

IFRS 16 – NLS

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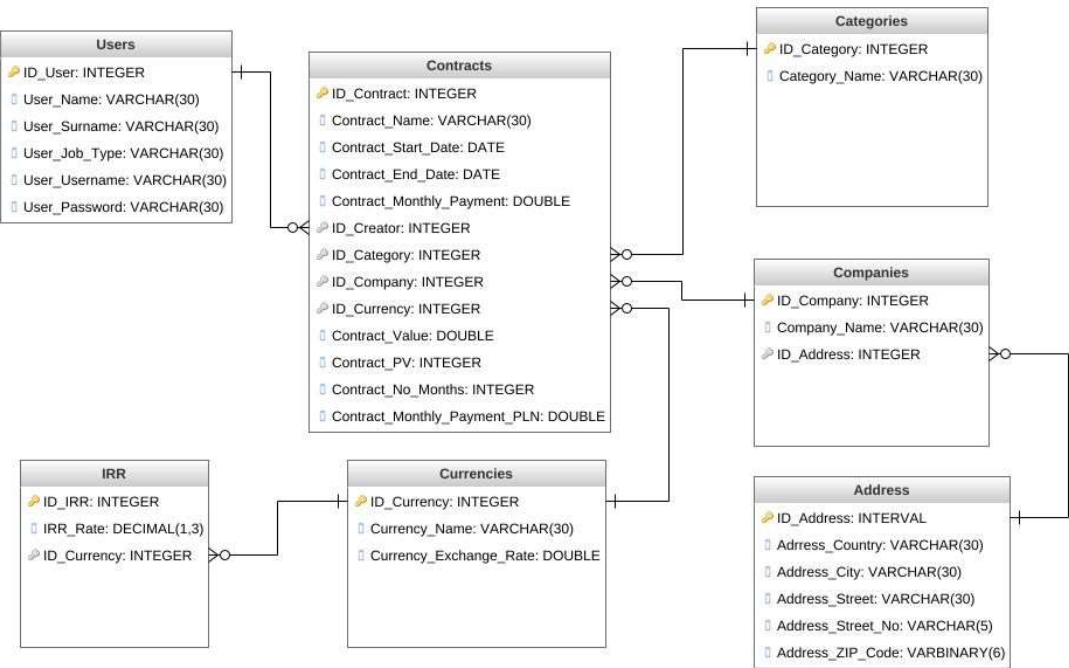
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INTRODUCTION

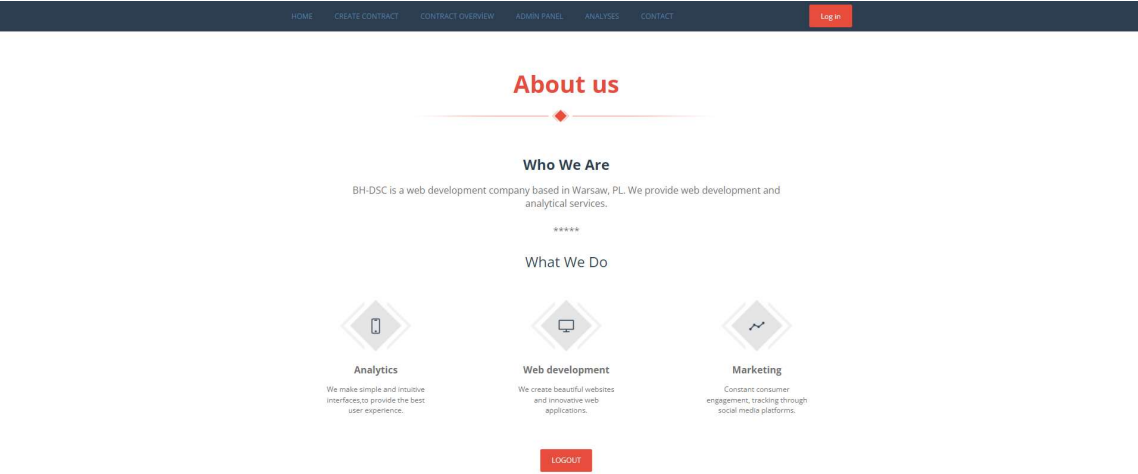
We wanted to make app interactive and user friendly. Of course, it is just a demo and should be only use in closed environment. App consists of panels: home, create contract, contract overview, admin panel (admin panel has 2 more panels Add user and Add contract), analyses, contact and login. When user opens the app for the first time there is a restriction with security rights. Before users log in, they have only access to home page, login page and contact page. If users try to go to different panels, they will get error message that they need to log in. When users log in there are messages which tells user if login was successful or not. If users are logged, they can access the create contract, contract overview and analyses panel additionally and make changes, analyse data there. Moreover, there are 2 types of users: admins and modifiers. Modifiers has only access to described panels whereas admin has additional rights to access admin panel in order to create new user or add category. When user is logged in but is not admin clicking admin panel will return an error message.

Database:

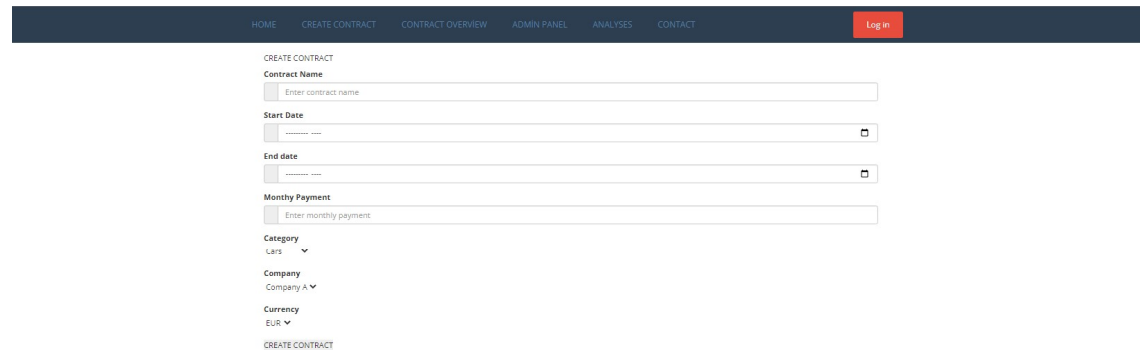


Design:

1. Home Page: Our main page has a pleasant and intuitive interface in which you can access all the needed functions of our app.



2. Create Contract: Convenient page to create easily new assigned contracts.



The screenshot shows a web application interface for creating a contract. At the top, there is a dark blue navigation bar with links: HOME, CREATE CONTRACT, CONTRACT OVERVIEW, ADMIN PANEL, ANALYSES, and CONTACT. A red 'Log in' button is located on the right side of this bar. Below the navigation bar, the main content area is titled 'CREATE CONTRACT'. It contains several input fields: 'Contract Name' with a placeholder 'Enter contract name', 'Start Date' with a calendar icon, 'End date' with a calendar icon, and 'Monthly Payment' with a placeholder 'Enter monthly payment'. Below these are three dropdown menus: 'Category' (showing 'Lars'), 'Company' (showing 'Company A'), and 'Currency' (showing 'EUR'). At the bottom of the form is a 'CREATE CONTRACT' button.

SQL Queries in Contract Overview:

1. Selecting distinct categories to make sure data is always in real time
2. Getting IRR_Rate to calculate PV
3. Getting Exchange rate to calculate exchanged values
4. Selecting currently logged user to put inside the database currently logged user
5. Inserting all the data to create contract after all calculations

3. Contract Overview:

HOME

CREATE CONTRACT

CONTRACT OVERVIEW

ADMIN PANEL

ANALYSES

CONTACT

Log in

Select Contract

All Contracts

Select Category

All Categories

Select Company

All Companies

Select Currency

All Currencies

more

Enter value

Apply filter

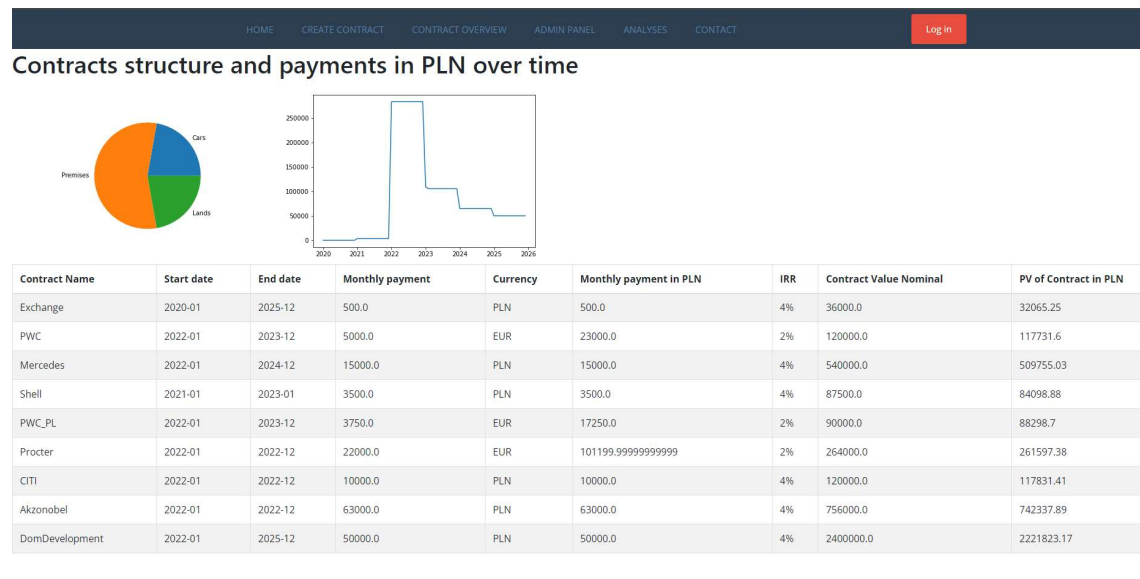
Contract Name	Start date	End date	Monthly payment	Creator	Category	Company	Currency	IRR
Exchange	2020-01	2025-12	500.0	admin	Premises	Company A	PLN	4%
PWC	2022-01	2023-12	5000.0	Daw	Premises	Company A	EUR	2%
Mercedes	2022-01	2024-12	15000.0	Daw	Premises	Company A	PLN	4%
Shell	2021-01	2023-01	3500.0	Daw	Cars	Company A	PLN	4%
PWC_PL	2022-01	2023-12	3750.0	Daw	Cars	Company A	EUR	2%
Procter	2022-01	2022-12	22000.0	Daw	Premises	Company A	EUR	2%
CITI	2022-01	2022-12	10000.0	Daw	Premises	Company A	PLN	4%
Akzonobel	2022-01	2022-12	63000.0	Daw	Lands	Company A	PLN	4%
DomDevelopment	2022-01	2025-12	50000.0	Daw	Lands	Company A	PLN	4%

Contract overview is meant to present basic info about contracts. We can see their info about name, start date, end date, monthly payment, category, creator, company, currency and IRR. Moreover, we have 5 filters. Unfortunately, user can only use one filter at the time, otherwise all contracts will be shown. Data can be filtered by Category, Company, Contract Name, Currency and monthly payment. Monthly payment can be used as a filter to show contracts with value bigger or smaller than provided threshold. By clicking apply filter data will be filtered. After creating new contract data is updated automatically and you can see new contract just after creation.

SQL Queries in Analyses:

1. Selecting data from Contracts table to show them in the table in template inside app
2. Selecting distinct categories to make pie chart and making sure it is updating in real time

4. Analyses:



Analyses shows different data about contracts. First, we can see the pie chart based on contracts category which shows structure of all contracts. Based on that we can get info what is most created type of contract. Moreover, we have plot which shows payments over time in each month after exchange for PLN. Based on that plot, we can see in which month how much will we have to pay for contracts in PLN and see how will it change over time. Plots and table below is updating automatically. If admin add new category it will appear in the pie chart. The table shows data similar to the contract overview but additionally we have payments after exchange to PLN. Value of whole contract calculated as monthly payment * month of contract. There is also Present Value of the contract calculated based on IRR which is based on currency.

SQL Queries in Analyses:

1. Selecting data from Contracts table to show them in the table in template inside app
2. Selecting distinct categories to make pie chart and making sure it is updating in real time

5. Admin Panel: Admin panel can be accessed only users with admin status. Furthermore, admins through this page can create users and add new additional categories. The registration of new users in this way gave our app more reliability and security measures.

[HOME](#) [CREATE CONTRACT](#) [CONTRACT OVERVIEW](#) [ADMIN PANEL](#) [ANALYSES](#) [CONTACT](#) [Log in](#)

Pick action

[ADD USER](#) [ADD CATEGORY](#)

[HOME](#) [CREATE CONTRACT](#) [CONTRACT OVERVIEW](#) [ADMIN PANEL](#) [ANALYSES](#) [CONTACT](#) [Log in](#)

Pick action

[ADD USER](#) [ADD CATEGORY](#)

ADD USER

Username

Password

Name

Surname

Job type
admin ▾

ADD USER

[HOME](#) [CREATE CONTRACT](#) [CONTRACT OVERVIEW](#) [ADMIN PANEL](#) [ANALYSES](#) [CONTACT](#) [Log in](#)

Pick action

[ADD USER](#) [ADD CATEGORY](#)

ADD CATEGORY

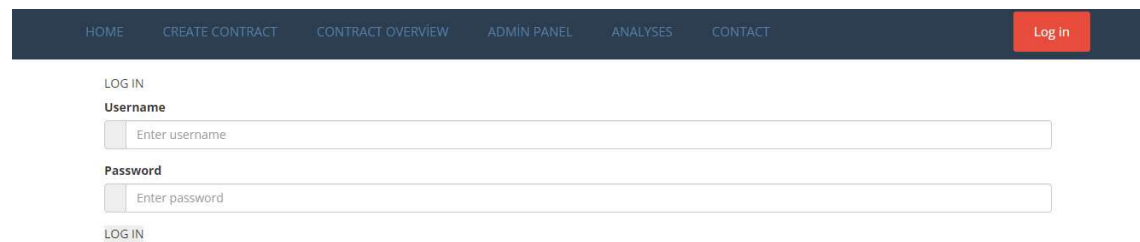
Category

ADD CATEGORY

SQL Queries in Admin Panel:

1. Inserting provided user data into the Users table
2. Selecting Job_Type from Users table to check if user has access to the panel
3. Inserting a new category with provided data

6. Log in: On the login page, user-input data has to be verified through the "Users" table in the Database. If inputted data fails verification the will pop a red error message as shown below in screenshots.



HOME CREATE CONTRACT CONTRACT OVERVIEW ADMIN PANEL ANALYSES CONTACT Log in

LOG IN

Username

Password

LOG IN



HOME CREATE CONTRACT CONTRACT OVERVIEW ADMIN PANEL ANALYSES CONTACT Log in

Login failed. Please provide correct username.

LOG IN

Username

Password

LOG IN

External Python Packages:

```
1 import os
2 import io
3 import random
4 from flask import Flask, render_template, redirect, url_for, request, flash, Response
5 import sqlite3
6 |
7 ## needed for dashboard to analysis part
8 import dash
9 from dash import dcc
10 from dash import html
11 from dash.dependencies import Input, Output
12 import plotly.express as px ## pandas must be installed also
13 import pandas as pd #not needed ?
14 import numpy as np #not needed ?
15 import matplotlib.pyplot as plt
16 from matplotlib.backends.backend_agg import FigureCanvasAgg as FigureCanvas
17 from matplotlib.figure import Figure
18 from flask_login import LoginManager, UserMixin, login_user, login_required, logout_user, current_user
19
20 import base64 ## needed
21 import datetime ## needed
22 from datetime import date, timedelta
23 from dateutil.relativedelta import relativedelta
```

Distribution of Work:

- 1) Idea/short description – Dawid Szyszko-Celiński (DSC)
- 2) Templates – Behbud Hamzayev (BH)
- 3) Database Scheme (DSC)
- 4) Register, login page (BH)
- 5) Creating Database (DSC)
- 6) Creating tabs and visual side (BH)
- 7) Creating DB connection and dropdown functionality (DSC)
- 8) SQL statements and functionality to grab data from templates (both – we will divide all SQL functionalities by half)
- 9) Report and presentation (both – doing parts based on what we were doing in the project)

References:

Our templates were based on the templates from <https://bootsnipp.com/>. Of course, most of them were modified to needs of the project.