**МИНИСТЕРСТВО ОБРАЗОВАНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ**

**УЧРЕЖДЕНИЕ ОБРАЗОВАНИЯ**

**ГОМЕЛЬСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ ИМЕНИ П. О. СУХОГО**

Факультет автоматизированных и информационных систем

Кафедра «Информационные технологии»

**ЛАБОРАТОРНАЯ РАБОТА №3**

по дисциплине: «Разработка приложений баз данных для информационных систем»

на тему: «Обработка *HTTP* запросов средствами *ASP.NET Core*. Сохранение состояния. Кэширование.»

Выполнил: студент гр. ИТП-31

Король В. Н.

Принял: ректор

Асенчик О.Д.

Гомель 2023

**Цель работы:** ознакомиться c методами обработкой *HTTP* средствами *ASP*.*NET* *Core*, методами сохранения состояния приложения и повышение производительности приложений путем использования разных видов кэширования.

**Задание:**

Используя ранее разработанные объектную модель для доступа к данным в заданной предметной области разработать простое *ASP*.*NET* *Core* приложение.

2.1. С использование методов *Run*, *Map* и *Use* разработать:

1. компоненты промежуточного уровня (middleware) и встроить их в конвейер обработки *HTTP* запроса с целью кэширования 20 записей из каждой таблицы базы данных заданной предметной области с помощью встроенного инструмента кэширования ­­­­­­­­­­– объекта IMemoryCache. Данные в кэше хранить неизменными в течение 2\**N+*240 секунд, где *N* – номер вашего варианта.

2. собственную систему маршрутизации входящих запросов:

• если *URL* адрес входящего запроса содержит \*info* – выводить в выходной поток для отображения браузером информацию о клиенте и выходить из конвейера обработки запроса;

• если *URL* адрес входящего запроса содержит \*table* (где *table* – имя таблицы из базы данных) – выводить в выходной поток для отображения браузером с использование метода *Response*.*WriteAsync* кэшированную информацию из соответствующей таблицы базы данных и выходить из конвейера обработки запроса;

• если *URL* адрес входящего запроса содержит \*searchform1* или \*searchform2* – выводить в выходной поток для отображения браузером с использование метода *Response*.*WriteAsync* формы для поиска информации из базы данных и выходить из конвейера обработки запроса;

форма должна содержать, как минимум: одно поле, одного поле со списком, один список, одну кнопку;

• в противном случае (*URL* адрес входящего запроса не содержит перечисленных выше элементов) – продолжать обрабатывать другие компоненты конвейера обработки запросов;

2.2. Реализовать сохранение состояния элементов одной формы одной страницы с использованием куки (\*searchform1*).

2.3. Реализовать сохранение состояния элементов одной формы одной страницы в виде одного объекта специальной структуры с использованием объекта *Session* (\*searchform2*).

2.4. Осуществить заполнение элементов формы при их загрузке данными ранее сохранненными в объекте *Session* и куки (\*searchform1*, \*searchform2*).

2.5. С использованием средств разработчика браузера (*Chrome*, *Firefox*) продемонстрировать ускорение обработки запроса при наличии кэширования с использованием *MemoryCache*.

2.6. Разместить выполненный проект на *github*.

**Ход работы**

В первую очередь при выполнении лабораторной работы база данных созданная в первой лабораторной работе была перенесена в проект при помощи технологии *ENTITY FRAMEWORK*. После перенесения базы в проект были сгенерированы классы моделей и класс контекста. Далее после подключения *Entity Framework* строка подключения была перенесена в конфигурационный файл *appsetings.json* далее при помощи класса *WebApplicationBuilder* файл контекста был внедрен в при помощи *DI* в главный класс проекта. Теперь для обращения к базе данных будет использоваться один объект класса контекста.

Далее после подключения базы данных к проекту был создан класс *InsuranceCompanyСache* который используется для кэширования запросов к базе данных. Для этого был создан метод *GetEntities* который принимает входные параметры назван

**Вывод**: в ходе выполнения лабораторной работы была изучена такая технология *ASP .NET* для создания веб приложений. Была изучена технология кэширования данных при помощи интерфейса *IMemoryCache.* Были изучены механизмы обработки запросов при помощи класса *HttpContext.* Были изучены методы сохранения данных во временное хранилище при помощи технологии *Sessions* и *Cookies.*

**ПРИЛОЖНИЕ А**

Листинг класса *InsuranceCompanyContext*

using lab3.Models;

using Microsoft.EntityFrameworkCore;

namespace lab3.Data;

public partial class InsuranceCompanyContext : DbContext

{

public static List<string> DbSetNames = new InsuranceCompanyContext()

.GetType()

.GetProperties()

.Where(p => p.PropertyType.IsGenericType && p.PropertyType.GetGenericTypeDefinition() == typeof(DbSet<>))

.Select(p => p.Name)

.ToList();

public InsuranceCompanyContext()

{

}

public InsuranceCompanyContext(DbContextOptions<InsuranceCompanyContext> options)

: base(options)

{

}

public virtual DbSet<AgentType> AgentTypes { get; set; }

public virtual DbSet<Client> Clients { get; set; }

public virtual DbSet<Contract> Contracts { get; set; }

public virtual DbSet<InsuranceAgent> InsuranceAgents { get; set; }

public virtual DbSet<InsuranceCase> InsuranceCases { get; set; }

public virtual DbSet<InsuranceType> InsuranceTypes { get; set; }

public virtual DbSet<Policy> Policies { get; set; }

public virtual DbSet<PolicyInsuranceCase> PolicyInsuranceCases { get; set; }

public virtual DbSet<SupportingDocument> SupportingDocuments { get; set; }

protected override void OnModelCreating(ModelBuilder modelBuilder)

{

modelBuilder.Entity<AgentType>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_AgentTyp\_\_3214EC075CDF68EC");

entity.Property(e => e.Type)

.HasMaxLength(50)

.IsFixedLength();

});

modelBuilder.Entity<Client>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Clients\_\_3214EC0743EDA985");

entity.Property(e => e.Apartment).HasMaxLength(50);

entity.Property(e => e.Birthdate).HasColumnType("date");

entity.Property(e => e.City).HasMaxLength(50);

entity.Property(e => e.House).HasMaxLength(50);

entity.Property(e => e.MiddleName).HasMaxLength(20);

entity.Property(e => e.MobilePhone).HasMaxLength(20);

entity.Property(e => e.Name).HasMaxLength(20);

entity.Property(e => e.PassportIdentification)

.HasMaxLength(14)

.IsFixedLength();

entity.Property(e => e.PassportIssueDate).HasColumnType("date");

entity.Property(e => e.PassportNumber)

.HasMaxLength(9)

.IsFixedLength();

entity.Property(e => e.Street).HasMaxLength(50);

entity.Property(e => e.Surname).HasMaxLength(20);

});

modelBuilder.Entity<Contract>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Contract\_\_3214EC071E24DAA3");

entity.Property(e => e.EndDeadline).HasColumnType("date");

entity.Property(e => e.Responsibilities).HasMaxLength(100);

entity.Property(e => e.StartDeadline).HasColumnType("date");

});

modelBuilder.Entity<InsuranceAgent>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Insuranc\_\_3214EC071B7233A7");

entity.Property(e => e.MiddleName).HasMaxLength(20);

entity.Property(e => e.Name).HasMaxLength(20);

entity.Property(e => e.Salary).HasColumnType("money");

entity.Property(e => e.Surname).HasMaxLength(20);

entity.HasOne(d => d.AgentTypeNavigation).WithMany(p => p.InsuranceAgents)

.HasForeignKey(d => d.AgentType)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_InsuranceAgents\_AgentTypes");

entity.HasOne(d => d.ContractNavigation).WithMany(p => p.InsuranceAgents)

.HasForeignKey(d => d.Contract)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_InsuranceAgents\_Contracts");

});

modelBuilder.Entity<InsuranceCase>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Insuranc\_\_3214EC07245436C3");

entity.Property(e => e.Date).HasColumnType("date");

entity.Property(e => e.Description).HasColumnType("text");

entity.Property(e => e.InsurancePayment).HasColumnType("money");

entity.HasOne(d => d.ClientNavigation).WithMany(p => p.InsuranceCases)

.HasForeignKey(d => d.Client)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_InsuranceCases\_Clients");

entity.HasOne(d => d.InsuranceAgentNavigation).WithMany(p => p.InsuranceCases)

.HasForeignKey(d => d.InsuranceAgent)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_InsuranceCases\_InsuranceAgents");

entity.HasOne(d => d.SupportingDocumentNavigation).WithMany(p => p.InsuranceCases)

.HasForeignKey(d => d.SupportingDocument)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_InsuranceCases\_SupportingDocuments");

});

modelBuilder.Entity<InsuranceType>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Insuranc\_\_3214EC0795A5D734");

entity.Property(e => e.Description).HasColumnType("text");

entity.Property(e => e.Name).HasMaxLength(100);

});

modelBuilder.Entity<Policy>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Policies\_\_3214EC0721D8E412");

entity.Property(e => e.ApplicationDate).HasColumnType("date");

entity.Property(e => e.PolicyNumber)

.HasMaxLength(16)

.IsFixedLength();

entity.Property(e => e.PolicyPayment).HasColumnType("money");

entity.HasOne(d => d.ClientNavigation).WithMany(p => p.Policies)

.HasForeignKey(d => d.Client)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_Policies\_Clients");

entity.HasOne(d => d.InsuranceAgentNavigation).WithMany(p => p.Policies)

.HasForeignKey(d => d.InsuranceAgent)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_Policies\_InsuranceAgents");

entity.HasOne(d => d.InsuranceTypeNavigation).WithMany(p => p.Policies)

.HasForeignKey(d => d.InsuranceType)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_Policies\_InsuranceTypes");

});

modelBuilder.Entity<PolicyInsuranceCase>(entity =>

{

entity.HasNoKey();

entity.HasOne(d => d.InsuranceCase).WithMany()

.HasForeignKey(d => d.InsuranceCaseId)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_PolicyInsuranceCases\_InsuranceCases");

entity.HasOne(d => d.Policy).WithMany()

.HasForeignKey(d => d.PolicyId)

.OnDelete(DeleteBehavior.ClientSetNull)

.HasConstraintName("FK\_PolicyInsuranceCases\_Policies");

});

modelBuilder.Entity<SupportingDocument>(entity =>

{

entity.HasKey(e => e.Id).HasName("PK\_\_Supporti\_\_3214EC07C5B6BCD5");

entity.Property(e => e.Description).HasColumnType("text");

entity.Property(e => e.Name).HasMaxLength(100);

});

OnModelCreatingPartial(modelBuilder);

}

partial void OnModelCreatingPartial(ModelBuilder modelBuilder);

}

Листинг класса *InsuranceCompanyFactory*

using lab3.Models;

namespace lab3.Data {

public static class InsuranceCompanyFactory {

public static IEnumerable<IEntity> GetEnites(string entityName, InsuranceCompanyContext db) {

switch (entityName) {

case "AgentTypes":

return db.AgentTypes;

case "Clients":

return db.Clients;

case "Contracts":

return db.Contracts;

case "InsuranceAgents":

return db.InsuranceAgents;

case "InsuranceCases":

return db.InsuranceCases;

case "InsuranceTypes":

return db.InsuranceTypes;

case "Policies":

return db.Policies;

case "PolicyInsuranceCases":

return db.PolicyInsuranceCases;

case "SupportingDocuments":

return db.SupportingDocuments;

}

return null;

}

}

}

Листинг класса *InsuranceCompanyСache*

using lab3.Models;

using Microsoft.Extensions.Caching.Memory;

namespace lab3.Data

{

public class InsuranceCompanyСache

{

private IMemoryCache \_cache;

private InsuranceCompanyContext \_db;

private const int CACHE\_SAVE\_TIME = 2 \* 16 + 240;

public InsuranceCompanyСache(InsuranceCompanyContext db, IMemoryCache memoryCache)

{

\_db = db;

\_cache = memoryCache;

}

public IEnumerable<IEntity> GetEnites(string entityName, int rowCount = 20)

{

\_cache.TryGetValue(entityName, out IEnumerable<IEntity>? entities);

if (entities is null)

{

entities = InsuranceCompanyFactory.GetEnites(entityName, \_db).Take(rowCount);

\_cache.Set($"{entityName}{rowCount}", entities, new MemoryCacheEntryOptions().SetAbsoluteExpiration(TimeSpan.FromSeconds(CACHE\_SAVE\_TIME)));

}

return entities;

}

}

}

Листинг класса *CacheFilter*

using lab3.Models;

using Microsoft.IdentityModel.Tokens;

namespace lab3.Services

{

public class CacheFilter : IFilterVisitor {

public IEnumerable<AgentType> Filter(IEnumerable<AgentType> agentTypes, AgentType agentType) {

return agentTypes.Where(e => agentType.Type.IsNullOrEmpty() || e.Type.Trim() == agentType.Type.Trim());

}

public IEnumerable<Client> Filter(IEnumerable<Client> clients, Client client) {

return clients.Where(e => client.Name.IsNullOrEmpty() || e.Name.Trim() == client.Name.Trim());

}

public IEnumerable<Contract> Filter(IEnumerable<Contract> contracts, Contract contract) {

return contracts.Where(e => contract.Responsibilities.IsNullOrEmpty() || e.Responsibilities.Trim() == contract.Responsibilities.Trim());

}

public IEnumerable<InsuranceAgent> Filter(IEnumerable<InsuranceAgent> insuranceAgents, InsuranceAgent insuranceAgent) {

return insuranceAgents.Where(e => insuranceAgent.Salary == 0|| e.Salary > insuranceAgent.Salary);

}

public IEnumerable<InsuranceCase> Filter(IEnumerable<InsuranceCase> insuranceCases, InsuranceCase insuranceCase) {

return insuranceCases.Where(e => insuranceCase.InsurancePayment == 0 || e.InsurancePayment > insuranceCase.InsurancePayment);

}

public IEnumerable<InsuranceType> Filter(IEnumerable<InsuranceType> insuranceTypes, InsuranceType insuranceType) {

return insuranceTypes.Where(e => insuranceType.Name.IsNullOrEmpty() || e.Name.Trim() == insuranceType.Name.Trim());

}

public IEnumerable<Policy> Filter(IEnumerable<Policy> policies, Policy policy) {

return policies.Where(e => policy.PolicyPayment == 0 || e.PolicyPayment > policy.PolicyPayment);

}

public IEnumerable<PolicyInsuranceCase> Filter(IEnumerable<PolicyInsuranceCase> policyInsuranceCases, PolicyInsuranceCase policyInsuranceCase) {

return policyInsuranceCases.Where(e => policyInsuranceCase.PolicyId == 0 || e.PolicyId > policyInsuranceCase.PolicyId);

}

public IEnumerable<SupportingDocument> Filter(IEnumerable<SupportingDocument> supportingDocuments, SupportingDocument supportingDocument) {

return supportingDocuments.Where(e => supportingDocument.Name.IsNullOrEmpty() || e.Name.Trim() == supportingDocument.Name.Trim());

}

}

}

Листинг класса *IFilterVisitor*

using lab3.Models;

namespace lab3.Services

{

public interface IFilterVisitor

{

IEnumerable<AgentType> Filter(IEnumerable<AgentType> agentTypes, AgentType agentType);

IEnumerable<Client> Filter(IEnumerable<Client> clients, Client client);

IEnumerable<Contract> Filter(IEnumerable<Contract> contracts, Contract contract);

IEnumerable<InsuranceAgent> Filter(IEnumerable<InsuranceAgent> insuranceAgents, InsuranceAgent insuranceAgent);

IEnumerable<InsuranceCase> Filter(IEnumerable<InsuranceCase> insuranceCases, InsuranceCase insuranceCase);

IEnumerable<InsuranceType> Filter(IEnumerable<InsuranceType> insuranceTypes, InsuranceType insuranceType);

IEnumerable<Policy> Filter(IEnumerable<Policy> policies, Policy policy);

IEnumerable<PolicyInsuranceCase> Filter(IEnumerable<PolicyInsuranceCase> policyInsuranceCases, PolicyInsuranceCase policyInsuranceCase);

IEnumerable<SupportingDocument> Filter(IEnumerable<SupportingDocument> supportingDocuments, SupportingDocument supportingDocument);

}

}

Листинг класса *InsuranceCompanyHandlers*

using lab3.Data;

using lab3.HtmlParsers;

using lab3.LocalStorage.Cookies;

using lab3.LocalStorage.Sessions;

using lab3.Services;

namespace lab3.Handlers

{

public class InsuranceCompanyHandlers

{

public async void GetInfoPage(HttpContext context)

{

string responseContent = new HtmlBuilder()

.SetTitile("Информация о запросе")

.AddRequestInfo(context.Request)

.AddBackMenuButton()

.Build();

await context.Response.WriteAsync(responseContent);

}

public async void GetMainPage(HttpContext context)

{

string header = "Главное меню";

var tables = new List<string>() {

"Таблица типов агентов", "Таблица клиентов", "Таблица контрактов",

"Таблица страховых агентов", "Таблица страховых случаев", "Таблица типов срахования",

"Таблица полисов", "Таблица страховых случаев с полисами", "Таблица дополнительных документов"

};

var search\_form1 = new List<string>() {

"search form1 типов агентов", "search form1 клиентов", "search form1 контрактов",

"search form1 страховых агентов", "search form1 страховых случаев", "search form1 типов срахования",

"search form1 полисов", "search form1 страховых случаев с полисами", "search form1 дополнительных документов"

};

var search\_form2 = new List<string>() {

"search form2 типов агентов", "search form2 клиентов", "search form2 контрактов",

"search form2 страховых агентов", "search form2 страховых случаев", "search form2 типов срахования",

"search form2 полисов", "search form2 страховых случаев с полисами", "search form2 дополнительных документов"

};

var tableNames = InsuranceCompanyContext.DbSetNames;

List<(string Value, string Url)> list = new() {

new ("Информация о запросе", "\\info")};

for (int i = 0; i < tableNames.Count; i++)

{

list.Add(new(tables[i], "\\table\_" + tableNames[i]));

}

for (int i = 0; i < tableNames.Count; i++)

{

list.Add(new(search\_form1[i], "\\search\_form1\_" + tableNames[i]));

}

for (int i = 0; i < tableNames.Count; i++)

{

list.Add(new(search\_form2[i], "\\search\_form2\_" + tableNames[i]));

}

string responseContent = new HtmlBuilder()

.SetTitile("Информация о запросе")

.AddListWithUrl(header, list)

.Build();

await context.Response.WriteAsync(responseContent);

}

public async void GetTablePage(HttpContext context, string tableName)

{

var cache = context.RequestServices.GetService<InsuranceCompanyСache>();

var entites = cache.GetEnites(tableName);

var responseContent = new HtmlBuilder()

.AddTable(entites)

.AddBackMenuButton()

.Build();

await context.Response.WriteAsync(responseContent);

}

public async void GetSearchForm1Page(HttpContext context, string tableName)

{

var cache = context.RequestServices.GetService<InsuranceCompanyСache>();

var sessionsVisitor = new SessionsVisitor();

var filter = new CacheFilter();

var entities = cache.GetEnites(tableName);

var entity = entities.FirstOrDefault().AcceptLocalData(sessionsVisitor, context);

entities = entity.AcceptFilter(filter, entities);

var responseContent = new HtmlBuilder()

.AddForm(entity, 1)

.AddTable(entities)

.AddBackMenuButton()

.Build();

await context.Response.WriteAsync(responseContent);

}

public async void GetSearchForm2Page(HttpContext context, string tableName)

{

var cache = context.RequestServices.GetService<InsuranceCompanyСache>();

var cookiesVisitor = new CookiesVisitor();

var filter = new CacheFilter();

var entities = cache.GetEnites(tableName);

var entity = entities.FirstOrDefault().AcceptLocalData(cookiesVisitor, context);

entities = entity.AcceptFilter(filter, entities);

var responseContent = new HtmlBuilder()

.AddForm(entity, 2)

.AddTable(entities)

.AddBackMenuButton()

.Build();

await context.Response.WriteAsync(responseContent);

}

}

}

Листинг класса *HtmlBuilder*

using lab3.Models;

using System.Text;

namespace lab3.HtmlParsers

{

public class HtmlBuilder

{

private string \_title = "default title";

private string \_body = "";

public HtmlBuilder SetTitile(string title)

{

\_title = title;

return this;

}

public HtmlBuilder AddRequestInfo(HttpRequest request)

{

var htmlRequestInfo = "<div style=\"text-align: center;\"><H1>Информация о клиенте</H1>";

htmlRequestInfo += $"<h3>Сервер: {request.Host}</h3>";

htmlRequestInfo += $"<h3>Путь: {request.PathBase}</h3>";

htmlRequestInfo += $"<h3>Протокол: {request.Protocol}</h3>";

htmlRequestInfo += $"<h3>Метод: {request.Method}</h3>";

htmlRequestInfo += $"<h3>Схема: {request.Scheme}</h3>";

\_body += htmlRequestInfo;

return this;

}

public HtmlBuilder AddBackMenuButton()

{

\_body += "<h3><a href=\"\\\">Главная</a></h3>";

return this;

}

public HtmlBuilder AddListWithUrl(string header, IEnumerable<(string Value, string Url)> itemsWithUrl)

{

var htmlList = $"<div style=\"text-align: center;\"><H1>{header}</H1><ul>";

foreach (var item in itemsWithUrl)

{

htmlList += $"<li><a href={item.Url}>{item.Value}</a></li>";

}

htmlList += "</ul>";

\_body += htmlList;

return this;

}

public HtmlBuilder AddTable(IEnumerable<IEntity> entities)

{

var htmlTable = "<div style =\"text-align: center;\"><table border='1'>";

var htmlParse = new HtmlTableVisitor();

foreach (var entity in entities)

{

htmlTable += entity.AcceptHtml(htmlParse);

}

htmlTable += "</table>";

\_body += htmlTable;

return this;

}

public HtmlBuilder AddForm(IEntity entity, int formType)

{

var htmlParser = new HtmlFormVisitor(formType);

var htmlForm = entity.AcceptHtml(htmlParser);

\_body += htmlForm;

return this;

}

public string Build()

{

var htmlPage = new StringBuilder();

htmlPage.Append($"<HTML><HEAD><TITLE>{\_title}</TITLE></HEAD><META http-equiv='Content-Type' content='text/html; charset=utf-8'/><BODY>");

htmlPage.Append(\_body);

htmlPage.Append("</div></BODY></HTML>");

return htmlPage.ToString();

}

}

}

Листинг класса *HtmlFormVisitor*

using lab3.Models;

namespace lab3.HtmlParsers

{

public class HtmlFormVisitor : IHtmlVisitor

{

private int \_formType;

public HtmlFormVisitor(int formType)

{

\_formType = formType;

}

public string Parse(AgentType agentType)

{

return

$"<form action='/search\_form{\_formType}\_AgentTypes' method='POST'>" +

$"Название: <input type='text' name='Type{\_formType}' value = '{agentType.Type}'>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(Client client)

{

return

$"<form action='/search\_form{\_formType}\_Clients' method='POST'>" +

$"Имя: <input type='text' name='ClientName{\_formType}' value = {client.Name}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(Contract contract)

{

return

$"<form action='/search\_form{\_formType}\_Contracts' method='POST'>" +

$"Ответственность: <input type='text' name='Responsibilities{\_formType}' value = {contract.Responsibilities}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(InsuranceAgent insuranceAgent)

{

return

$"<form action='/search\_form{\_formType}\_InsuranceAgents' method='POST'>" +

$"Зарплата: <input type='number' name='Salary{\_formType}' value = {insuranceAgent.Salary}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(InsuranceCase insuranceCase)

{

return

$"<form action='/search\_form{\_formType}\_InsuranceCases' method='POST'>" +

$"Страховая плата: <input type='number' name='InsurancePayment{\_formType}' value = {insuranceCase.InsurancePayment}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(InsuranceType insuranceType)

{

return

$"<form action='/search\_form{\_formType}\_InsuranceTypes' method='POST'>" +

$"название: <input type='text' name='InsuranceTypeName{\_formType}' value = {insuranceType.Name}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(Policy policy)

{

return

$"<form action='/search\_form{\_formType}\_Policies' method='POST'>" +

$"стоимость полиса: <input type='text' name='PolicyPayment{\_formType}' value = {policy.PolicyPayment}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(PolicyInsuranceCase policyInsuranceCase)

{

return

$"<form action='/search\_form{\_formType}\_PolicyInsuranceCases' method='POST'>" +

$"ID полиса: <input type='number' name='PolicyId{\_formType}' value = {policyInsuranceCase.PolicyId}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

public string Parse(SupportingDocument supportingDocument)

{

return

$"<form action='/search\_form{\_formType}\_SupportingDocuments' method='POST'>" +

$"название: <input type='text' name='SupportingDocumentName{\_formType}' value = {supportingDocument.Name}>" +

"<INPUT type ='submit' value='Показать'></FORM>";

}

}

}

Листинг класса *HtmlTableVisitor*

using lab3.Models;

namespace lab3.HtmlParsers

{

public class HtmlTableVisitor : IHtmlVisitor

{

public string Parse(AgentType agentType)

{

return

$"<tr>" +

$"<td>{agentType.Id}</td>" +

$"<td>{agentType.Type}</td>" +

$"</tr>";

}

public string Parse(Client client)

{

return

$"<tr>" +

$"<td>{client.Id}</td>" +

$"<td>{client.Name}</td>" +

$"<td>{client.Surname}</td>" +

$"<td>{client.MiddleName}</td>" +

$"<td>{client.Birthdate}</td>" +

$"<td>{client.MobilePhone}</td>" +

$"<td>{client.City}</td>" +

$"<td>{client.Street}</td>" +

$"<td>{client.House}</td>" +

$"<td>{client.Apartment}</td>" +

$"<td>{client.PassportNumber}</td>" +

$"<td>{client.PassportIdentification}</td>" +

$"<td>{client.PassportIssueDate}</td>" +

$"</tr>";

}

public string Parse(Contract contract)

{

return

$"<tr>" +

$"<td>{contract.Id}</td>" +

$"<td>{contract.Responsibilities}</td>" +

$"<td>{contract.StartDeadline}</td>" +

$"<td>{contract.EndDeadline}</td>" +

$"</tr>";

}

public string Parse(InsuranceAgent insuranceAgent)

{

return

$"<tr>" +

$"<td>{insuranceAgent.Id}</td>" +

$"<td>{insuranceAgent.Name}</td>" +

$"<td>{insuranceAgent.Surname}</td>" +

$"<td>{insuranceAgent.MiddleName}</td>" +

$"<td>{insuranceAgent.Salary}</td>" +

$"<td>{insuranceAgent.TransactionPercent}</td>" +

$"<td>{insuranceAgent.Contract}</td>" +

$"<td>{insuranceAgent.AgentType}</td>" +

$"</tr>";

}

public string Parse(InsuranceCase insuranceCase)

{

return

$"<tr>" +

$"<td>{insuranceCase.Id}</td>" +

$"<td>{insuranceCase.Client}</td>" +

$"<td>{insuranceCase.InsuranceAgent}</td>" +

$"<td>{insuranceCase.Date}</td>" +

$"<td>{insuranceCase.InsurancePayment}</td>" +

$"<td>{insuranceCase.SupportingDocument}</td>" +

$"</tr>";

}

public string Parse(InsuranceType insuranceType)

{

return

$"<tr>" +

$"<td>{insuranceType.Id}</td>" +

$"<td>{insuranceType.Name}</td>" +

$"<td>{insuranceType.Description}</td>" +

$"</tr>";

}

public string Parse(Policy policy)

{

return

$"<tr>" +

$"<td>{policy.Id}</td>" +

$"<td>{policy.PolicyNumber}</td>" +

$"<td>{policy.PolicyPayment}</td>" +

$"<td>{policy.PolicyTerm}</td>" +

$"<td>{policy.ApplicationDate}</td>" +

$"<td>{policy.Client}</td>" +

$"<td>{policy.InsuranceAgent}</td>" +

$"<td>{policy.InsuranceType}</td>" +

$"</tr>";

}

public string Parse(PolicyInsuranceCase policyInsuranceCase)

{

return

$"<tr>" +

$"<td>{policyInsuranceCase.PolicyId}</td>" +

$"<td>{policyInsuranceCase.InsuranceCaseId}</td>" +

$"</tr>";

}

public string Parse(SupportingDocument supportingDocument)

{

return

$"<tr>" +

$"<td>{supportingDocument.Id}</td>" +

$"<td>{supportingDocument.Name}</td>" +

$"<td>{supportingDocument.Description}</td>" +

$"</tr>";

}

}

}

Листинг класса *IHtmlVisitor*

using lab3.Models;

namespace lab3.HtmlParsers

{

public interface IHtmlVisitor

{

string Parse(AgentType agentType);

string Parse(Client client);

string Parse(Contract contract);

string Parse(InsuranceAgent insuranceAgent);

string Parse(InsuranceCase insuranceCase);

string Parse(InsuranceType insuranceType);

string Parse(Policy policy);

string Parse(PolicyInsuranceCase policyInsuranceCase);

string Parse(SupportingDocument supportingDocument);

}

}

Листинг класса *CookiesVisitor*

using lab3.Models;

namespace lab3.LocalStorage.Cookies

{

public class CookiesVisitor : ILocalSaveVisitor

{

public AgentType Save(AgentType agentType, HttpContext context)

{

if (context.Request.Method == "POST")

{

var type = context.Request.Form["Type2"];

context.Response.Cookies.Append("AgentType", type);

return new AgentType() { Type = type };

}

else

{

if (context.Request.Cookies.ContainsKey("AgentType"))

{

return new AgentType() { Type = context.Request.Cookies["AgentType"] };

}

return new AgentType();

}

}

public Client Save(Client client, HttpContext context)

{

if (context.Request.Method == "POST")

{

var name = context.Request.Form["ClientName2"];

context.Response.Cookies.Append("Client", name);

return new Client() { Name = name };

}

else

{

if (context.Request.Cookies.ContainsKey("Client"))

{

return new Client() { Name = context.Request.Cookies["Client"] };

}

return new Client();

}

}

public Contract Save(Contract contract, HttpContext context)

{

if (context.Request.Method == "POST")

{

var responsibilities = context.Request.Form["Responsibilities2"];

context.Response.Cookies.Append("Contract", responsibilities);

return new Contract() { Responsibilities = responsibilities };

}

else

{

if (context.Request.Cookies.ContainsKey("Contract"))

{

return new Contract() { Responsibilities = context.Request.Cookies["Contract"] };

}

return new Contract();

}

}

public InsuranceAgent Save(InsuranceAgent insuranceAgent, HttpContext context)

{

if (context.Request.Method == "POST")

{

decimal.TryParse(context.Request.Form["Salary2"], out var salary);

context.Response.Cookies.Append("InsuranceAgent", salary.ToString());

return new InsuranceAgent() { Salary = salary };

}

else

{

if (context.Request.Cookies.ContainsKey("InsuranceAgent"))

{

return new InsuranceAgent() { Salary = decimal.Parse(context.Request.Cookies["InsuranceAgent"]) };

}

return new InsuranceAgent();

}

}

public InsuranceCase Save(InsuranceCase insuranceCase, HttpContext context)

{

if (context.Request.Method == "POST")

{

decimal.TryParse(context.Request.Form["InsurancePayment2"], out var insurancePayment);

context.Response.Cookies.Append("InsuranceCase", insurancePayment.ToString());

return new InsuranceCase() { InsurancePayment = insurancePayment };

}

else

{

if (context.Request.Cookies.ContainsKey("InsuranceCase"))

{

return new InsuranceCase() { InsurancePayment = decimal.Parse(context.Request.Cookies["InsuranceCase"]) };

}

return new InsuranceCase();

}

}

public InsuranceType Save(InsuranceType insuranceType, HttpContext context)

{

if (context.Request.Method == "POST")

{

var insuranceTypeName = context.Request.Form["InsuranceTypeName2"];

context.Response.Cookies.Append("InsuranceType", insuranceTypeName);

return new InsuranceType() { Name = insuranceTypeName };

}

else

{

if (context.Request.Cookies.ContainsKey("InsuranceType"))

{

return new InsuranceType() { Name = context.Request.Cookies["InsuranceType"] };

}

return new InsuranceType();

}

}

public Policy Save(Policy policy, HttpContext context)

{

if (context.Request.Method == "POST")

{

decimal.TryParse(context.Request.Form["PolicyPayment2"], out var policyPayment);

context.Response.Cookies.Append("Policy", policyPayment.ToString());

return new Policy() { PolicyPayment = policyPayment };

}

else

{

if (context.Request.Cookies.ContainsKey("Policy"))

{

return new Policy() { PolicyPayment = decimal.Parse(context.Request.Cookies["Policy"]) };

}

return new Policy();

}

}

public PolicyInsuranceCase Save(PolicyInsuranceCase policyInsuranceCase, HttpContext context)

{

if (context.Request.Method == "POST")

{

int.TryParse(context.Request.Form["PolicyId2"], out var policyId);

context.Response.Cookies.Append("PolicyInsuranceCase", policyId.ToString());

return new PolicyInsuranceCase() { PolicyId = policyId };

}

else

{

if (context.Request.Cookies.ContainsKey("PolicyInsuranceCase"))

{

return new PolicyInsuranceCase() { PolicyId = int.Parse(context.Request.Cookies["PolicyInsuranceCase"]) };

}

return new PolicyInsuranceCase();

}

}

public SupportingDocument Save(SupportingDocument supportingDocument, HttpContext context)

{

if (context.Request.Method == "POST")

{

var name = context.Request.Form["SupportingDocumentName2"];

context.Response.Cookies.Append("SupportingDocument", name);

return new SupportingDocument() { Name = name };

}

else

{

if (context.Request.Cookies.ContainsKey("SupportingDocument"))

{

return new SupportingDocument() { Name = context.Request.Cookies["SupportingDocument"] };

}

return new SupportingDocument();

}

}

}

}

Листинг класса *SessionExtensions*

using Newtonsoft.Json;

namespace lab3.LocalStorage.Sessions

{

public static class SessionExtensions

{

public static void Set<T>(this ISession session, string key, T value)

{

session.SetString(key, JsonConvert.SerializeObject(value));

}

public static T Get<T>(this ISession session, string key)

{

var value = session.GetString(key);

var entity = value == null ? default : JsonConvert.DeserializeObject<T>(value);

return entity;

}

}

}

Листинг класса *SessionsVisitor*

using lab3.Models;

namespace lab3.LocalStorage.Sessions

{

public class SessionsVisitor : ILocalSaveVisitor

{

public AgentType Save(AgentType agentType, HttpContext context)

{

if (context.Request.Method == "POST")

{

var type = context.Request.Form["Type1"];

var newAgentType = new AgentType { Type = type };

context.Session.Set("AgentType", newAgentType);

return newAgentType;

}

else

{

agentType = context.Session.Get<AgentType>("AgentType") ?? new AgentType();

return agentType;

}

}

public Client Save(Client client, HttpContext context)

{

if (context.Request.Method == "POST")

{

var name = context.Request.Form["ClientName1"];

var newClient = new Client { Name = name };

context.Session.Set("Client", newClient);

return newClient;

}

else

{

client = context.Session.Get<Client>("Client") ?? new Client();

return client;

}

}

public Contract Save(Contract contract, HttpContext context)

{

if (context.Request.Method == "POST")

{

var responsibilities = context.Request.Form["Responsibilities1"];

var newClient = new Contract { Responsibilities = responsibilities };

context.Session.Set("Contract", newClient);

return newClient;

}

else

{

contract = context.Session.Get<Contract>("Contract") ?? new Contract();

return contract;

}

}

public InsuranceAgent Save(InsuranceAgent insuranceAgent, HttpContext context)

{

if (context.Request.Method == "POST")

{

decimal.TryParse(context.Request.Form["Salary1"], out var salary);

var newInsuranceAgent = new InsuranceAgent { Salary = salary };

context.Session.Set("InsuranceAgent", newInsuranceAgent);

return newInsuranceAgent;

}

else

{

insuranceAgent = context.Session.Get<InsuranceAgent>("InsuranceAgent") ?? new InsuranceAgent();

return insuranceAgent;

}

}

public InsuranceCase Save(InsuranceCase insuranceCase, HttpContext context)

{

if (context.Request.Method == "POST")

{

decimal.TryParse(context.Request.Form["InsurancePayment1"], out var insurancePayment);

var newInsuranceCase = new InsuranceCase { InsurancePayment = insurancePayment };

context.Session.Set("InsuranceCase", newInsuranceCase);

return newInsuranceCase;

}

else

{

insuranceCase = context.Session.Get<InsuranceCase>("InsuranceCase") ?? new InsuranceCase();

return insuranceCase;

}

}

public InsuranceType Save(InsuranceType insuranceType, HttpContext context)

{

if (context.Request.Method == "POST")

{

var name = context.Request.Form["InsuranceTypeName1"];

var newInsuranceType = new InsuranceType { Name = name };

context.Session.Set("InsuranceType", newInsuranceType);

return newInsuranceType;

}

else

{

insuranceType = context.Session.Get<InsuranceType>("InsuranceType") ?? new InsuranceType();

return insuranceType;

}

}

public Policy Save(Policy policy, HttpContext context)

{

if (context.Request.Method == "POST")

{

decimal.TryParse(context.Request.Form["PolicyPayment1"], out var policyPayment);

var newPolicy = new Policy { PolicyPayment = policyPayment };

context.Session.Set("Policy", newPolicy);

return newPolicy;

}

else

{

policy = context.Session.Get<Policy>("Policy") ?? new Policy();

return policy;

}

}

public PolicyInsuranceCase Save(PolicyInsuranceCase policyInsuranceCase, HttpContext context)

{

if (context.Request.Method == "POST")

{

int.TryParse(context.Request.Form["PolicyId1"], out var policyId);

var newPolicyInsuranceCase = new PolicyInsuranceCase { PolicyId = policyId };

context.Session.Set("PolicyInsuranceCase", newPolicyInsuranceCase);

return newPolicyInsuranceCase;

}

else

{

policyInsuranceCase = context.Session.Get<PolicyInsuranceCase>("PolicyInsuranceCase") ?? new PolicyInsuranceCase();

return policyInsuranceCase;

}

}

public SupportingDocument Save(SupportingDocument supportingDocument, HttpContext context)

{

if (context.Request.Method == "POST")

{

var name = context.Request.Form["SupportingDocumentName1"];

var newSupportingDocument = new SupportingDocument { Name = name };

context.Session.Set("SupportingDocument", newSupportingDocument);

return newSupportingDocument;

}

else

{

supportingDocument = context.Session.Get<SupportingDocument>("SupportingDocument") ?? new SupportingDocument();

return supportingDocument;

}

}

}

}

Листинг класса *ILocalSaveVisitor*

using lab3.Models;

namespace lab3.LocalStorage

{

public interface ILocalSaveVisitor

{

AgentType Save(AgentType agentType, HttpContext context);

Client Save(Client client, HttpContext context);

Contract Save(Contract contract, HttpContext context);

InsuranceAgent Save(InsuranceAgent insuranceAgent, HttpContext context);

InsuranceCase Save(InsuranceCase insuranceCase, HttpContext context);

InsuranceType Save(InsuranceType insuranceType, HttpContext context);

Policy Save(Policy policy, HttpContext context);

PolicyInsuranceCase Save(PolicyInsuranceCase policyInsuranceCase, HttpContext context);

SupportingDocument Save(SupportingDocument supportingDocument, HttpContext context);

}

}

Листинг класса *AgentType*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class AgentType : IEntity {

public int Id { get; set; }

public string Type { get; set; } = null!;

public virtual ICollection<InsuranceAgent> InsuranceAgents { get; set; } = new List<InsuranceAgent>();

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (AgentType)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *Client*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class Client : IEntity {

public int Id { get; set; }

public string Name { get; set; } = null!;

public string Surname { get; set; } = null!;

public string MiddleName { get; set; } = null!;

public DateTime Birthdate { get; set; }

public string MobilePhone { get; set; } = null!;

public string City { get; set; } = null!;

public string Street { get; set; } = null!;

public string House { get; set; } = null!;

public string Apartment { get; set; } = null!;

public string PassportNumber { get; set; } = null!;

public DateTime PassportIssueDate { get; set; }

public string PassportIdentification { get; set; } = null!;

public virtual ICollection<InsuranceCase> InsuranceCases { get; set; } = new List<InsuranceCase>();

public virtual ICollection<Policy> Policies { get; set; } = new List<Policy>();

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (Client)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *Contract*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class Contract : IEntity {

public int Id { get; set; }

public string Responsibilities { get; set; } = null!;

public DateTime StartDeadline { get; set; }

public DateTime EndDeadline { get; set; }

public virtual ICollection<InsuranceAgent> InsuranceAgents { get; set; } = new List<InsuranceAgent>();

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (Contract)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *IEntity*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models

{

public interface IEntity {

public string AcceptHtml(IHtmlVisitor visitor);

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context);

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities);

}

}

Листинг класса *InsuranceAgent*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class InsuranceAgent : IEntity {

public int Id { get; set; }

public string Name { get; set; } = null!;

public string Surname { get; set; } = null!;

public string MiddleName { get; set; } = null!;

public int AgentType { get; set; }

public decimal Salary { get; set; }

public int Contract { get; set; }

public double TransactionPercent { get; set; }

public virtual AgentType AgentTypeNavigation { get; set; } = null!;

public virtual Contract ContractNavigation { get; set; } = null!;

public virtual ICollection<InsuranceCase> InsuranceCases { get; set; } = new List<InsuranceCase>();

public virtual ICollection<Policy> Policies { get; set; } = new List<Policy>();

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (InsuranceAgent)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *InsuranceCase*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class InsuranceCase : IEntity {

public int Id { get; set; }

public int Client { get; set; }

public int InsuranceAgent { get; set; }

public DateTime Date { get; set; }

public string? Description { get; set; }

public int SupportingDocument { get; set; }

public decimal InsurancePayment { get; set; }

public virtual Client ClientNavigation { get; set; } = null!;

public virtual InsuranceAgent InsuranceAgentNavigation { get; set; } = null!;

public virtual SupportingDocument SupportingDocumentNavigation { get; set; } = null!;

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (InsuranceCase)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *InsuranceType*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class InsuranceType : IEntity {

public int Id { get; set; }

public string Name { get; set; } = null!;

public string? Description { get; set; }

public virtual ICollection<Policy> Policies { get; set; } = new List<Policy>();

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (InsuranceType)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *Policy*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class Policy : IEntity {

public int Id { get; set; }

public int InsuranceAgent { get; set; }

public DateTime ApplicationDate { get; set; }

public string PolicyNumber { get; set; } = null!;

public int InsuranceType { get; set; }

public int Client { get; set; }

public int PolicyTerm { get; set; }

public decimal PolicyPayment { get; set; }

public virtual Client ClientNavigation { get; set; } = null!;

public virtual InsuranceAgent InsuranceAgentNavigation { get; set; } = null!;

public virtual InsuranceType InsuranceTypeNavigation { get; set; } = null!;

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (Policy)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *PolicyInsuranceCase*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class PolicyInsuranceCase : IEntity {

public int PolicyId { get; set; }

public int InsuranceCaseId { get; set; }

public virtual InsuranceCase InsuranceCase { get; set; } = null!;

public virtual Policy Policy { get; set; } = null!;

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (PolicyInsuranceCase)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *SupportingDocument*

using lab3.HtmlParsers;

using lab3.LocalStorage;

using lab3.Services;

namespace lab3.Models;

public partial class SupportingDocument : IEntity

{

public int Id { get; set; }

public string Name { get; set; } = null!;

public string? Description { get; set; }

public virtual ICollection<InsuranceCase> InsuranceCases { get; set; } = new List<InsuranceCase>();

public IEnumerable<IEntity> AcceptFilter(IFilterVisitor visitor, IEnumerable<IEntity> entities) {

return visitor.Filter(entities.Select(e => (SupportingDocument)e), this);

}

public string AcceptHtml(IHtmlVisitor visitor) {

return visitor.Parse(this);

}

public IEntity AcceptLocalData(ILocalSaveVisitor visitor, HttpContext context) {

return visitor.Save(this, context);

}

}

Листинг класса *Program*

using lab3.Data;

using lab3.Handlers;

using Microsoft.EntityFrameworkCore;

internal class Program {

private static void Main(string[] args) {

var builder = WebApplication.CreateBuilder(args);

builder.Services.AddDbContext<InsuranceCompanyContext>(options => options.UseSqlServer(builder.Configuration.GetConnectionString("InsuranceCompany")));

builder.Services.AddTransient<InsuranceCompanyСache>();

builder.Services.AddMemoryCache();

builder.Services.AddDistributedMemoryCache();

builder.Services.AddSession();

var app = builder.Build();

app.UseSession();

app.UseCookiePolicy();

var handler = new InsuranceCompanyHandlers();

var tables = InsuranceCompanyContext.DbSetNames;

app.Map("/info", (appBuilder) => appBuilder.Run(async (context) => handler.GetInfoPage(context)));

foreach (var table in tables){

app.Map($"/table\_{table}", (appBuilder) => appBuilder.Run(async (context) => handler.GetTablePage(context, table)));

}

foreach (var table in tables) {

app.Map($"/search\_form1\_{table}", (appBuilder) => appBuilder.Run(async (context) => handler.GetSearchForm1Page(context, table)));

}

foreach (var table in tables) {

app.Map($"/search\_form2\_{table}", (appBuilder) => appBuilder.Run(async (context) => handler.GetSearchForm2Page(context, table)));

}

app.Run(async (context) => handler.GetMainPage(context));

app.Run();

}

}