1. Efficient control of public transportation

This topic consists of the development of a software system, which increases the efficiency of public transportation. The routes will be stored in a database to which only a web service will have access. This will make it possible to implement the graphical user interface (GUI) as a web or mobile application. Algorithms from graph theory could also be used for the implementation of the control. If some passengers would remain at the station, because of the lack of space, the bus driver could request another ride.

Technologies

Database: Microsoft SQL Server, MySQL
Web Service: ASP.NET Web API, ASP.NET Core Web API
User interface: ASP.NET MVC, jQuery, Bootstrap, React, AngularJS, WPF, Android

2. Dash Cam Z – Car dashcam application

The main purpose of dashcams is to continuously record the events in traffic. This can serve as evidence in case of accidents or other controversial traffic incidents. Dashcams have been in use since several years in many countries, but in our country it isn't so popular yet.
The project includes the development of a mobile application which implements the functionalities of such a device. Beside the basic features, we will take advantage of the hardware capabilities of the phone. Uploading the captures into the cloud, emergency call in case of collision detection, movement analysis using the gyroscope and GPS. After implementing these, other extra features could be included like traffic sign recognition and line assist.

Technologies

Android / iOS

3. HR Planner

The key to the success of a company is in its employees! They form the main resource for company development and in order to reach the company's full potential, the streamlined management of employees is indispensable. The need for a HR planner application is crucial. The HR Planner application can have 2 types of users: HR department employees and 'basic employees'.
With the help of this application, the employees from the HR department can create the profile page for an employee, can create various bonus types (ex. Holiday tickets, private pension, gym subscriptions, etc.) and configure these for the employees. If a holiday request is received from an employee, it can be accepted. Based on this the work hours for the employees can be calculated automatically. After this is done, a request for meal and holiday tickets can be sent towards the issuer of these. When an employee has an anniversary (ex. Works for 1 years at the company) a notification could be sent to the HR department. Various reports could also be generated using the application.

The ‘basic employees’ could send their holiday requests, can see their work hours reports and their available bonuses (with all their details). They would have their own profile with all the information regarding his employment (hiring date, team, holiday requests, available bonuses, etc.). The system could be linked with a smartphone or smartwatch and could convert the steps or covered kilometers into bonuses.

Technologies

Database: Microsoft SQL Server, MySQL
Web Service: ASP.NET Web API, ASP.NET Core Web API
User interface: ASP.NET MVC, jQuery, Bootstrap, React, AngularJS, WPF, Android