|  |  |  |  |
| --- | --- | --- | --- |
| Assignment 1 | | Project Summary | |
| Course | | Fullstack Application Development with Node.js + Express.js + React.js - 2020 | |
|  | | | |
| Project author Pseudonym | | | |
| № | Yavor Sheptoev | | javorsh |

|  |  |
| --- | --- |
| Project name | Sample Weather Page |

|  |
| --- |
| 1. Short project description (Business needs and system features) |
| The Backend will be realized with Express Server and MYSQL DB .  The Frontend will be realized with React (React Components)    **Short description**:  The main page will show some geographical map (jpg file). By it’s known geographical latitude and longitude in down left and upper right corner on every Mouse movement will be calculated the current mouse position in latitude and longitude. So by calibration functions **pixel(x,y)<>(lat,lon)** every object that have some geographical coordinates (lat and lon) can be positioned on the correct place over map. For every Mouse position will be calculated the nearest station and on mouse click will be fetched from backend some meteorological data for this station. After that with React Component this data will be visualized on the map. By mouse clicking every station can be selected (visualized) and deselected (hidden). On every station selection(deselection) with PUT the desired stations (for given user) will be kept in DB.  ***Anonymous User,*** have role **GUEST.** Theycan only view the weather data for fixed 3 meteorological stations. Can not customize nothing.  ***Registered User*** ,have role **REGISTERED** , They can fetch weather data on mouse click and customize desired meteorological stations over geographical map. So on next login this stations will be loaded by default.  ***Administrators* ,** (extends *Registered User*) have role **ADMIN** . They can manage (create, delete, edit users and stations data). |

|  |  |  |
| --- | --- | --- |
| 1. BACKEND - Express server with MYSQl DB . Main entities: users , stations ,weather | | |
| **HTML Operations Brief Descriptions Endpoints** | | | **Brief Descriptions** | **Endpoints** |
|  | **Stations** |  |
| **1.1 GET** | Get all Stations in JSON format | *http://localhost:9000/stations* |
| * 1. **GET** | Get Nearest station for some latitude and longitude .  [{"name":"KUSTENDIL","icao":"","synop":"15601","lat":42.27,"lon":22.77,"elev":522,"distance":12.825804614258}] | [*http://localhost:9000/stations/:lat;:lon*](http://localhost:9000/stations/:lat;:lon)  Ex: http://localhost:9000/stations/40;20 |
| **1.3 POST** | Create new station (from body of request)  Require ADMIN role | *http://localhost:9000/stations* |
| **1.4 PUT** | *Update station data ()* | *http://localhost:9000/stations* |
| **1.5 DELETE** | *Delete station by it’s id ,* Require ADMIN role | *http://localhost:9000/stations/:id* |
|  | ***USERS*** |  |
| * 1. **GET** | *Get All Users* | *http://localhost:9000/users* |
| * 1. **GET** | *Get User Data by username*  [{"username":"javorsh","password":"\*","first\_name":"Yavor","last\_name":"Sheptoev","email":"javorsh@abv.bg","roles":"REGISTERED","stations":"15614;15625;15655;15552;15528;"}] | *http://localhost:9000/users/:username* |
| * 1. **GET ;**   2. **PUT** | *Get selected(desired) stations as ; delimited string for given username*.  [{"stations":"15614;15625;15655;15552;15528;"}] | *http://localhost:9000/users/:username/stations* |
| **And more … PUT, DELETE, POST** |  |  |
| **3** | ***Weather*** |  |
| **3.1 GET** | *Get weather data for given date for all stations*  *Date format as string - 20201015* | *http://localhost:9000/weather/:date* |
|  | {"date":"20201015","city":"SOFIA","synop":"15614","icao":"LBSF","t":20,"bal":6,"wind\_pp":330,"wind\_ss":4,"ww":"ra","origin":"FADATA","id":2} |  |  |  |
| **3.2 GET** | Ge weather data for given stantion for given date | *http://localhost:9000/weather/:date/:synop* |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| 1. Main Views (SPA Frontend) | | |
| **View name** | **Brief Descriptions** | **URI** |
| **WeatherPanel** | Main view | / |
| **Login** | Login Page | */login* |
| **RegisterUser** | Presents a view allowing the *Anonymous Users* to register itself. | */register* |
| **EditUsers** | GET,PUT,POST,DELETE stations , for admin purpose. | */users* |
| **EditStations** | GET,PUT,POST,DELETE stations , for admin purpose. | */stations* |
|  |  |  |
| Nested React Components :  Weather | Represent some weather data for given station and date |  |

**Example of Main Page :**

