

Chapter 1

1. Application Skeleton

1.1. Create Git Repository

1.2. Create Project

1.3. Spring Dependencies

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi=
"http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>
    <packaging>jar</packaging>

    <parent>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>2.7.4</version>
        <relativePath/> <!-- lookup parent from repository -->
    </parent>

    <groupId>de.kessel</groupId>
    <artifactId>simple-asciidoc-blog-application</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <name>ELENA - the simple asciidoc blog.</name>
    <description>A simple asciidoc blog application in spring boot.</description>

    <properties>
        <java.version>17</java.version>
        <jackson.databind.version>2.14.0-rc1</jackson.databind.version>
        <snakeyaml.version>1.33</snakeyaml.version>
    </properties>

    <dependencies>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-web</artifactId>
            <exclusions>
                <exclusion>
                    <groupId>com.fasterxml.jackson.core</groupId>
                    <artifactId>jackson-databind</artifactId>
```

```

        </exclusion>
        <exclusion>
            <groupId>org.yaml</groupId>
            <artifactId>snakeyaml</artifactId>
        </exclusion>
    </exclusions>
</dependency>
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-data-jpa</artifactId>
</dependency>
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-test</artifactId>
    <scope>test</scope>
</dependency>
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-devtools</artifactId>
    <optional>true</optional>
</dependency>
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-thymeleaf</artifactId>
</dependency>
<dependency>
    <groupId>com.fasterxml.jackson.core</groupId>
    <artifactId>jackson-databind</artifactId>
    <version>${jackson.databind.version}</version>
</dependency>
<dependency>
    <groupId>org.yaml</groupId>
    <artifactId>snakeyaml</artifactId>
    <version>${snakeyaml.version}</version>
</dependency>
<dependency>
    <groupId>com.h2database</groupId>
    <artifactId>h2</artifactId>
    <scope>runtime</scope>
</dependency>
<dependency>
    <groupId>org.postgresql</groupId>
    <artifactId>postgresql</artifactId>
    <version>42.5.0</version>
    <scope>runtime</scope>
</dependency>
<dependency>
    <groupId>org.projectlombok</groupId>
    <artifactId>lombok</artifactId>
    <optional>true</optional>
</dependency>

```

```

</dependencies>

<build>
  <plugins>
    <plugin>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-maven-plugin</artifactId>
      <version>2.7.4</version>
    </plugin>
  </plugins>
</build>
</project>

```

1.4. Source Code:

1.4.1. Create PostBlog Entity

```

package de.kessel.elena.entity;

import lombok.Getter;
import lombok.Setter;

import javax.persistence.*;
import java.time.LocalDate;

@Getter
@Setter
@Entity
public class PostBlog {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    @Column
    protected Integer id;

    @Lob
    protected String text;

    protected LocalDate createdAt;

    protected LocalDate updatedAt;

}

```

1.4.2. Create PostBlog Repository

```
package de.kessel.elena.repository;

import de.kessel.elena.entity.PostBlog;
import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.stereotype.Repository;

@Repository
public interface PostBlogRepository extends JpaRepository<PostBlog, Integer> {
}
```

1.4.3. Create PostBlog Service

```
package de.kessel.elena.service;

import de.kessel.elena.entity.PostBlog;
import de.kessel.elena.repository.PostBlogRepository;
import org.springframework.stereotype.Service;

import java.util.List;

@Service
public class PostBlogService {
    private final PostBlogRepository repository;

    public PostBlogService(final PostBlogRepository repository){
        this.repository = repository;
    }

    public PostBlog savePostBlog(final PostBlog postBlog){
        return repository.save(postBlog);
    }

    public List<PostBlog> savePostBlogs(final List<PostBlog> postBlogs){
        return repository.saveAll(postBlogs);
    }

    public List<PostBlog> findPostBlogs(){
        return repository.findAll();
    }
}
```

1.4.4. Create Example Data

```
package de.kessel.elena.config;
```

```

import de.kessel.elena.entity.PostBlog;
import de.kessel.elena.service.PostBlogService;
import org.springframework.boot.CommandLineRunner;
import org.springframework.stereotype.Component;

import java.time.LocalDate;
import java.util.List;

@Component
public class DataInstaller implements CommandLineRunner {

    private final PostBlogService postBlogService;

    public DataInstaller(final PostBlogService postBlogService) {
        this.postBlogService = postBlogService;
    }

    @Override
    public void run(String... args) throws Exception {
        List<PostBlog> postBlogs = List.of(
            createPostBlog(asciidocListen()),
            createPostBlog(asciidocChecklisten()),
            createPostBlog(asciidocAufzaehlung()),
            createPostBlog(asciidocLabeledLists()),
            createPostBlog(asciidocQuotes()),
            createPostBlog(asciidocBlock()),
            createPostBlog(asciidocCodeBlocksWithCallouts()),
            createPostBlog(asciidocTable()),
            createPostBlog(loreIpsum()),
            createPostBlog(asciidocMath()),
            createPostBlog(asciidocSourceCode()),
            createPostBlog(asciidocUnconstrainedText()),
            createPostBlog(asciidocHighlightedText()),
            createPostBlog(asciidocSuperscriptedText()),
            createPostBlog(asciidocQuote()),
            createPostBlog(asciidocQuotes())
        );

        postBlogService.savePostBlogs(postBlogs);
    }

    private PostBlog createPostBlog(final String text){
        PostBlog postBlog = new PostBlog();
        postBlog.setCreatedAt(LocalDate.now());
        postBlog.setUpdatedAt(LocalDate.now());
        postBlog.setText(text);
        return postBlog;
    }

    private String asciidocListen() {
        return """

```

```

        == Listen

        * Element
        ** nächstes Element
        * weiteres Element
        """;
    }

    private String asciidocChecklisten() {
        return ""
            == Checklisten

            - [ ] noch nicht erledigt
            - [*] erledigt
            """;
    }

    private String asciidocAufzaehlung() {
        return ""
            == Aufzählung

            . erstes Element
            . zweites Element
            .. erstes Unterelement
            """;
    }

    private String asciidocLabeledLists() {
        return ""
            == Labeled Lists

            Label:: Beschreibung
            noch ein Label:: eine weitere Beschreibung
            """;
    }

    private String asciidocQuote() {
        return ""
            == Quote

            [quote, Bill Gates, Microsoft]

            ----
            640 KB are enough for everyone.
            ----
            """;
    }

    private String asciidocBlock() {
        return ""
            == Literal Block

            ....

```

```

        Jetzt wird alles
        wie angegeben
        - ausgegeben.
        """
    }

    private String asccidocCodeBlocksWithCallouts() {
        return """
            == Code Block

            [source,java]
            ----
            public class EnterpriseAbstractFactory { ①
                public doSomething(int howLong) {
                    Thread.sleep(howLong); ②
                }
            }
            ----

            <1> to short
            <2> busy waiting pleas
            """
    }

    private String asciidocTable() {
        return """
            == Table

            [cols="1,1"]
            |===
            |Cell in column 1, header row |Cell in column 2, header row

            |Cell in column 1, row 2
            |Cell in column 2, row 2

            |Cell in column 1, row 3
            |Cell in column 2, row 3

            |Cell in column 1, row 4
            |Cell in column 2, row 4
            |===
            """
    }

    private String loreIpsum() {
        return """
            == Lore Ipsum

            Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam
            nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam
            voluptua. At vero eos et accusam et justo duo dolores et ea rebum.
        """
    }

```

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volutpat.

"";

}

```
private String asciidocMath() {
```

```
    return ""
```

```
        == Math
```

```
        Here is an example, latexmath:[e^{i \pi} + 1 = 0].
```

```
        [latexmath]
```

```
        ++++
```

```
        \frac{\partial V}{\partial t}
```

```
+ \frac{1}{2} \sigma^2 S^2 \frac{\partial^2 V}{\partial S^2}
```

```
+ r S \frac{\partial V}{\partial S}
```

```
- r V = 0
```

```
        ++++
```

```
        "";
```

```
}
```

```
private String asciidocSourceCode() {
```

```
    return ""
```

```
        .Optional Title
```

```
        [source,java]
```

```

        ----
        public void main(String[] args) throws Exception {
            System.out.println("Hello World!")
        }
        ----
        """;
    }

    private String asciidocUnstainedText() {
        return """
            It has strong significance to me.

            I cannot stress this enough.

            Type `OK` to accept.

            That *_really_* has to go.

            Can't pick one? Let's use them `*_all_*`.
            """;
    }

    private String asciidocUnconstrainedText() {
        return """
            create, read, update, and delete (CRUD)

            That's fan__freakin__tastic!

            Don't pass generic ``Object``s to methods that accept ``String``s!

            It was Beatle__mania__!
            """;
    }

    private String asciidocHighlightedText() {
        return """
            Werewolves are allergic to #cinnamon#.

            ##Mark##up refers to text that contains formatting ##mark##s.

            Where did all the [.underline]#cores# go?

            We need [.line-through]#ten# twenty VMs.

            A [.myrole]#custom role# must be fulfilled by the theme.
            """;
    }

    private String asciidocSuperscriptedText() {
        return """
            ^super^script phrase

```

```

        ~sub~script phrase
        """;
    }

    private String ascdiiodocQuotes() {
        return ""
            "`double curved quotes`"

            ``single curved quotes``

            Olaf's desk was a mess.

            A ``std::vector``'s size is the number of items it contains.

            All of the werewolves`` desks were a mess.

            Olaf had been with the company since the ``00s.
            """;
    }
}

```

1.4.5. H2 Profile for H2

```

spring.datasource.url=jdbc:h2:mem:testdb;DB_CLOSE_ON_EXIT=FALSE
spring.datasource.driverClassName=org.h2.Driver
spring.datasource.username=sa
spring.datasource.password=
spring.jpa.database-platform=org.hibernate.dialect.H2Dialect
spring.jpa.hibernate.ddl-auto=create
spring.h2.console.enabled=true
spring.jpa.show-sql=true
spring.thymeleaf.encoding=utf-8
spring.mvc.hiddenmethod.filter.enabled=true

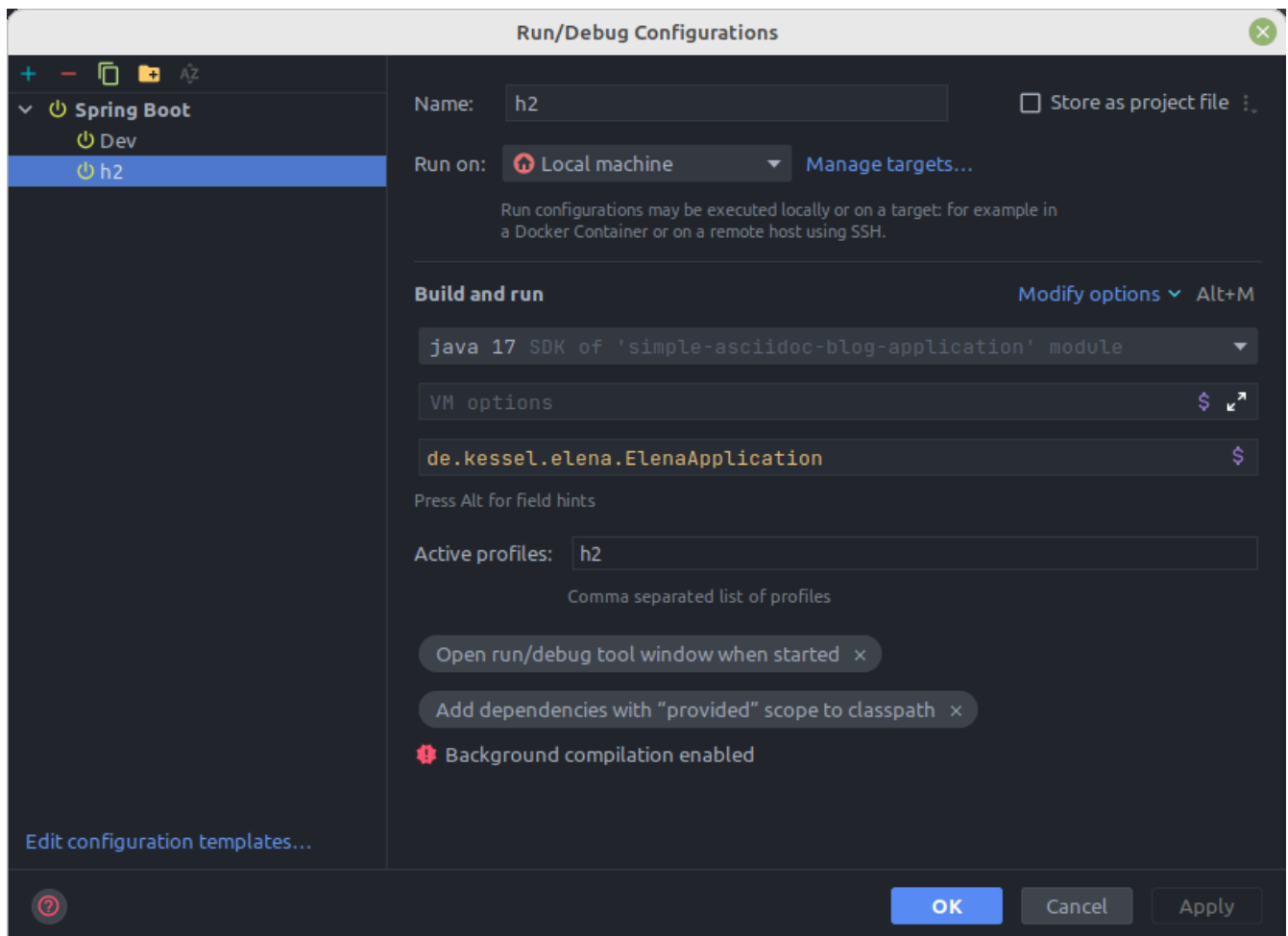
```

1.4.6. Run Application

Run Application over Maven

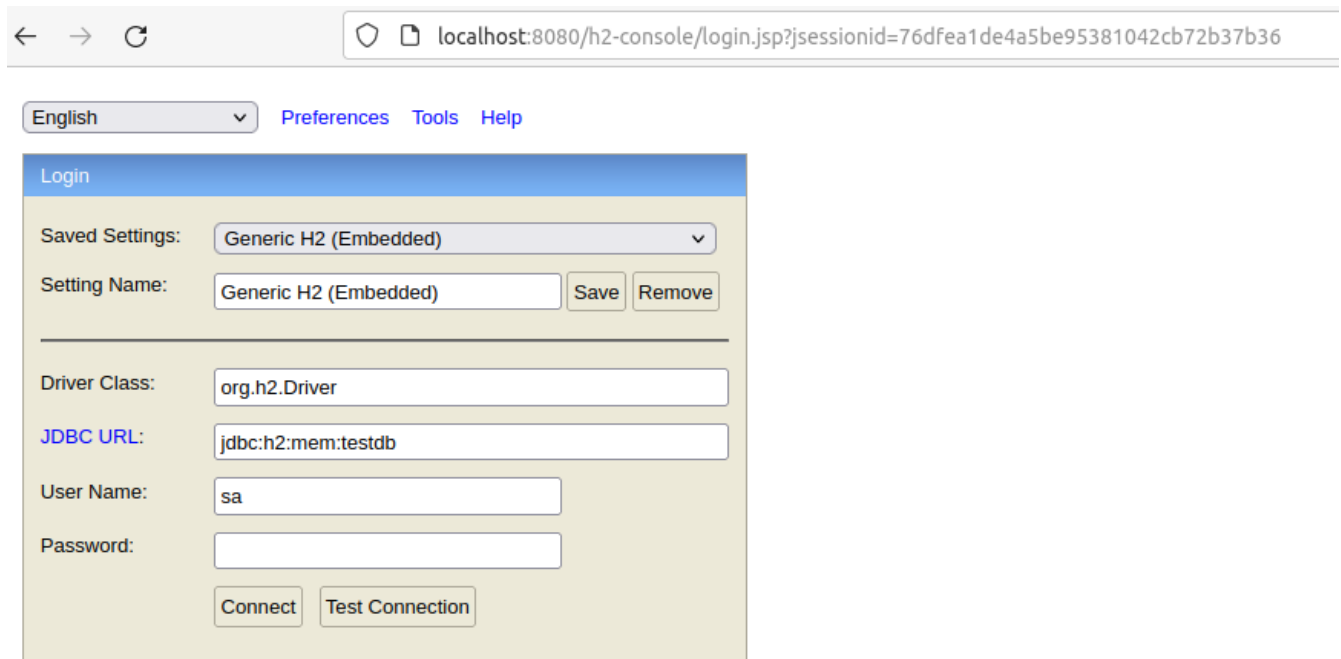
```
mvn spring-boot:run
```

Run Application with Profile h2



]

1.4.7. Test on the h2 Database



Auto commit

Max rows: 1000

Auto complete
Off

Auto select
On

jdbc:h2:mem:testdb

POST_BLOG
INFORMATION_SCHEMA
Users
H2 2.1.214 (2022-06-13)

Run
Run Selected
Auto complete
Clear
SQL statement:

SELECT * FROM POST_BLOG |

Important Commands

| | | |
|--|-------------|----------------------------------------------------------|
| | | Displays this Help Page |
| | | Shows the Command History |
| | Ctrl+Enter | Executes the current SQL statement |
| | Shift+Enter | Executes the SQL statement defined by the text selection |
| | Ctrl+Space | Auto complete |
| | | Disconnects from the database |

Sample SQL Script

| | |
|---------------------------------------------|-----------------------------------------------------------|
| Delete the table if it exists | DROP TABLE IF EXISTS TEST; |
| Create a new table with ID and NAME columns | CREATE TABLE TEST(ID INT PRIMARY KEY, NAME VARCHAR(255)); |
| Add a new row | INSERT INTO TEST VALUES(1, 'Hello'); |
| Add another row | INSERT INTO TEST VALUES(2, 'World'); |
| Query the table | SELECT * FROM TEST ORDER BY ID; |
| Change data in a row | UPDATE TEST SET NAME='Hi' WHERE ID=1; |
| Remove a row | DELETE FROM TEST WHERE ID=2; |
| Help | HELP ... |

Adding Database Drivers

Additional database drivers can be registered by adding the Jar file location of the driver to the environment variables H2DRIVER_PATH. For example, for the H2 database driver, the path would be C:/Programs/hsqldb/lib/hsqldb.jar.