SMP BANK - Russia, Moscow (http://smpbank.ru/en).

Project of ABS (internal automated banking system): development UI based on Angular 2 (typescript, PrimeNG components, webpack 2), web services for UI based on asp.net web api (c#).

Content:

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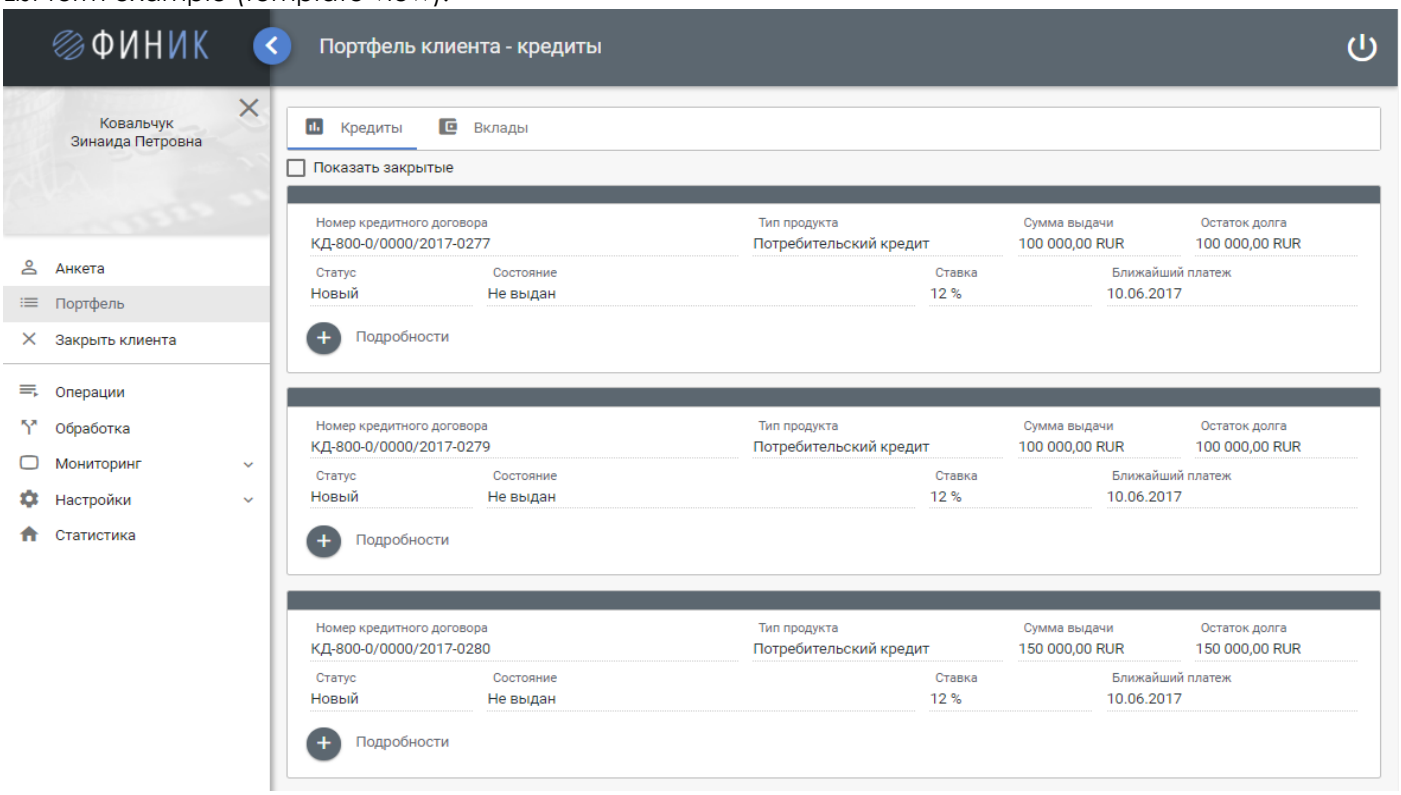
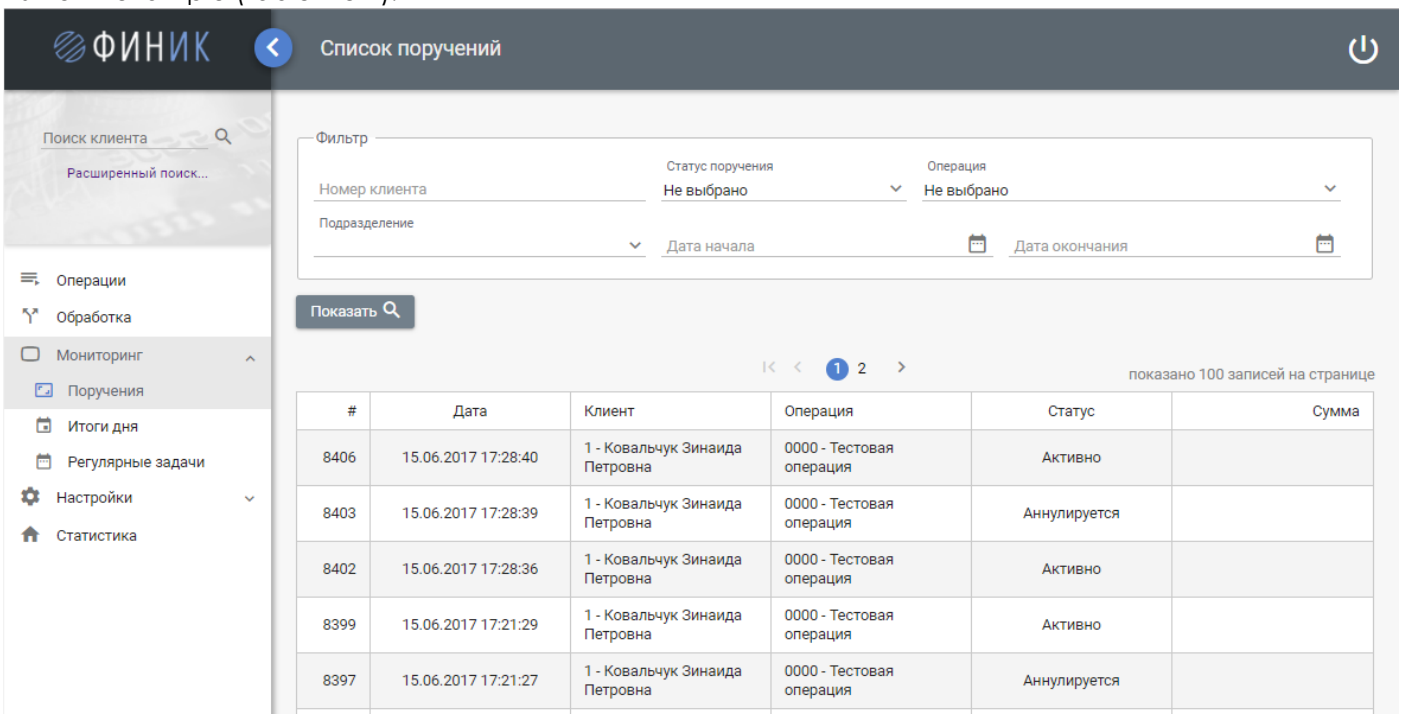
1. *UI screenshots*

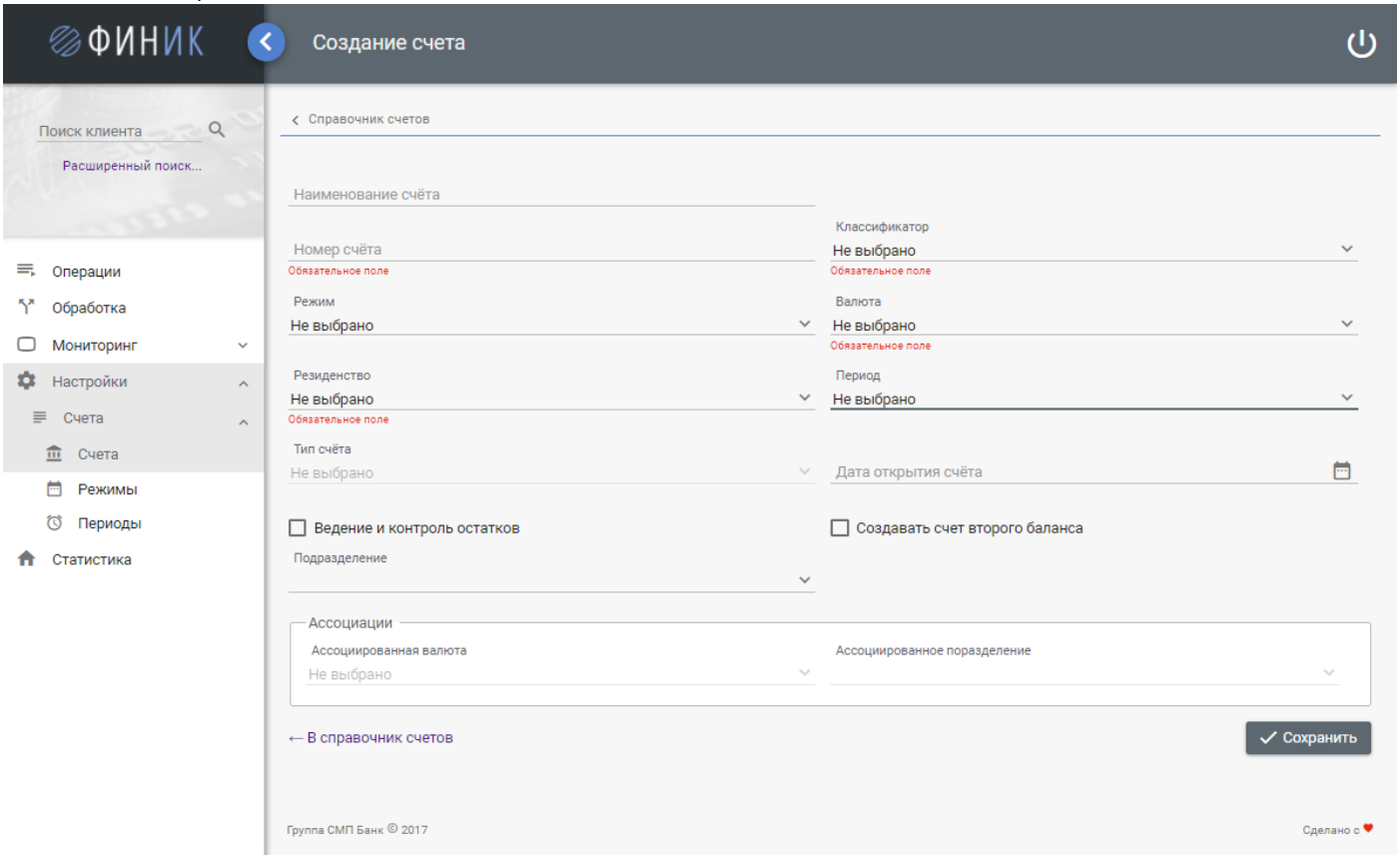
List form example (template view):



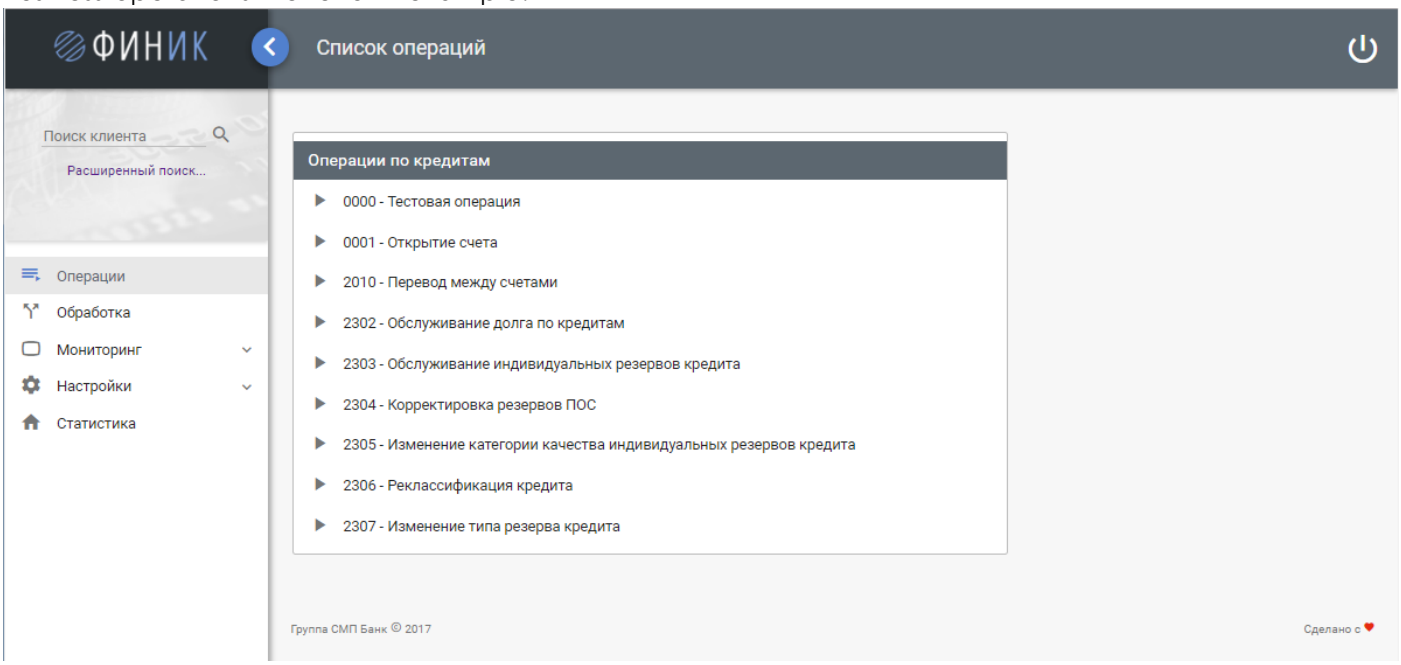
List form example (table view):



Edit form example:

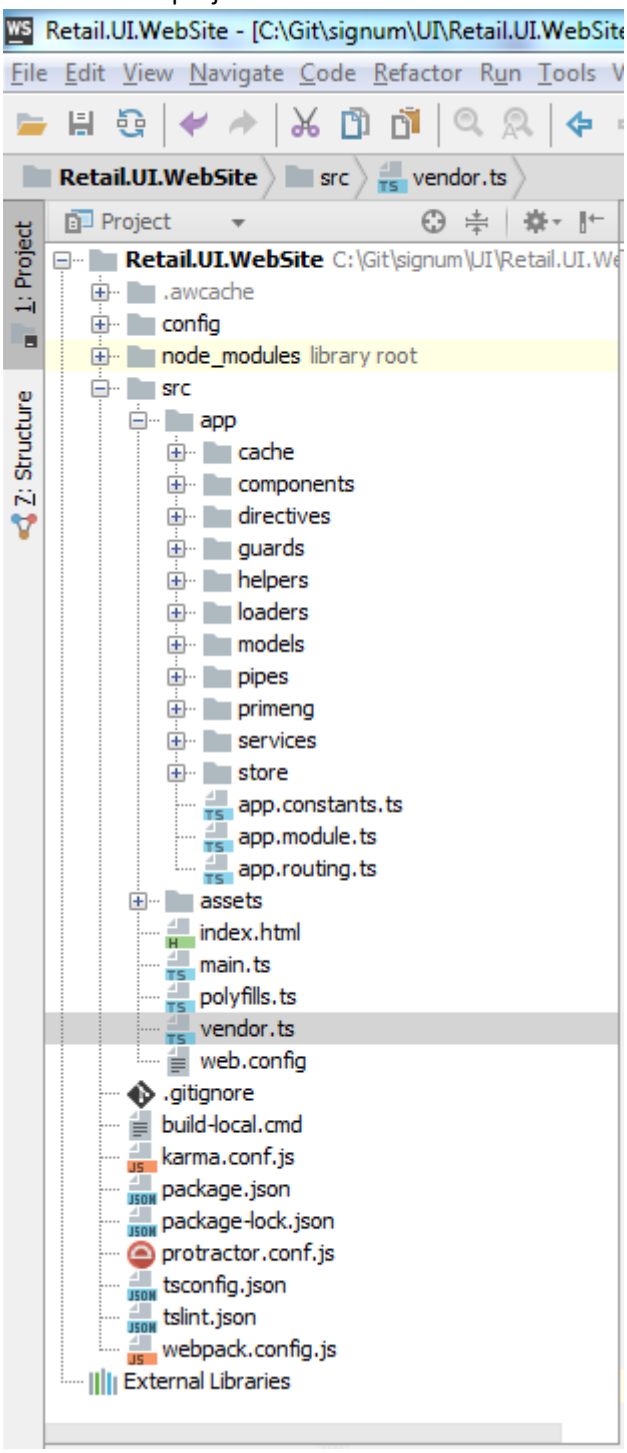


Business-operations menu form example:

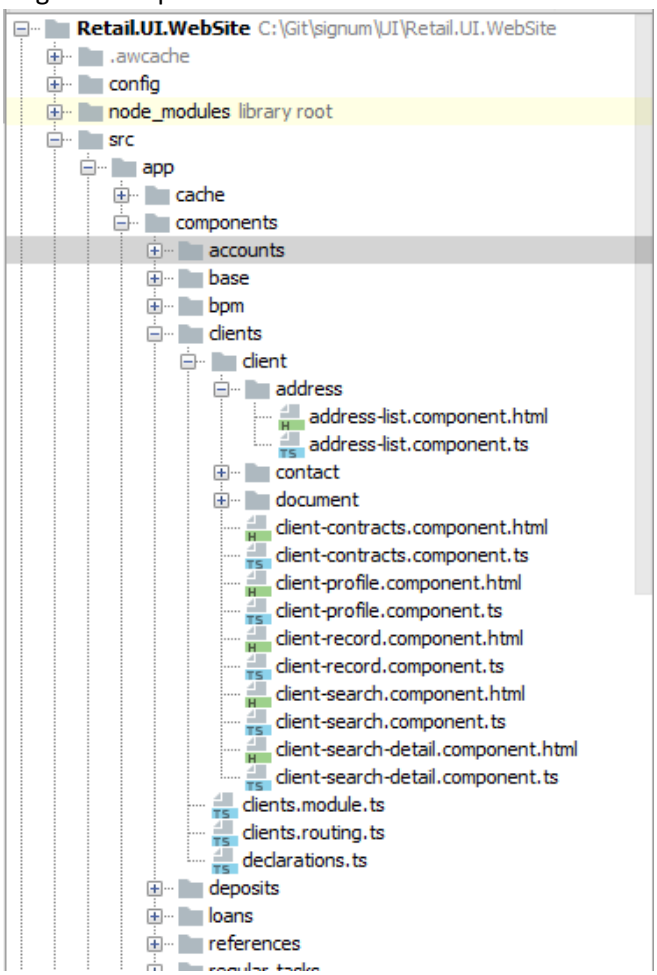


2. *Project structure*

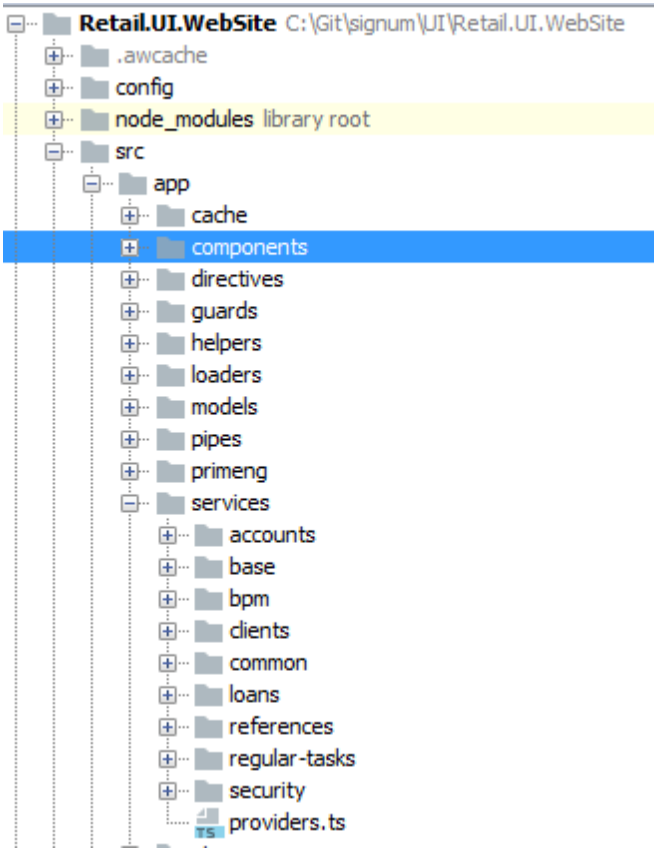
WebStorm UI project structure:



Angular Components structure:



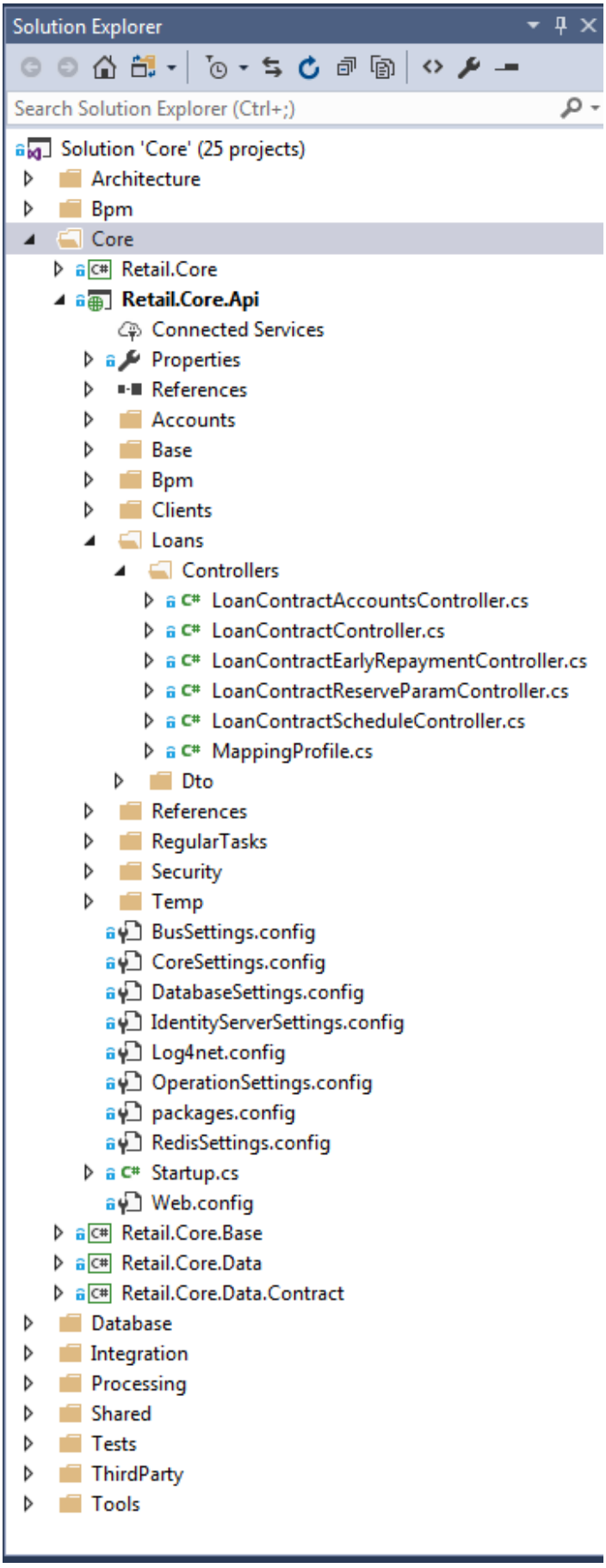
Angular Services structure:



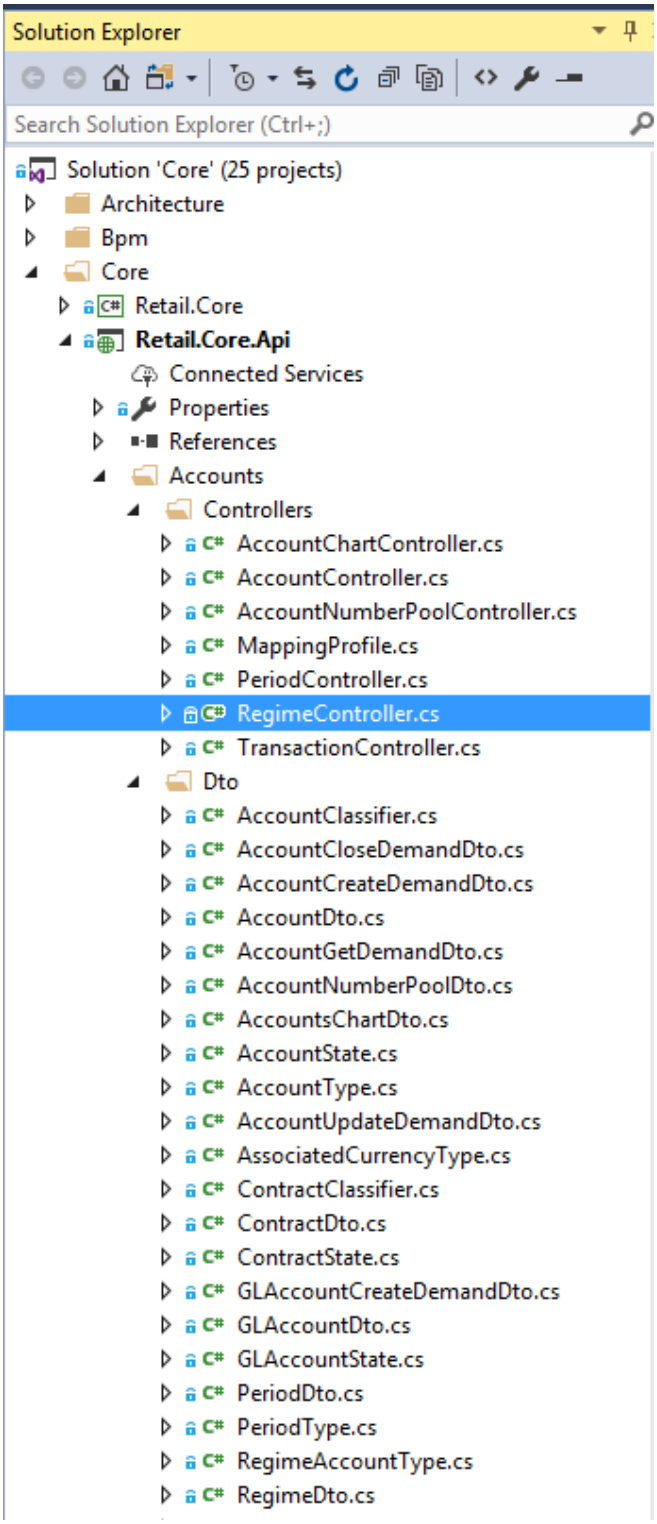
Angular Service code example:

```
import { Injectable } from '@angular/core';
import { ApiService } from '../common/api.service';

import { AccountGetDemand } from '../../models/accounts/account-get-demand';
import { Account } from '../../models/accounts/account';
import { AccountCreateDemand } from '../../models/accounts/account-create-demand';
import { AccountCloseDemand } from '../../models/accounts/account-close-demand';
import { AccountUpdateDemand } from '../../models/accounts/account-update-demand';

const apiRoutePrefix = 'api/accounts/account';

/** Api for technical accounts */
@Injectable()
export class AccountService {

  constructor(private apiService: ApiService) {
  }

  /** return entity list by filter */
  public list(filter: AccountGetDemand): Promise<Account[]> {
    return this.apiService.post({
      urlParts: [apiRoutePrefix, 'list'],
      data: filter,
      metadata: {type: AccountGetDemand},
      result: {type: Array, elements: {type: Account}},
    });
  }

  /** return entity by id */
  public detail(id: number): Promise<Account> {
    return this.apiService.get({
      urlParts: [apiRoutePrefix, 'detail', id],
      result: {type: Account},
    });
  }

  /** create entity */
  public create(entity: AccountCreateDemand): Promise<Account> {
    return this.apiService.post({
      urlParts: [apiRoutePrefix, 'create'],
      data: entity,
      metadata: {type: AccountCreateDemand},
      result: {type: Account},
    });
  }

  /** delete entity */
  public remove(id: number): Promise<void> {
    return this.apiService.post({
      urlParts: [apiRoutePrefix, 'remove', id],
    });
  }

  /** specialized operation - close entity */
  public close(entity: AccountCloseDemand): Promise<Account> {
    return this.apiService.post({
      urlParts: [apiRoutePrefix, 'close'],
      data: entity,
      metadata: {type: AccountCloseDemand},
      result: {type: Account},
    });
  }

  /** update entity */
  public update(entity: AccountUpdateDemand): Promise<Account> {
    return this.apiService.post({
      urlParts: [apiRoutePrefix, 'update'],
      data: entity,
      metadata: {type: AccountUpdateDemand},
      result: {type: Account},
    });
  }
}
```

Web-api service project structure (controllers):



Web-api service project structure (DTO):



Web-api service code example:

```
using System;
using System.Threading.Tasks;
using System.Web.Http;
using AutoMapper;
using log4net;
using Retail.Core.Accounts.Data;
using Retail.Core.Accounts.Services;
using Retail.Core.Api.Accounts.Dto;
using Retail.Core.Api.Base.Controllers;

namespace Retail.Core.Api.Accounts.Controllers
{
        /// <summary> Api режимов счетов </summary>
        [RoutePrefix("api/accounts/regime")]
        public class RegimeController : RetailApiControllerBase
        {
                private readonly IRegimeService _service;
                private readonly ILog _log = LogManager.GetLogger(typeof(Startup));

                public RegimeController(IRegimeService service)
                {
                        _service = service;
                }

                /// <summary> Возвращает список сущностей </summary>
                [HttpGet]
                [Route("list")]
                public async Task<RegimeDto[]> List()
                {
                        return await Task.Run<RegimeDto[]>(() =>
                        {
                                try
                                {
                                        //throw new Exception("Веб-сервис вернул Exception");

                                        var result = _service.GetAll();
                                        return Mapper.Map<RegimeDto[]>(result);
                                }
                                catch (Exception e)
                                {
                                        throw HttpResponseException(e);
                                }
                        });
                }

                /// <summary> Возвращает заданную сущность </summary>
                [HttpGet]
                [Route("detail/{id}")]
                public async Task<RegimeDto> Detail([FromUri] int id)
                {
                        return await Task.Run<RegimeDto>(() =>
```

```
                {
                        try
                        {
                                //throw new Exception("Веб-сервис вернул Exception");

                                var result = _service.Get(id);
                                return Mapper.Map<RegimeDto>(result);
                        }
                        catch (Exception e)
                        {
                                throw HttpResponseException(e);
                        }
                });
        }

        /// <summary> Обновляет сущность </summary>
        [HttpPost]
        [Route("update")]
        public async Task<RegimeDto> Update([FromBody] RegimeDto regimeDto)
        {
                return await Task.Run<RegimeDto>(() =>
                {
                        try
                        {
                                //throw new Exception("Веб-сервис вернул Exception");

                                /*
                                throw new UserException(new List<UserMessage>()
                                {
new UserMessage(fieldName: "Name", message: "Наименование - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MinLengthDays", message: "MinLengthDays - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MinLengthMonths", message: "MinLengthMonths - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MaxLengthDays", message: "MaxLengthDays - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MaxLengthMonths", message: "MaxLengthMonths - Validation error", level: UserMessage.MessageLevel.Error, code: "0")
                                });
                                */

                                var regimeInput = Mapper.Map<Regime>(regimeDto);
                                var regimeOutput = _service.Update(regimeInput);
                                var regimeDtoOutput = Mapper.Map<RegimeDto>(regimeOutput);
                                return regimeDtoOutput;
                        }
                        catch (Exception e)
                        {
                                throw HttpResponseException(e);
                        }
                });
        }

        /// <summary> Создаёт сущность </summary>
        [HttpPost]
        [Route("create")]
        //[ResponseType(typeof(RegimeDto))]
        //public async Task<IHttpActionResult> Create([FromBody] RegimeDto regimeDto)
```

```
		public async Task<RegimeDto> Create([FromBody] RegimeDto regimeDto)
		{
			return await Task.Run<RegimeDto>(() =>
			{
				try
				{
					//throw new Exception("Веб-сервис вернул Exception");

					/*
					throw new UserException(new List<UserMessage>()
					{
new UserMessage(fieldName: "Name", message: "Наименование - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MinLengthDays", message: "MinLengthDays - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MinLengthMonths", message: "MinLengthMonths - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MaxLengthDays", message: "MaxLengthDays - Validation error", level: UserMessage.MessageLevel.Error, code: "0"),
new UserMessage(fieldName: "MaxLengthMonths", message: "MaxLengthMonths - Validation error", level: UserMessage.MessageLevel.Error, code: "0")
					});
					*/

					var regimeInput = Mapper.Map<Regime>(regimeDto);
					var regimeOutput = _service.Create(regimeInput);
					var regimeDtoOutput = Mapper.Map<RegimeDto>(regimeOutput);

					return regimeDtoOutput;
				}
				catch (Exception e)
				{
					throw HttpResponseException(e);
				}
			});
		}

		/// <summary> Удаляет сущность </summary>
		[HttpPost]
		[Route("remove/{id}")]
		public async Task Remove([FromUri] int id)
		{
			await Task.Run(() =>
			{
				try
				{
					_service.Delete(id);
				}
				catch (Exception e)
				{
					throw HttpResponseException(e);
				}
			});
		}
	}
}
```

Web-api DTO code example:

```
using System.Collections.Generic;
using System.ComponentModel.DataAnnotations;
using Retail.Core.Api.References.Dto;

namespace Retail.Core.Api.Accounts.Dto
{
	/// <summary>
	/// Определение ограничений счетов
	/// </summary>
	public class RegimeDto
	{
		#region Simple columns

		/// <summary>
		/// ИД
		/// </summary>
		[Display(Name = "ИД"), Required]
		public int Id { get; set; } // int

		/// <summary>
		/// Наименование
		/// </summary>
		[Display(Name = "Наименование"), MaxLength(500), Required]
		public string Name { get; set; } // varchar(500)

		/// <summary>
		/// Счёт: Уровень организационной структуры
		/// </summary>
		[Display(Name = "Счёт: Уровень организационной структуры"), Required]
		public OrgUnitType OrgUnitType { get; set; } // smallint

		/// <summary>
		/// Счёт: Классификатор (клиентский, системный и т.д.)
		/// </summary>
		[Display(Name = "Счёт: Классификатор (клиентский, системный и т.д.)"), Required]
		public AccountClassifier AccountClassifier { get; set; } // smallint

		/// <summary>
		/// Счёт: Резиденство
		/// </summary>
		[Display(Name = "Счёт: Резиденство"), Required]
		public RegimeResidenceType AccountResidenceType { get; set; } // smallint
```

```
/// <summary>
/// Счёт: Тип (Активный/Пасивный)
/// </summary>
[Display(Name = "Счёт: Тип (Активный/Пасивный)"), Required]
public RegimeAccountType AccountType { get; set; } // smallint

/// <summary>
/// Счёт:  Уникален ли по характеристикам
/// </summary>
[Display(Name = "Счёт:  Уникален ли по характеристикам"), Required]
public bool IsAccountUnique { get; set; } // bit

/// <summary>
/// Счёт: Маска наименования
/// </summary>
[Display(Name = "Счёт: Маска наименования"), MaxLength(100)]
public string AccountNameMask { get; set; } // varchar(100)

/// <summary>
/// Доступен
/// </summary>
[Display(Name = "Доступен"), Required]
public bool IsEnabled { get; set; } // bit

/// <summary>
/// Связанный объект: Устанавливается ли валюта
/// </summary>
[Display(Name = "Связанный объект: Устанавливается ли валюта"), Required]
public bool SetAssociatedCurrency { get; set; } // bit

/// <summary>
/// Связанный объект: Уровень организационной структуры
/// </summary>
[Display(Name = "Связанный объект: Уровень организационной структуры")]
public OrgUnitType? AssociatedOrgUnitType { get; set; } // smallint

#endregion

#region Relations

/// <summary>
/// План счетов для режима
/// </summary>
[Display(Name = "План счетов для режима")]
public IEnumerable<int> RegimesAccountsChart { get; set; }
```

```
            /// <summary>
            /// Валюты для режима
            /// </summary>
            [Display(Name = "Валюты для режима")]
            public IEnumerable<int> RegimesCurrencies { get; set; }

            #endregion
        }
}
```