member Function Documentation

6.16.1.1 DecrementSkip()

```
async Task FrontEnd.Pages.ContactList.DecrementSkip () [inline], [private]
```

Previous list page.

Returns

6.16.1.2 DeleteContact()

```
async Task FrontEnd.Pages.ContactList.DeleteContact (
    Guid id) [inline], [private]
```

Sends delete request.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

6.16.1.3 IncrementSkip()

```
async Task FrontEnd.Pages.ContactList.IncrementSkip () [inline], [private]
```

Next list page.

Returns

6.16.1.4 LoadContactList()

```
async Task FrontEnd.Pages.ContactList.LoadContactList () [inline], [private]
```

Fetches paginated list from backend.

Returns

6.16.1.5 OnInitializedAsync()

```
override async Task FrontEnd.Pages.ContactList.OnInitializedAsync () [inline], [protected]
```

Initializes contact list.

Returns

6.16.1.6 RedirectToDetails()

```
void FrontEnd.Pages.ContactList.RedirectToDetails (  
    Guid id) [inline], [private]
```

Redirects to [Contact](#)'s details view.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

6.16.1.7 RedirectToEdit()

```
void FrontEnd.Pages.ContactList.RedirectToEdit (
    Guid id) [inline], [private]
```

Redirects to [Contact](#)'s edit view.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

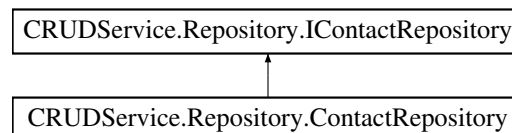
The documentation for this class was generated from the following file:

- FrontEnd/Pages/ContactList.razor.cs

6.17 CRUDService.Repository.ContactRepository Class Reference

Implements repository logic related to access to the database.

Inheritance diagram for CRUDService.Repository.ContactRepository:



Public Member Functions

- [ContactRepository](#) ([AppDbContext](#) context)
Constructor.
- async Task< bool > [CheckIfIdExists](#) (Guid id)
Checks if contact with given id exists.
- async Task< [Contact](#)? > [FindContactById](#) (Guid id)
Retrieves contact by its id.
- async Task< List< [Contact](#) > > [FindAllContacts](#) (int skip, int take)
Retrieves a paginated list of contacts.
- async Task< List< [Category](#) > > [FindAllCategories](#) ()
Retrieves all categories.
- async Task< string? > [FindCategoryNameById](#) (int id)
Retrieves a category name for given id.
- async Task< string? > [FindUserEmailById](#) (Guid id)
Retrieves user email by her/his id.

- `async Task< List< string > > FindAllSubCategoriesById (int id)`
Fetches all subcategories for given id.
- `async Task AddContact (Contact contact)`
Adds new contact.
- `async Task< bool > UpdateContact (Contact contact)`
Updates existing contact.
- `async Task< bool > DeleteContact (Guid id)`
Deletes existing contact.
- `Task< bool > CheckIfEmailTaken (string email)`
Retrieves contact by its Email.
- `async Task< List< SubCategory > > FindAllSubCategories ()`
Fetches all subcategories.

Private Attributes

- readonly `AppDbContext _context`

6.17.1 Detailed Description

Implements repository logic related to access to the database.

6.17.2 Constructor & Destructor Documentation

6.17.2.1 ContactRepository()

```
CRUDService.Repository.ContactRepository.ContactRepository (
    AppDbContext context) [inline]
```

Constructor.

Parameters

<code>context</code>	
----------------------	--

6.17.3 Member Function Documentation

6.17.3.1 AddContact()

```
async Task CRUDService.Repository.ContactRepository.AddContact (
    Contact contact) [inline]
```

Adds new contact.

Parameters

<code>contact</code>	<code>Contact</code> object
----------------------	-----------------------------

Returns

Implements `CRUDService.Repository.IContactRepository`.

6.17.3.2 CheckIfEmailTaken()

```
Task< bool > CRUDService.Repository.ContactRepository.CheckIfEmailTaken (
    string email) [inline]
```

Retrieves contact by its Email.

Parameters

<i>email</i>	
--------------	--

Returns

true if given email exists or false if not

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.3 CheckIfIdExists()

```
async Task< bool > CRUDService.Repository.ContactRepository.CheckIfIdExists (
    Guid id) [inline]
```

Checks if contact with given id exists.

Parameters

<i>id</i>	Contacts Guid
-----------	---------------

Returns

true if exists false if not

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.4 DeleteContact()

```
async Task< bool > CRUDService.Repository.ContactRepository.DeleteContact (
    Guid id) [inline]
```

Deletes existing contact.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

true if object was deleted successfully false if not

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.5 FindAllCategories()

```
async Task< List< Category > > CRUDService.Repository.ContactRepository.FindAllCategories ()  
[inline]
```

Retrieves all categories.

Returns

[Category](#) object

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.6 FindAllContacts()

```
async Task< List< Contact > > CRUDService.Repository.ContactRepository.FindAllContacts (  
    int skip,  
    int take) [inline]
```

Retrieves a paginated list of contacts.

Parameters

<i>skip</i>	Defines how many records should be skipped
<i>take</i>	Defines max length of returned list

Returns

Either [Contact](#) object or null

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.7 FindAllSubCategories()

```
async Task< List< SubCategory > > CRUDService.Repository.ContactRepository.FindAllSubCategories  
() [inline]
```

Fetches all subcategories.

Returns

List of all subcategories

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.8 FindAllSubCategoriesById()

```
async Task< List< string > > CRUDService.Repository.ContactRepository.FindAllSubCategories↵  
ById (  
    int id) [inline]
```

Fetches all subcategories for given id.

Parameters

<i>id</i>	Id of a Category
-----------	----------------------------------

Returns

List of names of all the subcategory names belonging to the given [Category](#)

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.9 FindCategoryNameById()

```
async Task< string?> CRUDService.Repository.ContactRepository.FindCategoryNameById (
    int id) [inline]
```

Retrieves a category name for given id.

Parameters

<i>id</i>	Id of a Category
-----------	----------------------------------

Returns

[Category](#)'s name

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.10 FindContactById()

```
async Task< Contact?> CRUDService.Repository.ContactRepository.FindContactById (
    Guid id) [inline]
```

Retrieves contact by its id.

Parameters

<i>id</i>	Contacts Guid
-----------	---------------

Returns

Either [Contact](#) object or null

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.11 FindUserEmailById()

```
async Task< string?> CRUDService.Repository.ContactRepository.FindUserEmailById (
    Guid id) [inline]
```

Retrieves user email by her/his id.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

[Contact](#)'s email

Implements [CRUDService.Repository.IContactRepository](#).

6.17.3.12 UpdateContact()

```
async Task< bool > CRUDService.Repository.ContactRepository.UpdateContact (
    Contact contact) [inline]
```

Updates existing contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

true if object was updated successfully false if not

Implements [CRUDService.Repository.IContactRepository](#).

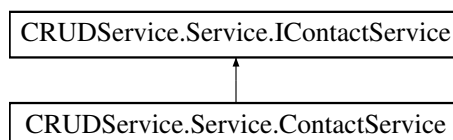
The documentation for this class was generated from the following file:

- [CRUDService/Repository/ContactRepository.cs](#)

6.18 CRUDService.Service.ContactService Class Reference

Implements bussiness logic and mediates between contrler and repository layers.

Inheritance diagram for [CRUDService.Service.ContactService](#):



Public Member Functions

- [ContactService](#) ([IContactRepository](#) contactRepo)
Constructor for supporting injections.
- async Task< bool > [AddContact](#) ([Contact](#) contact)
Adds new contact.
- async Task< bool > [CheckIfEmailTaken](#) (string email)
Retrieves contact by its Email.
- async Task< bool > [CheckIfIdExists](#) (Guid id)
Checks if contact with given id exists.
- async Task< bool > [CommonContactValidation](#) ([Contact](#) contact)
Performs validations for update and creation of contact.
- async Task< bool > [DeleteContact](#) (Guid id)
Deletes existing contact.
- async Task< List< [Category](#) > > [FindAllCategories](#) ()
Retrieves all categories.
- async Task< List< [Contact](#) > > [FindAllContacts](#) (int skip, int take)
Retrieves a paginated list of contacts.
- async Task< List< [SubCategory](#) > > [FindAllSubCategories](#) ()
Fetches all subcategories.
- async Task< List< string > > [FindAllSubCategoriesById](#) (int id)
Fetches all subcategories by category id.
- async Task< string?> [FindCategoryNameById](#) (int id)
Retrieves a category name for given id.
- async Task< [Contact](#)?> [FindContactById](#) (Guid id)
Retrieves contact by its id.
- async Task< string?> [FindUserEmailById](#) (Guid id)
Retrieves user email by her/his id.
- async Task< bool > [UpdateContact](#) ([Contact](#) contact)
Updates existing contact.

Private Attributes

- readonly [IContactRepository](#) _contactRepo

6.18.1 Detailed Description

Implements bussiness logic and mediates between contrler and repository layers.

6.18.2 Constructor & Destructor Documentation

6.18.2.1 ContactService()

```
CRUDService.Service.ContactService.ContactService (
    IContactRepository contactRepo) [inline]
```

Constructor for supporting injections.

Parameters

<i>contactRepo</i>	Injected ContactRepository object
--------------------	---

6.18.3 Member Function Documentation

6.18.3.1 AddContact()

```
async Task< bool > CRUDService.Service.ContactService.AddContact (  
    Contact contact) [inline]
```

Adds new contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

bool whether [Contact](#) object was successfully added to the database

Implements [CRUDService.Service.IContactService](#).

6.18.3.2 CheckIfEmailTaken()

```
async Task< bool > CRUDService.Service.ContactService.CheckIfEmailTaken (  
    string email) [inline]
```

Retrieves contact by its Email.

Parameters

<i>email</i>	
--------------	--

Returns

bool saying whether email exists or not

Implements [CRUDService.Service.IContactService](#).

6.18.3.3 CheckIfIdExists()

```
async Task< bool > CRUDService.Service.ContactService.CheckIfIdExists (  
    Guid id) [inline]
```

Checks if contact with given id exists.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

bool saying whether object with given id exists or not

Implements [CRUDService.Service.IContactService](#).

6.18.3.4 CommonContactValidation()

```
async Task< bool > CRUDService.Service.ContactService.CommonContactValidation (
    Contact contact) [inline]
```

Performs validations for update and creation of contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

bool saying whether given [Contact](#) object's properties

Implements [CRUDService.Service.IContactService](#).

6.18.3.5 DeleteContact()

```
async Task< bool > CRUDService.Service.ContactService.DeleteContact (
    Guid id) [inline]
```

Deletes existing contact.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

bool sqying whether deletion was successful or not

Implements [CRUDService.Service.IContactService](#).

6.18.3.6 FindAllCategories()

```
async Task< List< Category > > CRUDService.Service.ContactService.FindAllCategories () [inline]
```

Retrieves all categories.

Returns

List of [Category](#) objects in the database

Implements [CRUDService.Service.IContactService](#).

6.18.3.7 FindAllContacts()

```
async Task< List< Contact > > CRUDService.Service.ContactService.FindAllContacts (
    int skip,
    int take) [inline]
```

Retrieves a paginated list of contacts.

Parameters

<i>skip</i>	Defines how many records should be skipped
<i>take</i>	Defines max length of returned list

Returns

Either [Contact](#) object or null

Implements [CRUDService.Service.IContactService](#).

6.18.3.8 FindAllSubCategories()

```
async Task< List< SubCategory > > CRUDService.Service.ContactService.FindAllSubCategories ()
[inline]
```

Fetches all subcategories.

Returns

List of all [SubCategory](#) objects in the database

Implements [CRUDService.Service.IContactService](#).

6.18.3.9 FindAllSubCategoriesById()

```
async Task< List< string > > CRUDService.Service.ContactService.FindAllSubCategoriesById (
    int id) [inline]
```

Fetches all subcategories by category id.

Parameters

<i>id</i>	
-----------	--

Returns

List of names of all the subcategory names belonging to the given [Category](#)

Implements [CRUDService.Service.IContactService](#).

6.18.3.10 FindCategoryNameById()

```
async Task< string?> CRUDService.Service.ContactService.FindCategoryNameById (
    int id) [inline]
```

Retrieves a category name for given id.

Parameters

<i>id</i>	Id of Category object
-----------	---------------------------------------

Returns

List of names of all subcategories of category with given id

Implements [CRUDService.Service.IContactService](#).

6.18.3.11 FindContactById()

```
async Task< Contact?> CRUDService.Service.ContactService.FindContactById (
    Guid id) [inline]
```

Retrieves contact by its id.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

[Contact](#) object or null

Implements [CRUDService.Service.IContactService](#).

6.18.3.12 FindUserEmailById()

```
async Task< string?> CRUDService.Service.ContactService.FindUserEmailById (
    Guid id) [inline]
```

Retrieves user email by her/his id.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

Email as string or null

Implements [CRUDService.Service.IContactService](#).

6.18.3.13 UpdateContact()

```
async Task< bool > CRUDService.Service.ContactService.UpdateContact (
    Contact contact) [inline]
```

Updates existing contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

bool saying whether update was successful or not

Implements [CRUDService.Service.IContactService](#).

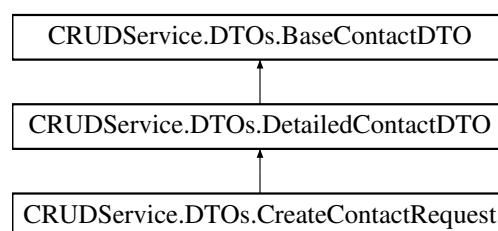
The documentation for this class was generated from the following file:

- [CRUDService/Service/ContactService.cs](#)

6.19 CRUDService.DTOs.CreateContactRequest Class Reference

DTO class used for updates and creation requests, it posses every field informative field of contact. Annotated for early valdiation and early rejection of invalid requests.

Inheritance diagram for [CRUDService.DTOs.CreateContactRequest](#):



Properties

- required int **CategoryId** [get, set]
- required string **Password** [get, set]

Properties inherited from [CRUDService.DTOs.DetailedContactDTO](#)

- string? **SubCategory** [get, set]
- required string **Phone** [get, set]
- required DateOnly **BirthDate** [get, set]

Properties inherited from [CRUDService.DTOs.BaseContactDTO](#)

- Guid **Id** [get, set]
- required string **Name** [get, set]
- required string **Surname** [get, set]
- required string **Email** [get, set]

6.19.1 Detailed Description

DTO class used for updates and creation requests, it posses every field informative field of contact. Annotated for early valdiation and early rejection of invalid requests.

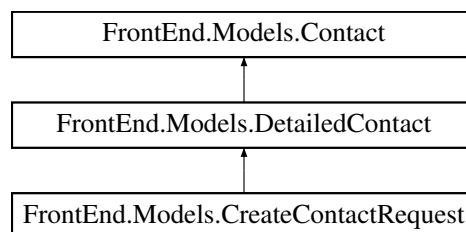
The documentation for this class was generated from the following file:

- CRUDService/DTOs/CreateContactRequest.cs

6.20 FrontEnd.Models.CreateContactRequest Class Reference

dTO class used for updates and creation requests, it posses every field informative field of contact Annotated for early valdiation and early rejection of invalid requests.

Inheritance diagram for FrontEnd.Models.CreateContactRequest:



Properties

- int? **CategoryId** [get, set]
- string? **Password** [get, set]

Properties inherited from [FrontEnd.Models.DetailedContact](#)

- string? **SubCategory** [get, set]
- string? **Phone** [get, set]
- DateOnly **BirthDate** [get, set]

Properties inherited from [FrontEnd.Models.Contact](#)

- Guid **Id** [get, set]
- string? **Name** [get, set]
- string? **Surname** [get, set]
- string? **Email** [get, set]

6.20.1 Detailed Description

dTO class used for updates and creation requests, it posses every field informative field of contact Annotated for early valdiation and early rejection of invalid requests.

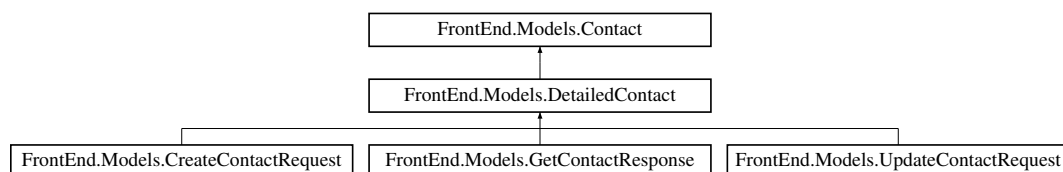
The documentation for this class was generated from the following file:

- FrontEnd/Models/CreateContactRequest.cs

6.21 FrontEnd.Models.DetailedContact Class Reference

More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early valdiation and early rejection of invalid requests.

Inheritance diagram for FrontEnd.Models.DetailedContact:



Properties

- string? **SubCategory** [get, set]
- string? **Phone** [get, set]
- DateOnly **BirthDate** [get, set]

Properties inherited from [FrontEnd.Models.Contact](#)

- Guid **Id** [get, set]
- string? **Name** [get, set]
- string? **Surname** [get, set]
- string? **Email** [get, set]

6.21.1 Detailed Description

More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early validation and early rejection of invalid requests.

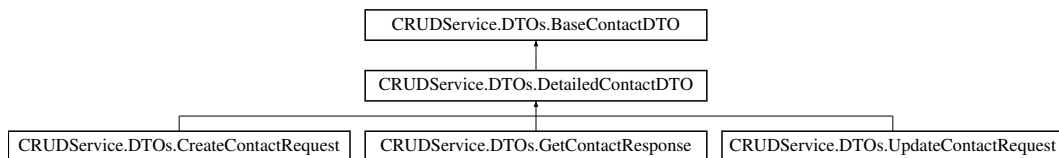
The documentation for this class was generated from the following file:

- FrontEnd/Models/DetailedContact.cs

6.22 CRUDService.DTOs.DetailedContactDTO Class Reference

More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for CRUDService.DTOs.DetailedContactDTO:



Properties

- string? **SubCategory** [get, set]
- required string **Phone** [get, set]
- required DateOnly **BirthDate** [get, set]

Properties inherited from [CRUDService.DTOs.BaseContactDTO](#)

- Guid **Id** [get, set]
- required string **Name** [get, set]
- required string **Surname** [get, set]
- required string **Email** [get, set]

6.22.1 Detailed Description

More detailed DTO used for adding missing fields from BASEContactDTO. It's used to minimize code duplication. Annotated for early validation and early rejection of invalid requests.

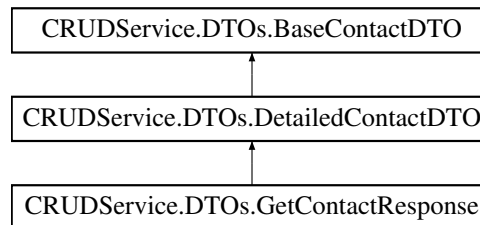
The documentation for this class was generated from the following file:

- CRUDService/DTOs/DetailedContactDTO.cs

6.23 CRUDService.DTOs.GetContactResponse Class Reference

Detailed DTO class used to transfer data needed for detailed view of contact info. Caution: Password field is purposefully omitted due to security reasons. Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for `CRUDService.DTOs.GetContactResponse`:



Properties

- required string **Category** [get, set]

Properties inherited from [CRUDService.DTOs.DetailedContactDTO](#)

- string? **SubCategory** [get, set]
- required string **Phone** [get, set]
- required DateOnly **BirthDate** [get, set]

Properties inherited from [CRUDService.DTOs.BaseContactDTO](#)

- Guid **Id** [get, set]
- required string **Name** [get, set]
- required string **Surname** [get, set]
- required string **Email** [get, set]

6.23.1 Detailed Description

Detailed DTO class used to transfer data needed for detailed view of contact info. Caution: Password field is purposefully omitted due to security reasons. Annotated for early validation and early rejection of invalid requests.

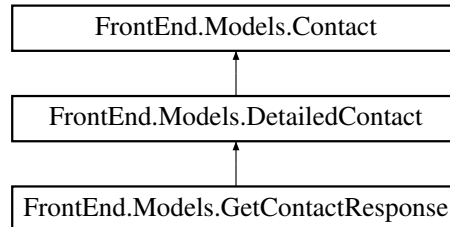
The documentation for this class was generated from the following file:

- `CRUDService/DTOs/GetContactResponse.cs`

6.24 FrontEnd.Models.GetContactResponse Class Reference

Detailed DTO class used to transfer data needed for detailed view of contact info. Caution: Password field is purposefully omitted due to security reasons. Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for FrontEnd.Models.GetContactResponse:



Properties

- string? **Category** [get, set]

Properties inherited from [FrontEnd.Models.DetailedContact](#)

- string? **SubCategory** [get, set]
- string? **Phone** [get, set]
- DateOnly **BirthDate** [get, set]

Properties inherited from [FrontEnd.Models.Contact](#)

- Guid **Id** [get, set]
- string? **Name** [get, set]
- string? **Surname** [get, set]
- string? **Email** [get, set]

6.24.1 Detailed Description

Detailed DTO class used to transfer data needed for detailed view of contact info. Caution: Password field is purposefully omitted due to security reasons. Annotated for early validation and early rejection of invalid requests.

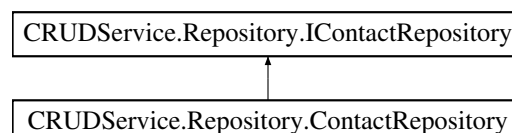
The documentation for this class was generated from the following file:

- FrontEnd/Models/GetContactResponse.cs

6.25 CRUDService.Repository.IContactRepository Interface Reference

Interface possesses collection of methods for handling data stored in the database.

Inheritance diagram for CRUDService.Repository.IContactRepository:



Public Member Functions

- Task< bool > [CheckIfIdExists](#) (Guid id)
Checks if contact with given id exists.
- Task< [Contact?](#)> [FindContactById](#) (Guid id)
Retrieves contact by its id.
- Task< bool > [CheckIfEmailTaken](#) (string email)
Retrieves contact by its Email.
- Task< List< [Contact](#) > > [FindAllContacts](#) (int skip, int take)
Retrieves a paginated list of contacts.
- Task< List< [Category](#) > > [FindAllCategories](#) ()
Retrieves all categories.
- Task< string?> [FindCategoryNameById](#) (int id)
Retrieves a category name for given id.
- Task< string?> [FindUserEmailById](#) (Guid id)
Retrieves user email by her/his id.
- Task< List< string > > [FindAllSubCategoriesById](#) (int id)
Fetches all subcategories for given id.
- Task< List< [SubCategory](#) > > [FindAllSubCategories](#) ()
Fetches all subcategories.
- Task [AddContact](#) ([Contact](#) contact)
Adds new contact.
- Task< bool > [UpdateContact](#) ([Contact](#) contact)
Updates existing contact.
- Task< bool > [DeleteContact](#) (Guid id)
Deletes existing contact.

6.25.1 Detailed Description

Interface possesses collection of methods for handling data stored in the database.

6.25.2 Member Function Documentation

6.25.2.1 AddContact()

```
Task CRUDService.Repository.IContactRepository.AddContact (
    Contact contact)
```

Adds new contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.2 CheckIfEmailTaken()

```
Task< bool > CRUDService.Repository.IContactRepository.CheckIfEmailTaken (
    string email)
```

Retrieves contact by its Email.

Parameters

<i>email</i>	
--------------	--

Returns

true if given email exists or false if not

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.3 CheckIfIdExists()

```
Task< bool > CRUDService.Repository.IContactRepository.CheckIfIdExists (
    Guid id)
```

Checks if contact with given id exists.

Parameters

<i>id</i>	Contacts Guid
-----------	---------------

Returns

true if exists false if not

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.4 DeleteContact()

```
Task< bool > CRUDService.Repository.IContactRepository.DeleteContact (
    Guid id)
```

Deletes existing contact.

Parameters

<i>id</i>	Contact's Guid
-----------	--------------------------------

Returns

true if object was deleted successfully false if not

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.5 FindAllCategories()

```
Task< List< Category > > CRUDService.Repository.IContactRepository.FindAllCategories ()
```

Retrieves all categories.

Returns

[Category](#) object

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.6 FindAllContacts()

```
Task< List< Contact > > CRUDService.Repository.IContactRepository.FindAllContacts (
    int skip,
    int take)
```

Retrieves a paginated list of contacts.

Parameters

<i>skip</i>	Defines how many records should be skipped
<i>take</i>	Defines max length of returned list

Returns

Either [Contact](#) object or null

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.7 FindAllSubCategories()

```
Task< List< SubCategory > > CRUDService.Repository.IContactRepository.FindAllSubCategories ()
```

Fetches all subcategories.

Returns

List of all subcategories

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.8 FindAllSubCategoriesById()

```
Task< List< string > > CRUDService.Repository.IContactRepository.FindAllSubCategoriesById (
    int id)
```

Fetches all subcategories for given id.

Parameters

<i>id</i>	Id of a Category
-----------	----------------------------------

Returns

List of names of all the subcategory names belonging to the given [Category](#)

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.9 FindCategoryNameById()

```
Task< string?> CRUDService.Repository.IContactRepository.FindCategoryNameById (
    int id)
```

Retrieves a category name for given id.

Parameters

<i>id</i>	Id of a Category
-----------	----------------------------------

Returns

[Category](#)'s name

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.10 FindContactById()

```
Task< Contact?> CRUDService.Repository.IContactRepository.FindContactById (
    Guid id)
```

Retrieves contact by its id.

Parameters

<i>id</i>	Contacts Guid
-----------	---------------

Returns

Either [Contact](#) object or null

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.11 FindUserEmailById()

```
Task< string?> CRUDService.Repository.IContactRepository.FindUserEmailById (
    Guid id)
```

Retrieves user email by her/his id.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

[Contact](#)'s email

Implemented in [CRUDService.Repository.ContactRepository](#).

6.25.2.12 UpdateContact()

```
Task< bool > CRUDService.Repository.IContactRepository.UpdateContact (
    Contact contact)
```

Updates existing contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

true if object was updated successfully false if not

Implemented in [CRUDService.Repository.ContactRepository](#).

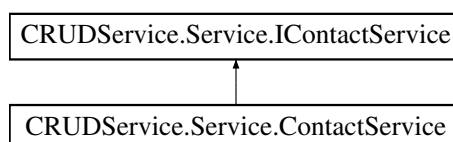
The documentation for this interface was generated from the following file:

- CRUDService/Repository/IContactRepository.cs

6.26 CRUDService.Service.IContactService Interface Reference

Defines bussiness logic operations for [Contact](#) management.

Inheritance diagram for CRUDService.Service.IContactService:



Public Member Functions

- Task< bool > [CheckIfEmailTaken](#) (string email)
Retrieves contact by its Email.
- Task< bool > [CheckIfIdExists](#) (Guid id)
Checks if contact with given id exists.
- Task< [Contact](#)? > [FindContactById](#) (Guid id)
Retrieves contact by its id.
- Task< List< [Contact](#) > > [FindAllContacts](#) (int skip, int take)
Retrieves a paginated list of contacts.
- Task< List< [Category](#) > > [FindAllCategories](#) ()
Retrieves all categories.
- Task< string? > [FindCategoryNameById](#) (int id)
Retrieves a category name for given id.
- Task< string? > [FindUserEmailById](#) (Guid id)
Retrieves user email by her/his id.
- Task< List< string > > [FindAllSubCategoriesById](#) (int id)
Fetches all subcategories by category id.
- Task< List< [SubCategory](#) > > [FindAllSubCategories](#) ()
Fetches all subcategories.
- Task< bool > [AddContact](#) ([Contact](#) contact)
Adds new contact.
- Task< bool > [UpdateContact](#) ([Contact](#) contact)
Updates existing contact.
- Task< bool > [DeleteContact](#) (Guid id)
Deletes existing contact.
- Task< bool > [CommonContactValidation](#) ([Contact](#) contact)
Performs validations for update and creation of contact.

6.26.1 Detailed Description

Defines bussiness logic operations for [Contact](#) management.

6.26.2 Member Function Documentation

6.26.2.1 AddContact()

```
Task< bool > CRUDService.Service.IContactService.AddContact (
    Contact contact)
```

Adds new contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

bool whether [Contact](#) object was successfully added to the database

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.2 CheckIfEmailTaken()

```
Task< bool > CRUDService.Service.IContactService.CheckIfEmailTaken (
    string email)
```

Retrieves contact by its Email.

Parameters

<i>email</i>	
--------------	--

Returns

bool saying whether email exists or not

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.3 CheckIfIdExists()

```
Task< bool > CRUDService.Service.IContactService.CheckIfIdExists (
    Guid id)
```

Checks if contact with given id exists.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

bool saying whether object with given id exists or not

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.4 CommonContactValidation()

```
Task< bool > CRUDService.Service.IContactService.CommonContactValidation (
    Contact contact)
```

Performs validations for update and creation of contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

bool saying whether given [Contact](#) object's properties

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.5 DeleteContact()

```
Task< bool > CRUDService.Service.IContactService.DeleteContact (
    Guid id)
```

Deletes existing contact.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

bool sqying whether deletion was successful or not

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.6 FindAllCategories()

```
Task< List< Category > > CRUDService.Service.IContactService.FindAllCategories ()
```

Retrieves all categories.

Returns

List of [Category](#) objects in the database

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.7 FindAllContacts()

```
Task< List< Contact > > CRUDService.Service.IContactService.FindAllContacts (  
    int skip,  
    int take)
```

Retrieves a paginated list of contacts.

Parameters

<i>skip</i>	Defines how many records should be skipped
<i>take</i>	Defines max length of returned list

Returns

Either [Contact](#) object or null

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.8 FindAllSubCategories()

```
Task< List< SubCategory > > CRUDService.Service.IContactService.FindAllSubCategories ()
```

Fetches all subcategories.

Returns

List of all [SubCategory](#) objects in the database

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.9 FindAllSubCategoriesById()

```
Task< List< string > > CRUDService.Service.IContactService.FindAllSubCategoriesById (  
    int id)
```

Fetches all subcategories by category id.

Parameters

<i>id</i>	
-----------	--

Returns

List of names of all the subcategory names belonging to the given [Category](#)

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.10 FindCategoryNameById()

```
Task< string?> CRUDService.Service.IContactService.FindCategoryNameById (
    int id)
```

Retrieves a category name for given id.

Parameters

<i>id</i>	Id of Category object
-----------	---------------------------------------

Returns

List of names of all subcategories of category with given id

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.11 FindContactById()

```
Task< Contact?> CRUDService.Service.IContactService.FindContactById (
    Guid id)
```

Retrieves contact by its id.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

[Contact](#) object or null

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.12 FindUserEmailById()

```
Task< string?> CRUDService.Service.IContactService.FindUserEmailById (
    Guid id)
```

Retrieves user email by her/his id.

Parameters

<i>id</i>	Contact 's Guid
-----------	---------------------------------

Returns

Email as string or null

Implemented in [CRUDService.Service.ContactService](#).

6.26.2.13 UpdateContact()

```
Task< bool > CRUDService.Service.IContactService.UpdateContact (
    Contact contact)
```

Updates existing contact.

Parameters

<i>contact</i>	Contact object
----------------	--------------------------------

Returns

bool saying whether update was successful or not

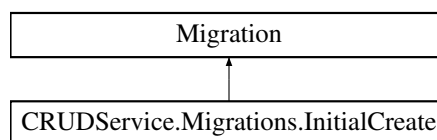
Implemented in [CRUDService.Service.ContactService](#).

The documentation for this interface was generated from the following file:

- CRUDService/Service/IContactService.cs

6.27 CRUDService.Migrations.InitialCreate Class Reference

Inheritance diagram for CRUDService.Migrations.InitialCreate:

**Protected Member Functions**

- override void **Up** (MigrationBuilder migrationBuilder)
- override void **Down** (MigrationBuilder migrationBuilder)
- override void **BuildTargetModel** (ModelBuilder modelBuilder)

6.27.1 Detailed Description

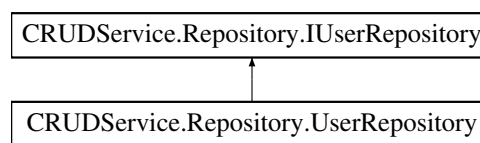
The documentation for this class was generated from the following files:

- `CRUDService/Migrations/20250418231734_InitialCreate.cs`
- `CRUDService/Migrations/20250418231734_InitialCreate.Designer.cs`

6.28 CRUDService.Repository.IUserRepository Interface Reference

Interface possesses collection of methods for handling data stored in the database.

Inheritance diagram for `CRUDService.Repository.IUserRepository`:



Public Member Functions

- `Task< string?> FindUserPasswordHash (string email)`
Retrieves password hash for given email.

6.28.1 Detailed Description

Interface possesses collection of methods for handling data stored in the database.

6.28.2 Member Function Documentation

6.28.2.1 FindUserPasswordHash()

```
Task< string?> CRUDService.Repository.IUserRepository.FindUserPasswordHash (
    string email)
```

Retrieves password hash for given email.

Parameters

<i>email</i>	
--------------	--

Returns

Hash of a password associated with given email

Implemented in [CRUDService.Repository.UserRepository](#).

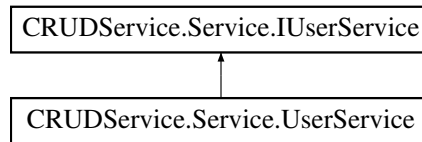
The documentation for this interface was generated from the following file:

- `CRUDService/Repository/IUserRepository.cs`

6.29 CRUDService.Service.IUserService Interface Reference

Defines bussiness logic in regards authentication of users.

Inheritance diagram for CRUDService.Service.IUserService:



Public Member Functions

- Task< string?> [FindUserPasswordHash](#) (string email)
Retrieves password hash for given email.
- Task< string?> [Authenticate](#) ([User](#) user)
Hadnles user authentication.
- Task< bool > [VerifyPassword](#) (string givenHash, string email)
Verifies given password with the one stored in database.
- string [GenerateJwtToken](#) (string email)
Generates jwt token for authorization.

6.29.1 Detailed Description

Defines bussiness logic in regards authentication of users.

6.29.2 Member Function Documentation

6.29.2.1 Authenticate()

```
Task< string?> CRUDService.Service.IUserService.Authenticate (
    User user)
```

Hadnles user authentication.

Parameters

<i>user</i>	User object
-------------	-----------------------------

Returns

Returns Jwttoken as string or null

Implemented in [CRUDService.Service.UserService](#).

6.29.2.2 FindUserPasswordHash()

```
Task< string?> CRUDService.Service.IUserService.FindUserPasswordHash (
    string email)
```

Retrieves password hash for given email.

Parameters

<i>email</i>	
--------------	--

Returns

Hashed password from the database for the given email or null

Implemented in [CRUDService.Service.UserService](#).

6.29.2.3 GenerateJwtToken()

```
string CRUDService.Service.IUserService.GenerateJwtToken (  
    string email)
```

Generates jwt token for authorization.

Parameters

<i>email</i>	
--------------	--

Returns

Jwt token as string

Implemented in [CRUDService.Service.UserService](#).

6.29.2.4 VerifyPassword()

```
Task< bool > CRUDService.Service.IUserService.VerifyPassword (  
    string givenHash,  
    string email)
```

Verifies given password with the one stored in database.

Parameters

<i>givenHash</i>	Hshed password
<i>email</i>	

Returns

bool sqying whether givenHash is the same as the one stored in the databse for the given email

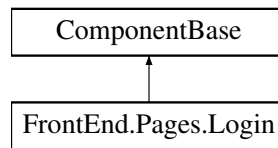
Implemented in [CRUDService.Service.UserService](#).

The documentation for this interface was generated from the following file:

- [CRUDService/Service/IUserService.cs](#)

6.30 FrontEnd.Pages.Login Class Reference

Inheritance diagram for FrontEnd.Pages.Login:



Protected Member Functions

- override async Task [OnInitializedAsync](#) ()
Redirects logged in users to homepage.

Private Member Functions

- async Task [LogIn](#) ()
Sends [Login](#) request.

Private Attributes

- [User](#) `user` = new()

6.30.1 Member Function Documentation

6.30.1.1 LogIn()

```
async Task FrontEnd.Pages.Login.LogIn () [inline], [private]
```

Sends [Login](#) request.

Returns

6.30.1.2 OnInitializedAsync()

```
override async Task FrontEnd.Pages.Login.OnInitializedAsync () [inline], [protected]
```

Redirects logged in users to homepage.

Returns

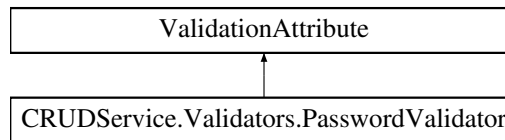
The documentation for this class was generated from the following file:

- FrontEnd/Pages/Login.razor.cs

6.31 CRUDService.Validators.PasswordValidator Class Reference

Custom password validator for use in automatic password validation through annotations.

Inheritance diagram for CRUDService.Validators.PasswordValidator:



Public Member Functions

- override bool **IsValid** (object value)
Checks if given value is valid.
- override string **FormatErrorMessage** (string name)

Properties

- bool **IsEdit** [get, set]

6.31.1 Detailed Description

Custom password validator for use in automatic password validation through annotations.

6.31.2 Member Function Documentation

6.31.2.1 IsValid()

```
override bool CRUDService.Validators.PasswordValidator.IsValid (
    object value) [inline]
```

Checks if given value is valid.

Parameters

<i>value</i>	
--------------	--

Returns

true iof valid false otherwise

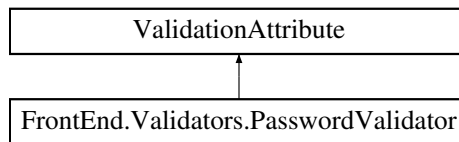
The documentation for this class was generated from the following file:

- CRUDService/Validators/PasswordValidator.cs

6.32 FrontEnd.Validators.PasswordValidator Class Reference

Custom password validator for use in automatic password validation through annotations.

Inheritance diagram for FrontEnd.Validators.PasswordValidator:



Public Member Functions

- override bool **IsValid** (object value)
Checks if given value is valid.
- override string **FormatErrorMessage** (string name)

Properties

- bool **IsEdit** [get, set]

6.32.1 Detailed Description

Custom password validator for use in automatic password validation through annotations.

6.32.2 Member Function Documentation

6.32.2.1 IsValid()

```

override bool FrontEnd.Validators.PasswordValidator.IsValid (
    object value) [inline]
  
```

Checks if given value is valid.

Parameters

<i>value</i>	
--------------	--

Returns

true iof valid false otherwise

The documentation for this class was generated from the following file:

- FrontEnd/Validators/PasswordValidator.cs

6.33 CRUService.Models.SubCategory Class Reference

Entity class for Dictionary entity [SubCategory](#) it is used only for dictionary entries For [SubCategory](#) that are limited to bussiness [Category](#) For database table constraint details see Contracts/SubCategoryConfiguration.cs file.

Properties

- int **Id** [get, set]
- required string **Name** [get, set]
- required int **CategoryId** [get, set]

6.33.1 Detailed Description

Entity class for Dictionary entity [SubCategory](#) it is used only for dictionary entries For [SubCategory](#) that are limited to bussiness [Category](#) For database table constraint details see Contracts/SubCategoryConfiguration.cs file.

The documentation for this class was generated from the following file:

- CRUService/Models/SubCategory.cs

6.34 FrontEnd.Models.SubCategory Class Reference

Entity class for Dictionary entity [SubCategory](#) it is used only for dictionary entries For [SubCategory](#) that are limited to bussiness [Category](#) For database table constraint details see Contracts/SubCategoryConfiguration.cs file Annotated for early valdiation and early rejection of invalid requests.

Properties

- int **Id** [get, set]
- required string **Name** [get, set]
- required int **CategoryId** [get, set]

6.34.1 Detailed Description

Entity class for Dictionary entity [SubCategory](#) it is used only for dictionary entries For [SubCategory](#) that are limited to bussiness [Category](#) For database table constraint details see Contracts/SubCategoryConfiguration.cs file Annotated for early valdiation and early rejection of invalid requests.

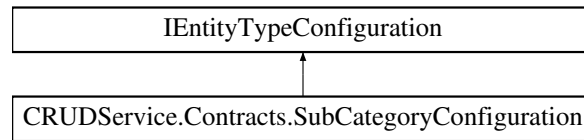
The documentation for this class was generated from the following file:

- FrontEnd/Models/SubCategory.cs

6.35 CRUDService.Contracts.SubCategoryConfiguration Class Reference

Class needed for configuring specific rules of its table in the db.

Inheritance diagram for CRUDService.Contracts.SubCategoryConfiguration:



Public Member Functions

- void [Configure](#) (EntityTypeBuilder< [SubCategory](#) > builder)
Sets configuration of the Contacts table.

6.35.1 Detailed Description

Class needed for configuring specific rules of its table in the db.

6.35.2 Member Function Documentation

6.35.2.1 Configure()

```
void CRUDService.Contracts.SubCategoryConfiguration.Configure (
    EntityTypeBuilder< SubCategory > builder) [inline]
```

Sets configuration of the Contacts table.

Parameters

<i>builder</i>	
----------------	--

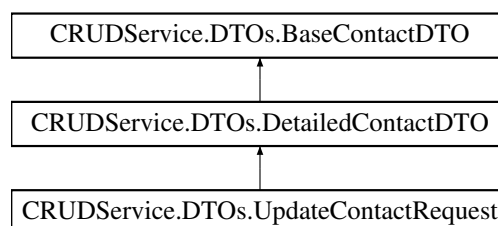
The documentation for this class was generated from the following file:

- CRUDService/Contracts/SubCategoryConfiguration.cs

6.36 CRUDService.DTOs.UpdateContactRequest Class Reference

DTO class for use when receiving Contact update requests. Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for CRUDService.DTOs.UpdateContactRequest:



Properties

- required int **CategoryId** [get, set]
- string? **Password** [get, set]

Properties inherited from [CRUDService.DTOs.DetailedContactDTO](#)

- string? **SubCategory** [get, set]
- required string **Phone** [get, set]
- required DateOnly **BirthDate** [get, set]

Properties inherited from [CRUDService.DTOs.BaseContactDTO](#)

- Guid **Id** [get, set]
- required string **Name** [get, set]
- required string **Surname** [get, set]
- required string **Email** [get, set]

6.36.1 Detailed Description

DTO class for use when receiving Contact update requests. Annotated for early validation and early rejection of invalid requests.

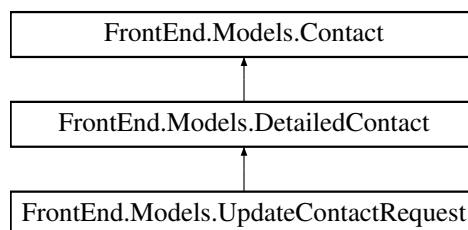
The documentation for this class was generated from the following file:

- CRUDService/DTOs/UpdateContactRequest.cs

6.37 FrontEnd.Models.UpdateContactRequest Class Reference

DTO class for use when receiving [Contact](#) update requests Annotated for early validation and early rejection of invalid requests.

Inheritance diagram for FrontEnd.Models.UpdateContactRequest:



Properties

- int? **CategoryId** [get, set]
- string? **Password** [get, set]

Properties inherited from [FrontEnd.Models.DetailedContact](#)

- string? **SubCategory** [get, set]
- string? **Phone** [get, set]
- DateOnly **BirthDate** [get, set]

Properties inherited from [FrontEnd.Models.Contact](#)

- Guid **Id** [get, set]
- string? **Name** [get, set]
- string? **Surname** [get, set]
- string? **Email** [get, set]

6.37.1 Detailed Description

DTO class for use when receiving [Contact](#) update requests Annotated for early validation and early rejection of invalid requests.

The documentation for this class was generated from the following file:

- FrontEnd/Models/UpdateContactRequest.cs

6.38 CRUDService.Models.User Class Reference

Class representing a user.

Properties

- required string **Email** [get, set]
- required string **Password** [get, set]

6.38.1 Detailed Description

Class representing a user.

The documentation for this class was generated from the following file:

- CRUDService/Models/User.cs

6.39 FrontEnd.Models.User Class Reference

Class representing a user. Annotated for early validation and early rejection of invalid requests.

Properties

- string? **Email** [get, set]
- string? **Password** [get, set]

6.39.1 Detailed Description

Class representing a user. Annotated for early validation and early rejection of invalid requests.

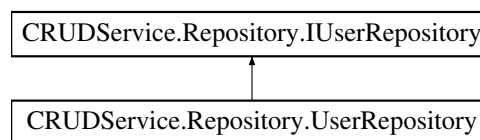
The documentation for this class was generated from the following file:

- FrontEnd/Models/User.cs

6.40 CRUDService.Repository.UserRepository Class Reference

Implementation of [IUserRepository](#) interface.

Inheritance diagram for `CRUDService.Repository.UserRepository`:



Public Member Functions

- [UserRepository](#) ([AppDbContext](#) context)
Constructor.
- async Task< string?> [FindUserPasswordHash](#) (string email)
Retrieves password hash for given email.

Private Attributes

- readonly [AppDbContext](#) _context

6.40.1 Detailed Description

Implementation of [IUserRepository](#) interface.

6.40.2 Constructor & Destructor Documentation

6.40.2.1 UserRepository()

```
CRUDService.Repository.UserRepository.UserRepository (
    AppDbContext context) [inline]
```

Constructor.

Parameters

context	
---------	--

6.40.3 Member Function Documentation

6.40.3.1 FindUserPasswordHash()

```
async Task< string?> CRUDService.Repository.UserRepository.FindUserPasswordHash (
    string email) [inline]
```

Retrieves password hash for given email.

Parameters

email	
-------	--

Returns

Hash of a password associated with given email

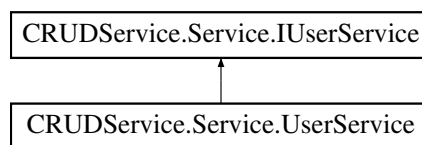
Implements [CRUDService.Repository.IUserRepository](#).

The documentation for this class was generated from the following file:

- [CRUDService/Repository/UserRepository.cs](#)

6.41 CRUDService.Service.UserService Class Reference

Inheritance diagram for `CRUDService.Service.UserService`:



Public Member Functions

- [UserService](#) ([IUserRepository](#) userRepo, IConfiguration config)
Constructor supporting DI.
- `async Task< string?>` [Authenticate](#) ([User](#) user)
Handles user authentication.
- `async Task< string?>` [FindUserPasswordHash](#) (string email)
Retrieves password hash for given email.
- `async Task< bool >` [VerifyPassword](#) (string givenHash, string email)
Verifies given password with the one stored in database.
- `string` [GenerateJwtToken](#) (string email)
Generates jwt token for authorization.

Private Attributes

- readonly [IUserRepository](#) **_userRepo**
- readonly [IConfiguration](#) **_config**

6.41.1 Constructor & Destructor Documentation

6.41.1.1 UserService()

```
CRUDService.Service.UserService.UserService (
    IUserRepository userRepo,
    IConfiguration config) [inline]
```

Constructor supporting DI.

Parameters

<i>userRepo</i>	Injected IUserRepository object
<i>config</i>	Injected IConfiguration object

6.41.2 Member Function Documentation

6.41.2.1 Authenticate()

```
async Task< string?> CRUDService.Service.UserService.Authenticate (
    User user) [inline]
```

Hadnles user authentication.

Parameters

<i>user</i>	User object
-------------	-----------------------------

Returns

Returns Jwttoken as string or null

Implements [CRUDService.Service.IUserService](#).

6.41.2.2 FindUserPasswordHash()

```
async Task< string?> CRUDService.Service.UserService.FindUserPasswordHash (
    string email) [inline]
```

Retrieves password hash for given email.

Parameters

<i>email</i>	
--------------	--

Returns

Hashed password from the database for the given email or null

Implements [CRUDService.Service.IUserService](#).

6.41.2.3 GenerateJwtToken()

```
string CRUDService.Service.UserService.GenerateJwtToken (  
    string email) [inline]
```

Generates jwt token for authorization.

Parameters

<i>email</i>	
--------------	--

Returns

Jwt token as string

Implements [CRUDService.Service.IUserService](#).

6.41.2.4 VerifyPassword()

```
async Task< bool > CRUDService.Service.UserService.VerifyPassword (  
    string givenHash,  
    string email) [inline]
```

Verifies given password with the one stored in database.

Parameters

<i>givenHash</i>	Hshed password
<i>email</i>	

Returns

bool sqying whether givenHash is the same as the one stored in the databse for the given email

Implements [CRUDService.Service.IUserService](#).

The documentation for this class was generated from the following file:

- CRUDService/Service/UserService.cs

Index

- AddContact
 - CRUDService.Repository.ContactRepository, [38](#)
 - CRUDService.Repository.IContactRepository, [54](#)
 - CRUDService.Service.ContactService, [44](#)
 - CRUDService.Service.IContactService, [59](#)
- AuthController
 - CRUDService.Controllers.AuthController, [17](#)
- Authenticate
 - CRUDService.Service.IUserService, [65](#)
 - CRUDService.Service.UserService, [76](#)
- Authorize
 - CRUDService.Controllers.AuthController, [17](#)
- CheckIfEmailTaken
 - CRUDService.Controllers.ContactController, [27](#)
 - CRUDService.Repository.ContactRepository, [38](#)
 - CRUDService.Repository.IContactRepository, [54](#)
 - CRUDService.Service.ContactService, [44](#)
 - CRUDService.Service.IContactService, [59](#)
- CheckIfIdExists
 - CRUDService.Repository.ContactRepository, [39](#)
 - CRUDService.Repository.IContactRepository, [55](#)
 - CRUDService.Service.ContactService, [44](#)
 - CRUDService.Service.IContactService, [60](#)
- CommonContactValidation
 - CRUDService.Service.ContactService, [45](#)
 - CRUDService.Service.IContactService, [60](#)
- Configure
 - CRUDService.Contracts.CategoryConfiguration, [21](#)
 - CRUDService.Contracts.ContactConfiguration, [25](#)
 - CRUDService.Contracts.SubCategoryConfiguration, [71](#)
- ContactController
 - CRUDService.Controllers.ContactController, [27](#)
- ContactRepository
 - CRUDService.Repository.ContactRepository, [38](#)
- ContactService
 - CRUDService.Service.ContactService, [43](#)
- CreateContact
 - CRUDService.Controllers.ContactController, [27](#)
- CRUDService, [11](#)
- CRUDService.Contracts, [11](#)
- CRUDService.Contracts.CategoryConfiguration, [21](#)
 - Configure, [21](#)
- CRUDService.Contracts.ContactConfiguration, [25](#)
 - Configure, [25](#)
- CRUDService.Contracts.SubCategoryConfiguration, [71](#)
 - Configure, [71](#)
- CRUDService.Controllers, [11](#)
- CRUDService.Controllers.AuthController, [16](#)
 - AuthController, [17](#)
 - Authorize, [17](#)
- CRUDService.Controllers.ContactController, [26](#)
 - CheckIfEmailTaken, [27](#)
 - ContactController, [27](#)
 - CreateContact, [27](#)
 - DeleteContact, [27](#)
 - GetCategories, [29](#)
 - GetContact, [29](#)
 - GetContacts, [29](#)
 - GetSubAllCategories, [29](#)
 - GetSubCategories, [30](#)
 - UpdateContact, [30](#)
- CRUDService.Data, [11](#)
- CRUDService.Data.AppDbContext, [15](#)
 - OnModelCreating, [15](#)
- CRUDService.DTOs, [12](#)
- CRUDService.DTOs.BaseContactDTO, [19](#)
- CRUDService.DTOs.CreateContactRequest, [48](#)
- CRUDService.DTOs.DetailedContactDTO, [51](#)
- CRUDService.DTOs.GetContactResponse, [52](#)
- CRUDService.DTOs.UpdateContactRequest, [71](#)
- CRUDService.Helpers, [12](#)
- CRUDService.Migrations, [12](#)
- CRUDService.Migrations.AppDbContextModelSnapshot, [16](#)
- CRUDService.Migrations.InitialCreate, [63](#)
- CRUDService.Models, [12](#)
- CRUDService.Models.Category, [20](#)
- CRUDService.Models.Contact, [21](#)
- CRUDService.Models.SubCategory, [70](#)
- CRUDService.Models.User, [73](#)
- CRUDService.Repository, [13](#)
- CRUDService.Repository.ContactRepository, [37](#)
 - AddContact, [38](#)
 - CheckIfEmailTaken, [38](#)
 - CheckIfIdExists, [39](#)
 - ContactRepository, [38](#)
 - DeleteContact, [39](#)
 - FindAllCategories, [39](#)
 - FindAllContacts, [40](#)
 - FindAllSubCategories, [40](#)
 - FindAllSubCategoriesById, [40](#)
 - FindCategoryNameById, [41](#)
 - FindContactById, [41](#)
 - FindUserEmailById, [41](#)
 - UpdateContact, [42](#)
- CRUDService.Repository.IContactRepository, [53](#)

- AddContact, [54](#)
- CheckIfEmailTaken, [54](#)
- CheckIfIdExists, [55](#)
- DeleteContact, [55](#)
- FindAllCategories, [55](#)
- FindAllContacts, [56](#)
- FindAllSubCategories, [56](#)
- FindAllSubCategoriesById, [56](#)
- FindCategoryNameById, [57](#)
- FindContactById, [57](#)
- FindUserEmailById, [57](#)
- UpdateContact, [58](#)
- CRUDService.Repository.IUserRepository, [64](#)
 - FindUserPasswordHash, [64](#)
- CRUDService.Repository.UserRepository, [74](#)
 - FindUserPasswordHash, [75](#)
 - UserRepository, [74](#)
- CRUDService.Service, [13](#)
- CRUDService.Service.ContactService, [42](#)
 - AddContact, [44](#)
 - CheckIfEmailTaken, [44](#)
 - CheckIfIdExists, [44](#)
 - CommonContactValidation, [45](#)
 - ContactService, [43](#)
 - DeleteContact, [45](#)
 - FindAllCategories, [45](#)
 - FindAllContacts, [46](#)
 - FindAllSubCategories, [46](#)
 - FindAllSubCategoriesById, [46](#)
 - FindCategoryNameById, [47](#)
 - FindContactById, [47](#)
 - FindUserEmailById, [47](#)
 - UpdateContact, [48](#)
- CRUDService.Service.IContactService, [58](#)
 - AddContact, [59](#)
 - CheckIfEmailTaken, [59](#)
 - CheckIfIdExists, [60](#)
 - CommonContactValidation, [60](#)
 - DeleteContact, [60](#)
 - FindAllCategories, [61](#)
 - FindAllContacts, [61](#)
 - FindAllSubCategories, [61](#)
 - FindAllSubCategoriesById, [61](#)
 - FindCategoryNameById, [62](#)
 - FindContactById, [62](#)
 - FindUserEmailById, [62](#)
 - UpdateContact, [63](#)
- CRUDService.Service.IUserService, [65](#)
 - Authenticate, [65](#)
 - FindUserPasswordHash, [65](#)
 - GenerateJwtToken, [66](#)
 - VerifyPassword, [66](#)
- CRUDService.Service.UserService, [75](#)
 - Authenticate, [76](#)
 - FindUserPasswordHash, [76](#)
 - GenerateJwtToken, [77](#)
 - UserService, [76](#)
 - VerifyPassword, [77](#)
- CRUDService.Validators, [13](#)
- CRUDService.Validators.PasswordValidator, [68](#)
 - IsValid, [68](#)
- CRUDWebApp, [1](#)
- DecrementSkip
 - FrontEnd.Pages.ContactList, [35](#)
- DeleteContact
 - CRUDService.Controllers.ContactController, [27](#)
 - CRUDService.Repository.ContactRepository, [39](#)
 - CRUDService.Repository.IContactRepository, [55](#)
 - CRUDService.Service.ContactService, [45](#)
 - CRUDService.Service.IContactService, [60](#)
 - FrontEnd.Pages.ContactDetails, [31](#)
 - FrontEnd.Pages.ContactList, [35](#)
- FindAllCategories
 - CRUDService.Repository.ContactRepository, [39](#)
 - CRUDService.Repository.IContactRepository, [55](#)
 - CRUDService.Service.ContactService, [45](#)
 - CRUDService.Service.IContactService, [61](#)
- FindAllContacts
 - CRUDService.Repository.ContactRepository, [40](#)
 - CRUDService.Repository.IContactRepository, [56](#)
 - CRUDService.Service.ContactService, [46](#)
 - CRUDService.Service.IContactService, [61](#)
- FindAllSubCategories
 - CRUDService.Repository.ContactRepository, [40](#)
 - CRUDService.Repository.IContactRepository, [56](#)
 - CRUDService.Service.ContactService, [46](#)
 - CRUDService.Service.IContactService, [61](#)
- FindAllSubCategoriesById
 - CRUDService.Repository.ContactRepository, [40](#)
 - CRUDService.Repository.IContactRepository, [56](#)
 - CRUDService.Service.ContactService, [46](#)
 - CRUDService.Service.IContactService, [61](#)
- FindCategoryNameById
 - CRUDService.Repository.ContactRepository, [41](#)
 - CRUDService.Repository.IContactRepository, [57](#)
 - CRUDService.Service.ContactService, [47](#)
 - CRUDService.Service.IContactService, [62](#)
- FindContactById
 - CRUDService.Repository.ContactRepository, [41](#)
 - CRUDService.Repository.IContactRepository, [57](#)
 - CRUDService.Service.ContactService, [47](#)
 - CRUDService.Service.IContactService, [62](#)
- FindUserEmailById
 - CRUDService.Repository.ContactRepository, [41](#)
 - CRUDService.Repository.IContactRepository, [57](#)
 - CRUDService.Service.ContactService, [47](#)
 - CRUDService.Service.IContactService, [62](#)
- FindUserPasswordHash
 - CRUDService.Repository.IUserRepository, [64](#)
 - CRUDService.Repository.UserRepository, [75](#)
 - CRUDService.Service.IUserService, [65](#)
 - CRUDService.Service.UserService, [76](#)
- FrontEnd, [13](#)
- FrontEnd.Models, [13](#)
- FrontEnd.Models.Category, [20](#)

- FrontEnd.Models.Contact, [22](#)
- FrontEnd.Models.CreateContactRequest, [49](#)
- FrontEnd.Models.DetailedContact, [50](#)
- FrontEnd.Models.GetContactResponse, [53](#)
- FrontEnd.Models.SubCategory, [70](#)
- FrontEnd.Models.UpdateContactRequest, [72](#)
- FrontEnd.Models.User, [73](#)
- FrontEnd.Pages, [14](#)
- FrontEnd.Pages.ContactAddView, [23](#)
 - LoadContent, [24](#)
 - OnInitializedAsync, [24](#)
 - OnParametersSetAsync, [24](#)
 - SaveContact, [24](#)
 - ValidateEmail, [24](#)
- FrontEnd.Pages.ContactDetails, [31](#)
 - DeleteContact, [31](#)
 - LoadContactList, [31](#)
 - OnParametersSetAsync, [32](#)
 - RedirectToEdit, [32](#)
- FrontEnd.Pages.ContactEditView, [32](#)
 - LoadContent, [33](#)
 - OnInitializedAsync, [33](#)
 - OnParametersSetAsync, [34](#)
 - RedirectToDetails, [34](#)
 - SaveContact, [34](#)
 - ValidateEmail, [34](#)
- FrontEnd.Pages.ContactList, [35](#)
 - DecrementSkip, [35](#)
 - DeleteContact, [35](#)
 - IncrementSkip, [36](#)
 - LoadContactList, [36](#)
 - OnInitializedAsync, [36](#)
 - RedirectToDetails, [36](#)
 - RedirectToEdit, [37](#)
- FrontEnd.Pages.Login, [67](#)
 - Login, [67](#)
 - OnInitializedAsync, [67](#)
- FrontEnd.Services, [14](#)
- FrontEnd.Services.AuthService, [18](#)
 - InitializeAsync, [18](#)
 - Logout, [18](#)
 - SetToken, [19](#)
- FrontEnd.Validators, [14](#)
- FrontEnd.Validators.PasswordValidator, [69](#)
 - IsValid, [69](#)
- GenerateJwtToken
 - CRUDService.Service.IUserService, [66](#)
 - CRUDService.Service.UserService, [77](#)
- GetCategories
 - CRUDService.Controllers.ContactController, [29](#)
- GetContact
 - CRUDService.Controllers.ContactController, [29](#)
- GetContacts
 - CRUDService.Controllers.ContactController, [29](#)
- GetSubAllCategories
 - CRUDService.Controllers.ContactController, [29](#)
- GetSubCategories
 - CRUDService.Controllers.ContactController, [30](#)
- IncrementSkip
 - FrontEnd.Pages.ContactList, [36](#)
- InitializeAsync
 - FrontEnd.Services.AuthService, [18](#)
- IsValid
 - CRUDService.Validators.PasswordValidator, [68](#)
 - FrontEnd.Validators.PasswordValidator, [69](#)
- LoadContactList
 - FrontEnd.Pages.ContactDetails, [31](#)
 - FrontEnd.Pages.ContactList, [36](#)
- LoadContent
 - FrontEnd.Pages.ContactAddView, [24](#)
 - FrontEnd.Pages.ContactEditView, [33](#)
- Login
 - FrontEnd.Pages.Login, [67](#)
- Logout
 - FrontEnd.Services.AuthService, [18](#)
- OnInitializedAsync
 - FrontEnd.Pages.ContactAddView, [24](#)
 - FrontEnd.Pages.ContactEditView, [33](#)
 - FrontEnd.Pages.ContactList, [36](#)
 - FrontEnd.Pages.Login, [67](#)
- OnModelCreating
 - CRUDService.Data.AppDbContext, [15](#)
- OnParametersSetAsync
 - FrontEnd.Pages.ContactAddView, [24](#)
 - FrontEnd.Pages.ContactDetails, [32](#)
 - FrontEnd.Pages.ContactEditView, [34](#)
- RedirectToDetails
 - FrontEnd.Pages.ContactEditView, [34](#)
 - FrontEnd.Pages.ContactList, [36](#)
- RedirectToEdit
 - FrontEnd.Pages.ContactDetails, [32](#)
 - FrontEnd.Pages.ContactList, [37](#)
- SaveContact
 - FrontEnd.Pages.ContactAddView, [24](#)
 - FrontEnd.Pages.ContactEditView, [34](#)
- SetToken
 - FrontEnd.Services.AuthService, [19](#)
- UpdateContact
 - CRUDService.Controllers.ContactController, [30](#)
 - CRUDService.Repository.ContactRepository, [42](#)
 - CRUDService.Repository.IContactRepository, [58](#)
 - CRUDService.Service.ContactService, [48](#)
 - CRUDService.Service.IContactService, [63](#)
- UserRepository
 - CRUDService.Repository.UserRepository, [74](#)
- UserService
 - CRUDService.Service.UserService, [76](#)
- ValidateEmail
 - FrontEnd.Pages.ContactAddView, [24](#)
 - FrontEnd.Pages.ContactEditView, [34](#)
- VerifyPassword
 - CRUDService.Service.IUserService, [66](#)
 - CRUDService.Service.UserService, [77](#)