Bookify

[Image of Home Page]

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# Installation Guide

The following installation instructions assume a Linux Debian-based operating system. However, installing and running the application in a Windows environment should be a similar process. The main differences concern the installation of various programs which will require you to download and run the installer from the vendor’s official website. We will be trying to cover all the information required to install and run the application no matter what operating system you are on.

There are various ways to run the application:

1. From the provided link running in our own virtual machine in the cloud.
2. Downloading the pre-built .jar file and running the app from there.
3. Downloading the source code and building it locally.

In the following sections we will be providing detailed instructions for each of those options. If you are running the server locally, please refer to [this](#_Run_Setup_Scripts) subsection to check how you can use the provided setup scripts to preload some useful data to the database.

## Run in the Cloud

The easiest way to quickly and effortlessly test our application is by using this link: <https://bookify.duckdns.org>. This will be the same as running any other online application from the browser and - latency aside - you will be able to use it as if it was running on your local machine. Please note that the application is running on our own rented virtual machine in the cloud which has very limited resources. Therefore, we can not guarantee uptime or response time when using this method. We also ask that you do not overload the server with a lot of big image files, as storage space is already limited. However, this method should be enough to demonstrate all the functionality required by the assignment.

## Run locally from pre-built files

Another option is to use the provided pre-compiled .jar file to run the server locally. However, this option will require significantly more effort on your part as it is necessary to download various components and set up the database. Please note that you will need to have administrator rights to the machine you are using. **Please try to avoid copying and pasting the Linux commands directly on a terminal as the pdf format will probably affect some of the special characters.**

1. If you are using Linux, make sure the package manager is up to date with this command:

*sudo apt update*

1. Install the Java Development Kit (JDK) if not already installed. For this you can either use the installer provided in the official website or on Linux you can run the following command:

*sudo apt install openjdk-18-jdk*

1. Install MySQL Server either via the official website or with this command if you are on Linux:

*sudo apt install mysql-server*

1. To set up the database you need to open a MySQL console if you are on Windows or execute the following command on Linux: *sudo mysql.* You will then need to execute the following commands (same in both operating systems):
   1. *create database db\_bookify;*
   2. *create user ‘admin’@’localhost’ identified by ‘[password]’;* where *[password]* will be the password you want to set for the database user.
   3. *grant all privileges on \*.\* to ‘admin’@’localhost’;*
2. You can now close the MySQL console and use the terminal of your operating system to navigate to the build folder of the deliverable we provided. An example, that still requires you to provide the appropriate path, is this command: *cd C:/Users/[USER]/Documents/*bookify/build.
3. After you have **correctly** executed **all the steps** described above you can run the executable using this command:

java -jar bookify-0.0.1-SNAPSHOT.jar --upload.directory.root= *C:/Users/[USER]/Documents/*bookify --spring.datasource.password=[password]

The provided options are crucial to the correct execution of the application. --upload.directory.root defines a path to the parent folder the application can use to store the required data such as images, recommendation results etc. If the given path does not exist, the application will create it **if and only if** it has the required permissions to do so. As a result, please make sure you only provide a path the application will actually have access to write to.

The --spring.datasource.password option defines the password of the database user as created in step 4b. The app assumes the password ‘1234’ for the database user, so if your password is different than that you will need to set it using this option. Other options that may be useful are

* spring.datasource.username which defines the username of the database user (default: admin).
* server.port=8443 which defines the port the server will be listening to (default: 8443).

After successfully executing those instructions, you should have a Spring Boot application up and running in your terminal. It will take between 5-20 seconds to startup. Immediately after, it will start running the recommendation algorithm in the background if any rooms and users are available.

We have set up server to provide all the pages of the website to the browser when requested. Therefore, it is not required to create any additional static server to serve the website content. The only thing that should be required to use the app once the server is running is to open your browser and type the following into the address bar: <https://localhost:8443>.

**IMPORTANT:** due to our SSL certificate being self-signed most of the browsers will reject those requests. It is therefore necessary to add an exception to the browser for our website. If the browser shows you a message rejecting the request, click on the advanced options button and then click on proceed/add exception. If you do not manage to get the exception done this way, you will need to manually set it via your browser’s security settings.

## Build and Run Locally

It is also possible to compile and run the code yourself on your local machine. The steps are similar to those of the previous section, but you will now need to execute the following steps instead of step 5 to build the project locally:

1. Install Maven (the build tool). In Linux this can be done with this command: *sudo apt install maven.*
2. In the terminal of your operating system, navigate to the bookifySystem subfolder in the provided deliverable. An example of this command, that still requires you to provide the correct path, is the following: *cd C:/Users/[USER]/Documents/*bookify/bookifySystem.
3. Use the following command to build and run the project: *mvn spring-boot:run.* Please note that the first time this command is executed, Maven may need some time to download all the required dependencies and then compile and run the project. When it is done you should have a Spring Application running in your terminal. Refer to the previous section for instructions on how to use the app from your browser.
4. Other useful Maven commands include:
   1. *mvn clean:* cleans up all the build files.
   2. *mvn package:* packages the application into a .jar file that can be easily distributed, deployed or moved around.

## Run Setup Scripts

When running the application locally on your machine for the first time, the database will contain no useful data such as rooms and users, apart from the preinstalled admin user. We have created a python script to fill in the database with reviews, users and rooms from the dataset that came with the assignment. To use this script, you will need to follow these instructions:

1. Install Python 3 via the official website or using this Linux command: *sudo apt install python3-pip.* Make sure that Python is also added to PATH if you are using Windows.
2. Install the required package to allow python to connect to the database with this command:

*pip install mysql-connector-python*

1. {Describe how to set credentials}
2. {Describe how to run script}

Depending on how fast your machine is, this script should need a couple of minutes to load all the necessary data. When it is done, you will find that the website now includes a lot of rooms and reviews associated with them.

# Application Features

# Architecture Breakdown

## Database

## Backend/Server

## Frontend/Website

# API Documentation

# Attributions