GummyBears application

GummyBears is an application developed in Java. The app allows you to sign in as an administrator or as an employee and track employee working hours. See **How To Start GummyBears App** section for how to start an application and see **Explore GummyBears App** section for additional information on the App functionality.

The project is hosted in the GitHub at the following address:
https://github.com/johaido/GummyBears.git

Team

This project is developed by BIT FHNW students for the 21FS IT-Project (BITFT 2a) course.

Team members:
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Implemented features

- Client-/Server implementation
  - Server implemented in Java
  - Client is browser-based (HTML / CSS / JavaScript)
- Server-side database stores relevant data.
- Stateless communication (i.e., RESTful).
- The administrator account.
- The administrator can login and logout.
- The administrator can create an account for an employee.
- The administrator can modify information for an existing account.
- The administrator can delete an existing account.
- The administrator can enable/disable an existing account.
- The employee account.
- The employee can login and logout.
- The employee can register the start (check-in) and the end of work (check-out).
- The employee can view registered and remaining working hours per day.
- The employee can view the time statement for today.
- The employee can view the time statement for the whole registered period, including previous days.
- Login passwords are stored encrypted in the Database.
- The server writes log entries to a text file.

Additional features

- The actual work time is determined by clicking the checkin/checkout button. It also generates a message showing the exact time registered in the database.
- The information about an employee is displayed on the Homepage of an employee account.
- The administrator can modify existing accounts directly in the table.
- Appearance: Good styling (CSS), attractive interface
- Responsive design: also usable on mobile devices

Installation requirements

- Java version >= 10.
- Spring Tool Suite 4 IDE
- Maven
- MySQL
- MySQL Workbench

How to Start GummyBears App

## Set up GummyBears Project in Spring Tool Suite 4 (STS4).

1. Start Spring Tool Suite 4 (STS4) application.

2. When STS4 starts it will offer to *Select a directory as workspace* for a project. Create a new folder called *GummyBearsProject* in your preferred location and press the *Launch* button.

3. STS4 will open an empty workspace and now you need to import the **GummyBears App** from the **GummyBears-main.zip** archive into the created workspace.
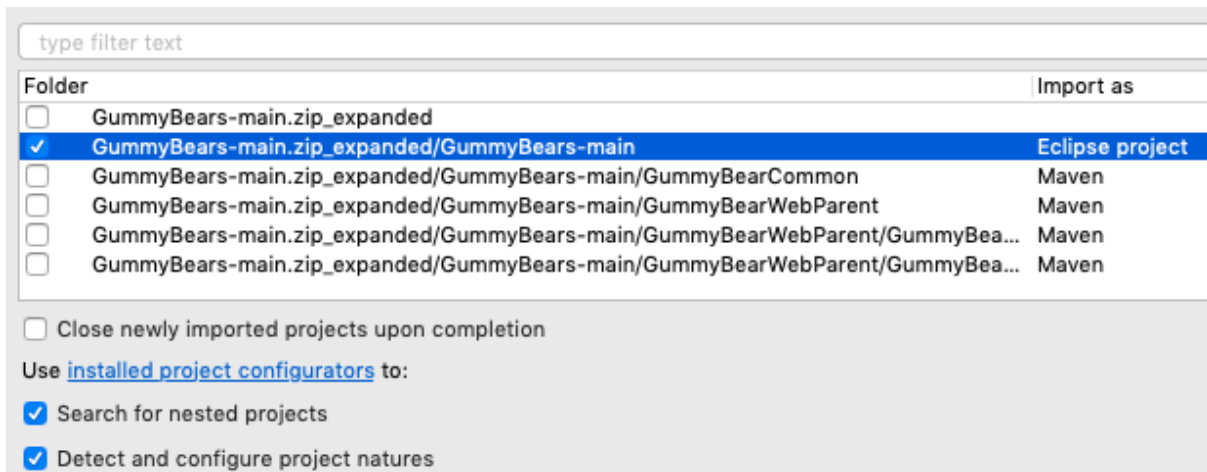
4. Press *Import projects...* button.
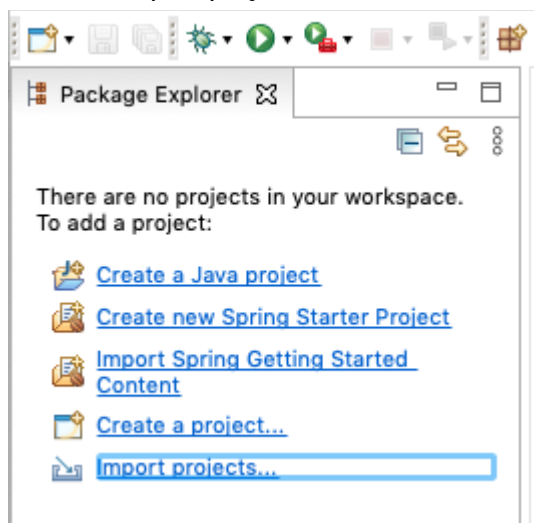
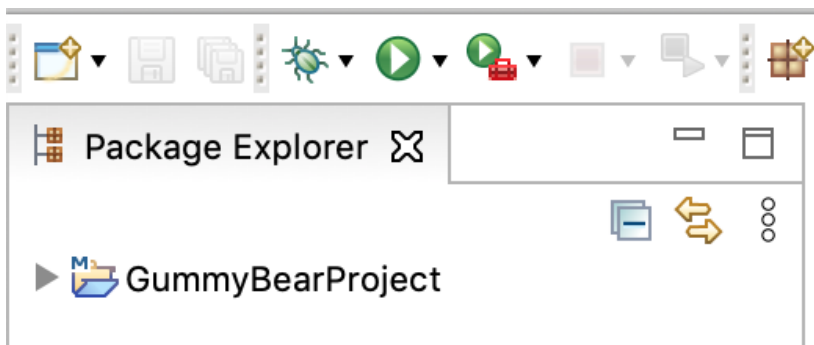5. Select *General → Projects from Folder or Archive* and press the *Next* button.
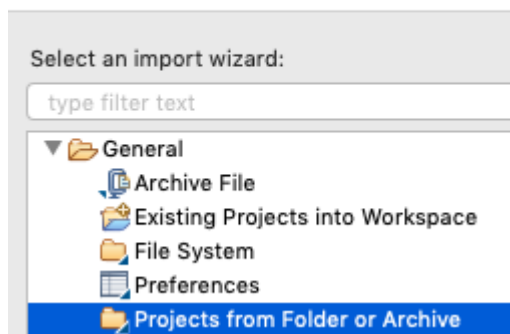
6. Press the *Archive...* button next to the *Input source:* field and select **GummyBears-main.zip** file.
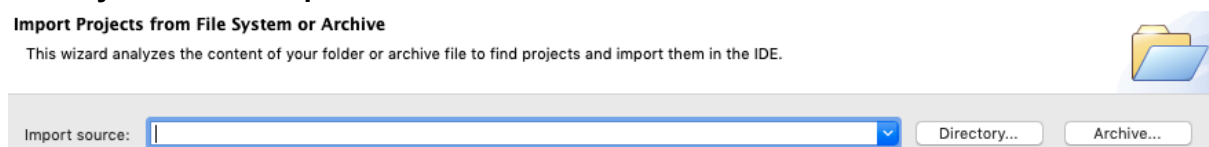
7. When the **GummyBears-main.zip** archive will be loaded a list of available modules will be shown. Only tick a box for **GummyBears-main.zip_expanded/GummyBears-main.** And press the *Finish* button.

type filter text	
Folder	**Import as**
☐ GummyBears-main.zip_expanded	
☑ GummyBears-main.zip_expanded/GummyBears-main	**Eclipse project**
☐ GummyBears-main.zip_expanded/GummyBears-main/GummyBearCommon	Maven
☐ GummyBears-main.zip_expanded/GummyBears-main/GummyBearWebParent	Maven
☐ GummyBears-main.zip_expanded/GummyBears-main/GummyBearWebParent/GummyBea...	Maven
☐ GummyBears-main.zip_expanded/GummyBears-main/GummyBearWebParent/GummyBea...	Maven

☐ Close newly imported projects upon completion

Use installed project configurators to:

☑ Search for nested projects

☑ Detect and configure project natures

8. The **GummyBearProject** folder must appear in the Package Explorer tab of the STS4.

9. Now we need to import the **GummyBearCommon** and **GummyBearWebParent** modules. Click on **GummyBearProject** directly in the *Package Explorer* tab (it will become blue) and then go to *File → Import*. In the new window select *General → Project from Folder or Archive* and press *Next* button.

10. In the new window tick the boxes for **GummyBears-main/GummyBearCommon**, **GummyBears-main/GummyBearWebParent,** **GummyBears-main/GummyBearWebParent/GummyBearBackEnd** and **GummyBears-main/GummyBearWebParent/GummyBearFrontEnd** folders and press *Finish* button.
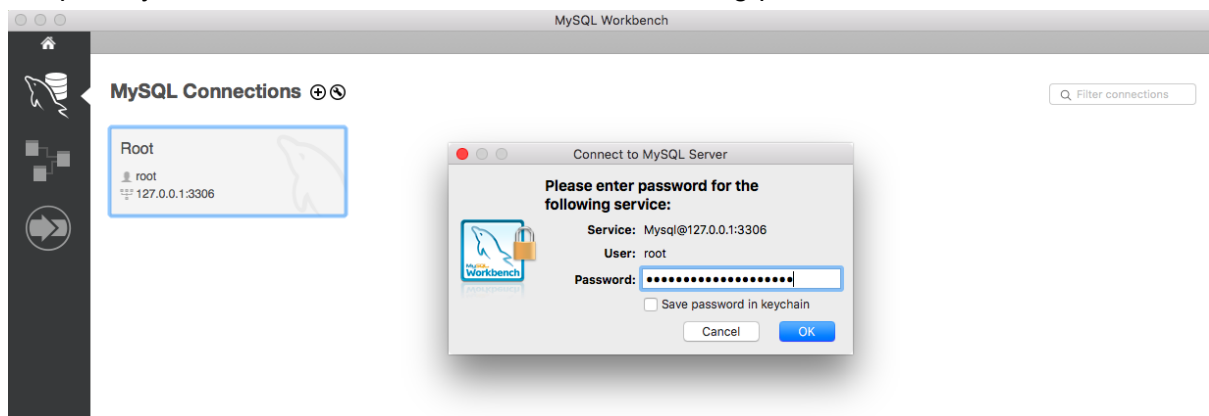
type filter text	
Folder	**Import as**
☐ GummyBears-main	Folder already imported a...
☑ GummyBears-main/GummyBearCommon	Maven
☑ GummyBears-main/GummyBearWebParent	Maven
☑ GummyBears-main/GummyBearWebParent/GummyBearBackEnd	Maven
☑ GummyBears-main/GummyBearWebParent/GummyBearFrontEnd	Maven
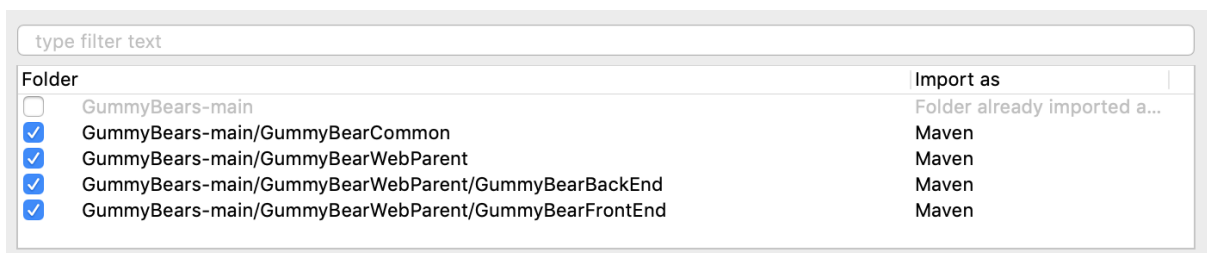
11. All modules will become visible in the *Package Explorer* tab in the STS4.
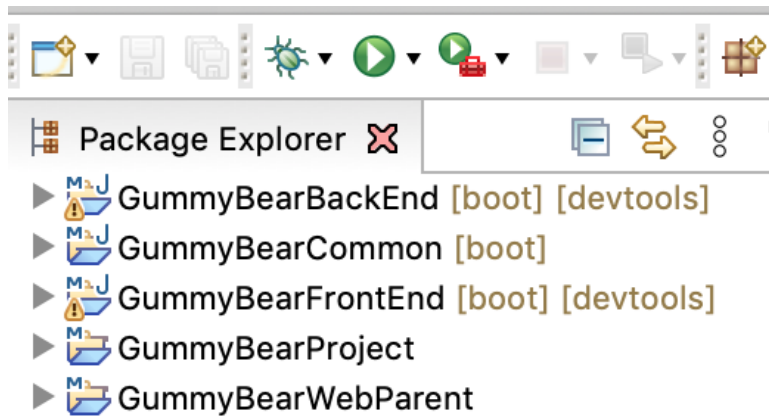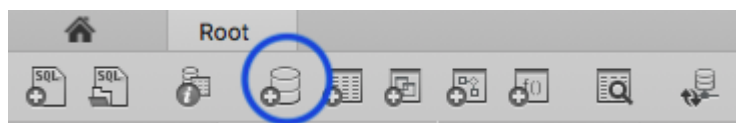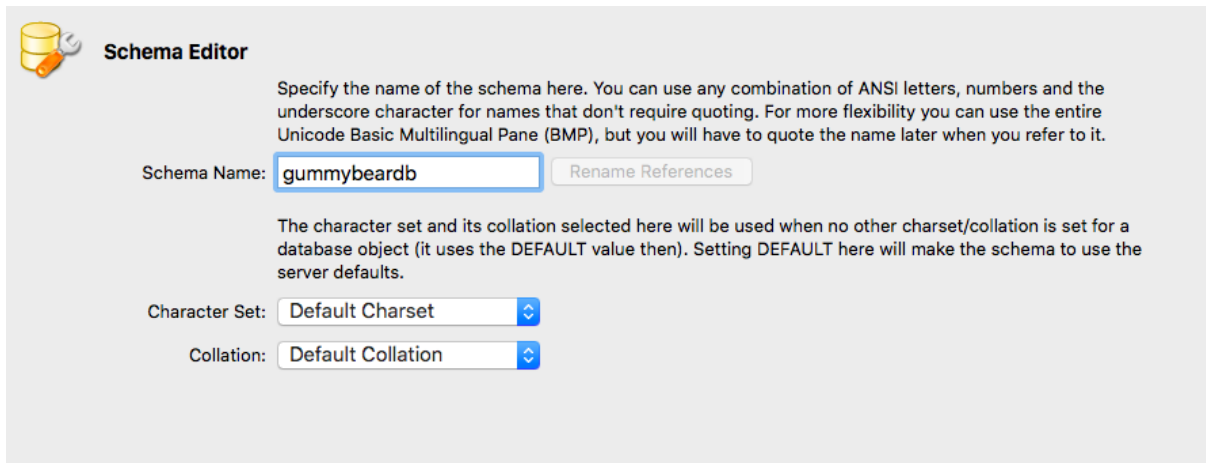
Set up MySQL database connection

1. Start MySQL server.

2. Open MySQL workbench and connect to the root using password.

3. Create a new schema.

4. Call the new schema *gummybeardb* and click "Apply"

5. *gummybeardb* Database appears on the left panel.
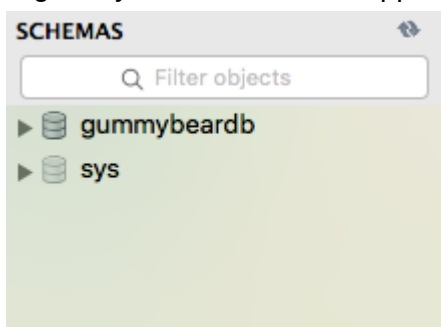
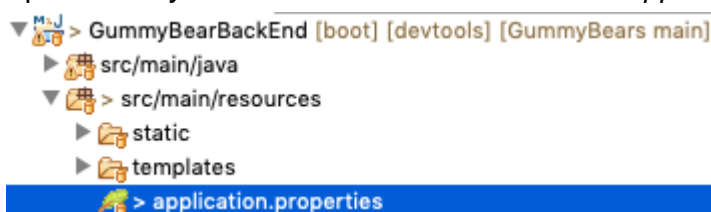6. Put your MySQL root password in the *application.properties* files of the **GummyBears** application, otherwise the application won't be able to connect to the Database.

Open *GummyBearBackEnd/src/main/resources/application.properties* file

and *GummyBearFrontEnd/src/main/resources/application.properties* file

and update the *spring.datasource.password* field with your password.

```properties
*application.properties ⊠
1  server.port=8080
2  server.servlet.context-path=/GummyBearAdmin
3
4  spring.datasource.url=jdbc:mysql://localhost:3306/gummybeardb
5  spring.datasource.username=root
6  spring.datasource.password=PUT-YOUR-PASSWORD-HERE
```
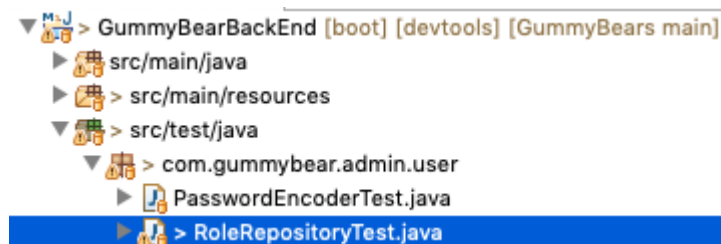
Fill in Database with the test records
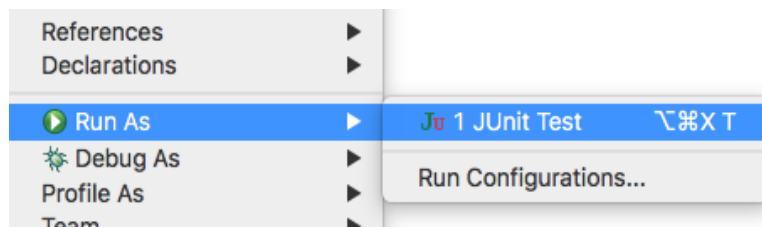
Create table with roles

1. Run tests in
GummyBearBackEnd/src/test/java/com/gummybear/admin/user/RoleRepositoryTest.java
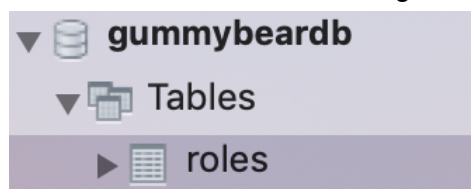file. They will generate Admin and Employee entries in the *roles* table.

With the right mouse click press on the *RoleRepositoryTest.java* file

and select *Run As* and press *JUnit Test*.

This creates table *roles* in the *gummybeardb.*

The content of the *roles* table can be viewed in the MySQL Workbench.

| id	description	name
1	Manage employee accounts	Admin
2	Company employee	Employee
NULL	NULL	NULL

Create table with users

1. Run tests in
*GummyBearBackEnd/src/test/java/com/gummybear/admin/user/UserRepositoryAddUsersTe
st.java* file. They will generate user entries (company workers) in the *users* table.

With the right mouse click press on the *UserRepositoryAddUsersTest.java* file

and select *Run As* and press *JUnit Test*.

This creates table *users* in the *gummybeardb.*

The content of the *users* table can be viewed in the MySQL Workbench.

id	email	enabled	first_name	job_title	last_name	password
1	anna@gummybear.com	1	Anna	NULL	Doe	$2a$10$PXw(
2	john@gummybear.com	1	John	NULL	Doe	$2a$10$7Wd:
3	bob@gummybear.com	1	Bob	NULL	Doe	$2a$10$l4nC
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Start Gummy Bear Application

1. Run the GummyBearFrontEnd module and wait for an application to start.
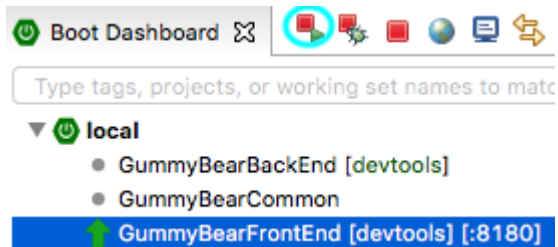
2. Run the GummyBearBackEnd module and wait for an application to start.
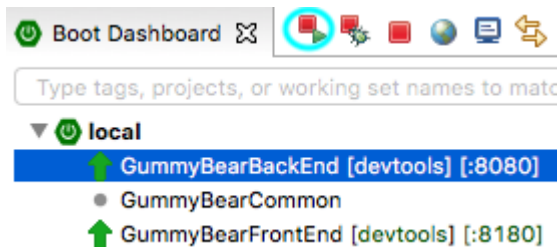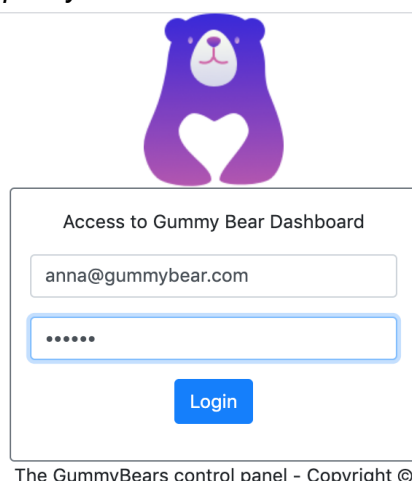

Explore GummyBears App

Time Statements

1. Open the web browser and type the following address: http://localhost:8180/GummyBear/ in the search bar.

2. Type employee credentials to login: username - anna@gummybear.com; password - *qwerty*.

3. This will open up a *Home* page showing information about an Employee.
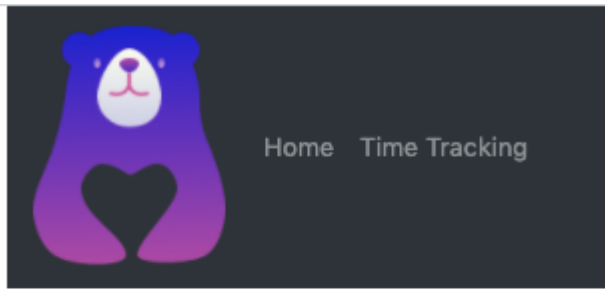
Employee Time Tracking

- First Name: Anna
- Last Name: Doe
- Email: anna@gummybear.com
- Expected working hours per week: 8.0

Login time: 28/05/2021, 09:30:38.

4. The *Time Tracking* page consists of several sections which are described in more details below.

Register Working Hours

Check-In

Check-Out

Time Overview Today
Registered working time [hrs:mins:secs]: 1:07:19
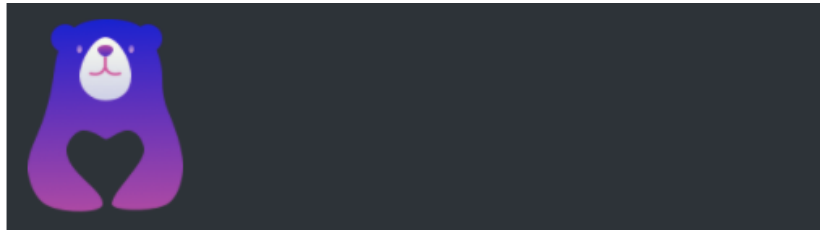Remaining working time [hrs:mins:secs]: 6:52:41

Event Id	Start Time	End Time	Difference
9	2021/05/28 09:27	2021/05/28 10:28	01:00:31
7	2021/05/28 09:20	2021/05/28 09:27	00:06:48

Time Overview Total

Event Id	Start Time	End Time	Difference
9	2021/05/28 09:27	2021/05/28 10:28	01:00:31
7	2021/05/28 09:20	2021/05/28 09:27	00:06:48
5	2021/05/27 22:50	2021/05/27 23:53	01:02:45
3	2021/05/27 22:40	2021/05/27 22:40	00:00:13
1	2021/05/27 22:39	2021/05/27 22:39	00:00:15

Login time: 28/05/2021, 10:39:01.

5. The *Register Working Hours* section allows to register check-in and check-out time by pressing "Check-in" and "Check-out" buttons respectively. A message showing time registered in the Database will be displayed.

The Check-Out time of 2021/05/28 10:28 was registered succesfully.

Register Working Hours

Check-In

Check-Out

6. The *Time Overview Today* section shows the registered and the remaining working time for today as well as a table showing the exact working periods - start and end of work and the difference.

Time Overview Today

Registered working time [hrs:mins:secs]: 1:07:19
Remaining working time [hrs:mins:secs]: 6:52:41

Event Id	Start Time	End Time	Difference
9	2021/05/28 09:27	2021/05/28 10:28	01:00:31
7	2021/05/28 09:20	2021/05/28 09:27	00:06:48

7. The *Time Overview Total* section shows the working periods (start, end and a difference) for the whole time including previous days.

Time Overview Total

Event Id	Start Time	End Time	Difference
9	2021/05/28 09:27	2021/05/28 10:28	01:00:31
7	2021/05/28 09:20	2021/05/28 09:27	00:06:48
5	2021/05/27 22:50	2021/05/27 23:53	01:02:45
3	2021/05/27 22:40	2021/05/27 22:40	00:00:13
1	2021/05/27 22:39	2021/05/27 22:39	00:00:15

8. Log out from the page by selecting a user's name in the top right corner and pressing the Logout button.
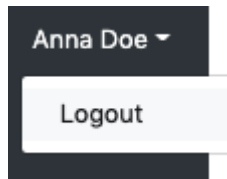
Admin Panel

1. Open the web browser and type the following address: http://localhost:8080/GummyBearAdmin/ in the search bar.

2. Type Admin credentials to login: username - bob@gummybear.com; password - *qwerty*.

3. Once logged in a user will be welcomed by a friendly message.
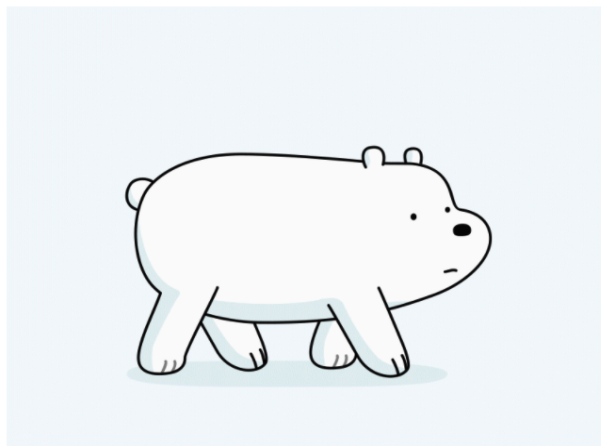
4. The *Users* tab contains a table showing information about all company employees. The employees can be enabled/disabled and deleted directly from this table by pressing an appropriate icon.

Company Employees
Create New User

User ID	First Name	Last Name	Email	Enabled Status	Role	Job Title	Working Hours	Enabled	
1	Anna	Doe	anna@gummybear.com	true	[Employee]		8.0	✓	✎ 🗑
2	John	Doe	john@gummybear.com	true	[Employee]		8.0	✓	✎ 🗑
3	Bob	Doe	bob@gummybear.com	true	[Admin, Employee]		8.0	✓	✎ 🗑

5. Information about existing employees can be modified by pressing the *blue pencil icon* in the table.

Manage Users | Edit User (ID: 1)

Email:	anna@gummybear.com
First Name:	Anna
Last Name:	Doe
Password:	
Working hours:	8.0
Roles:	☐ Admin - Manage employee accounts ☑ Employee - Company employee
Enabled:	☑

Save   cancel

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6. The *Create New User* tab will open a new window where a new user can be created by providing appropriate information.

Manage Users | Create New User

Email:	
First Name:	
Last Name:	
Password:	
Working hours:	
Roles:	☐ Admin - Manage employee accounts ☐ Employee - Company employee
Enabled:	☑

Save   cancel

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7. Log out from the page by selecting a user's name in the top right corner and pressing the Logout button.