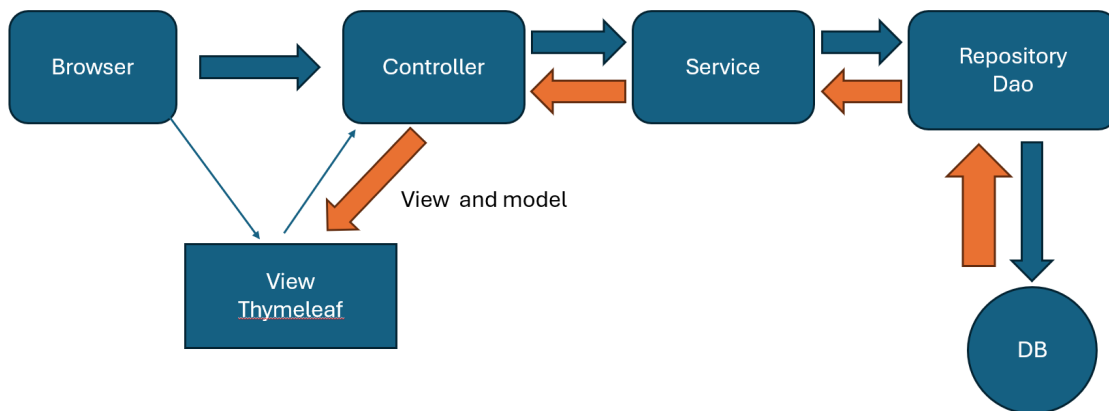


Spring boot Thymeleaf

Spring Boot 請求與回應



樣板(主頁)

Navbar

Home

Link

Dropdown ▾

Disabled

Search

Search

List Student

Add Students

Student First Name	Student Last Name	Student Email	Actions
Tom	Yang	Tom123@gmail.com	<div>更新</div> <div>刪除</div>
Jason	chan	jason@gmail.com	<div>更新</div> <div>刪除</div>
聯成	電腦公司	lccnet@gmail.com	<div>更新</div> <div>刪除</div>
john	cena	john@gmail.com	<div>更新</div> <div>刪除</div>

新增

刪除

更新

刪除

新增

Navbar

Home

Link

Dropdown ▾

Disabled

Search

Search

Create New Student

Student First Name

Enter Student First Name

Student Last Name

Enter Student last Name

Student Email

Enter Student Email

submit

正在加载资源... 停止分页

更新

Navbar

Home

Link

Dropdown ▾

Disabled

Search

Search

Update Student

Student First Name

Tom

Student Last Name

Yang

Student Email

Tom123@gmail.com

submit

正在加载资源... 停止分页

pom.xml

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3     xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
  http://maven.apache.org/xsd/maven-4.0.0.xsd">
4     <modelVersion>4.0.0</modelVersion>
5     <parent>
6         <groupId>org.springframework.boot</groupId>
7         <artifactId>spring-boot-starter-parent</artifactId>
8         <version>3.3.0</version>
9         <relativePath/> <!-- lookup parent from repository -->
10    </parent>
11    <groupId>tw.com.lccnet.model</groupId>
12    <artifactId>Day07</artifactId>
```

```

13     <version>1.0</version>
14     <name>Day07</name>
15     <description>Demo project for Spring Boot</description>
16     <properties>
17         <java.version>17</java.version>
18     </properties>
19     <dependencies>
20         <dependency>
21             <groupId>org.springframework.boot</groupId>
22             <artifactId>spring-boot-starter-thymeleaf</artifactId>
23         </dependency>
24         <dependency>
25             <groupId>org.springframework.boot</groupId>
26             <artifactId>spring-boot-starter-web</artifactId>
27         </dependency>
28
29         <dependency>
30             <groupId>org.springframework.boot</groupId>
31             <artifactId>spring-boot-devtools</artifactId>
32             <scope>runtime</scope>
33             <optional>true</optional>
34         </dependency>
35         <dependency>
36             <groupId>org.springframework.boot</groupId>
37             <artifactId>spring-boot-starter-test</artifactId>
38             <scope>test</scope>
39         </dependency>
40         <dependency>
41             <groupId>org.springframework.boot</groupId>
42             <artifactId>spring-boot-starter-data-jpa</artifactId>
43         </dependency>
44         <dependency>
45             <groupId>com.mysql</groupId>
46             <artifactId>mysql-connector-j</artifactId>
47             <scope>runtime</scope>
48         </dependency>
49     </dependencies>
50
51     <build>
52         <plugins>
53             <plugin>
54                 <groupId>org.springframework.boot</groupId>
55                 <artifactId>spring-boot-maven-plugin</artifactId>
56             </plugin>
57         </plugins>
58     </build>
59
60 </project>
61

```

目錄結構

- ▼ 📁 Day07 [boot] [devtools]
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 - > 📁 entity
 - > 📁 respository
 - > 📁 service
 - > 📄 Day07Application.java
 - ▼ 📁 src/main/resources
 - 📁 static
 - ▼ 📁 templates
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 - > 📁 src/test/java
 - > 📁 JRE System Library [JavaSE-17]
 - > 📁 Maven Dependencies
 - > 📁 src
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 - 📄 mvnw
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 - 📄 pom.xml

thymeleaf

student.html

```

1  <!DOCTYPE html>
2  <html xmlns:th="http://www.thymeleaf.org">
3  <head>
4  <meta charset="UTF-8">
5  <meta name="viewport" content="width=device-width, initial-scale=1">
6  <title>title</title>
7  <!-- 導入css -->
8  <link th:href="@{/css/main.css}" rel="stylesheet">
9  <!-- 導入js -->
10 <script type="text/javascript" th:src="@{/js/action.js}"></script>
11 <link
12
13 href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/css/bootstrap.min.c
14 ss"
15 rel="stylesheet"
  integrity="sha384-
  F3w7mX95PdgyTmZZMECangseQB83DfGTowi0iMjiwaeVhAn4FJkqJByhZMI3AhiU"
  crossorigin="anonymous">

```

```

16 </head>
17 <body>
18 <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
19   <div class="container-fluid">
20     <a class="navbar-brand" href="#">Navbar</a>
21     <button class="navbar-toggler" type="button" data-bs-toggle="collapse"
data-bs-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle
navigation">
22       <span class="navbar-toggler-icon"></span>
23     </button>
24     <div class="collapse navbar-collapse" id="navbarSupportedContent">
25       <ul class="navbar-nav me-auto mb-2 mb-lg-0">
26         <li class="nav-item">
27           <a class="nav-link active" aria-current="page"
th:href="@{/students}">Home</a>
28         </li>
29         <li class="nav-item">
30           <a class="nav-link" href="#">Link</a>
31         </li>
32         <li class="nav-item dropdown">
33           <a class="nav-link dropdown-toggle" href="#" id="navbarDropdown"
role="button" data-bs-toggle="dropdown" aria-expanded="false">
34             Dropdown
35           </a>
36           <ul class="dropdown-menu" aria-labelledby="navbarDropdown">
37             <li><a class="dropdown-item" href="#">Action</a></li>
38             <li><a class="dropdown-item" href="#">Another action</a></li>
39             <li><hr class="dropdown-divider"></li>
40             <li><a class="dropdown-item" href="#">Something else here</a>
41           </li>
42         </ul>
43         <li class="nav-item">
44           <a class="nav-link disabled">Disabled</a>
45         </li>
46       </ul>
47       <form class="d-flex">
48         <input class="form-control me-2" type="search" placeholder="Search"
aria-label="Search">
49         <button class="btn btn-outline-success"
type="submit">Search</button>
50       </form>
51     </div>
52   </div>
53 </nav>
54
55 <br><br>
56 <div class="container">
57   <div class="row">
58     <h1 class="text-center"> List Student</h1>
59   </div>
60   <div class="row">
61     <div class="col-lg-3">
62       <a th:href="@{/students/new}" class="btn btn-outline-danger
mb-3">Add Students</a>
63     </div>
64   </div>

```

```

65
66         <table class="table table-striped table-bordered">
67             <thead class="table-dark">
68                 <tr>
69                     <th scope="col">Student First Name</th>
70                     <th scope="col">Student Last Name</th>
71                     <th scope="col">Student Email</th>
72                     <th scope="col">Actions</th>
73                 </tr>
74             </thead>
75             <tbody>
76                 <tr th:each="student:${students}">
77                     <td th:text="${student.firstName}"></td>
78                     <td th:text="${student.lastName}"></td>
79                     <td th:text="${student.email}"></td>
80                     <td>
81                         <a th:href="@{/students/edit/{id}
(id=${student.id})}" class="btn btn-primary">更新</a>
82                         <a th:href="@{/students/{id}(id=${student.id})}"
class="btn btn-danger">刪除</a>
83                     </td>
84                 </tr>
85             </tbody>
86         </table>
87
88     </div>
89
90
91
92
93
94
95
96     <script
97
98         src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/js/bootstrap.bundle.
min.js"
99
100         integrity="sha384-/bQdsTh/da6pkI1MST/rWKFJjaCP5gBSY4sEBT38Q/9RBh9AH40zEOg7H
1q2THRZ"
101         crossorigin="anonymous"></script>
102 </body>
103 </html>

```

create_student.html

```

1 <!DOCTYPE html>
2 <html xmlns:th="http://www.thymeleaf.org">
3 <head>
4 <meta charset="UTF-8">
5 <meta name="viewport" content="width=device-width, initial-scale=1">
6 <title>title</title>
7 <!-- 導入css -->
8 <link th:href="@{/css/main.css}" rel="stylesheet">
9 <!-- 導入js -->

```

```

10 <script type="text/javascript" th:src="@{/js/action.js}"></script>
11 <link
    href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/css/bootstrap.min.c
    ss" rel="stylesheet" integrity="sha384-
    F3w7mX95PdgyTmZZMECangseQB83DfGTowi0iMjiwaeVhAn4FJkqJByhZMI3Ahiu"
    crossorigin="anonymous">
12 </head>
13 <body>
14 <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
15     <div class="container-fluid">
16         <a class="navbar-brand" href="#">Navbar</a>
17         <button class="navbar-toggler" type="button" data-bs-toggle="collapse"
            data-bs-target="#navbarSupportedContent" aria-
            controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle
            navigation">
18             <span class="navbar-toggler-icon"></span>
19         </button>
20         <div class="collapse navbar-collapse" id="navbarSupportedContent">
21             <ul class="navbar-nav me-auto mb-2 mb-lg-0">
22                 <li class="nav-item">
23                     <a class="nav-link active" aria-current="page"
                        href="@{/students}">Home</a>
24                 </li>
25                 <li class="nav-item">
26                     <a class="nav-link" href="#">Link</a>
27                 </li>
28                 <li class="nav-item dropdown">
29                     <a class="nav-link dropdown-toggle" href="#" id="navbarDropdown"
                        role="button" data-bs-toggle="dropdown" aria-expanded="false">
30                         Dropdown
31                     </a>
32                     <ul class="dropdown-menu" aria-labelledby="navbarDropdown">
33                         <li><a class="dropdown-item" href="#">Action</a></li>
34                         <li><a class="dropdown-item" href="#">Another action</a></li>
35                         <li><hr class="dropdown-divider"></li>
36                         <li><a class="dropdown-item" href="#">Something else here</a>
37                     </li>
38                     </ul>
39                 </li>
40                 <li class="nav-item">
41                     <a class="nav-link disabled">Disabled</a>
42                 </li>
43             </ul>
44             <form class="d-flex">
45                 <input class="form-control me-2" type="search" placeholder="Search"
                    aria-label="Search">
46                 <button class="btn btn-outline-success"
                    type="submit">Search</button>
47             </form>
48         </div>
49 </nav>
50 <br><br>
51 <div class="container">
52     <div class="row">
53         <div class="col-lg-6 col-md-6 col-sm-6 container justify-
            content-center card">
54             <h1 class="text-center"> Create New Student </h1>

```

```

55         <div class="card-body">
56             <form th:action="@{/students}" th:object="${student}"
method="post">
57                 <div class="form-group">
58                     <label>Student First Name</label>
59                     <input
60                         type="text"
61                         name="firstName"
62                         th:field="*{firstName}"
63                         class="form-control"
64                         placeholder="Enter Student First Name">
65                 </div>
66
67                 <div class="form-group">
68                     <label>Student Last Name</label>
69                     <input
70                         type="text"
71                         name="lastName"
72                         th:field="*{lastName}"
73                         class="form-control"
74                         placeholder="Enter Student last Name">
75                 </div>
76
77
78                 <div class="form-group">
79                     <label>Student Email</label>
80                     <input
81                         type="text"
82                         name="email"
83                         th:field="*{email}"
84                         class="form-control"
85                         placeholder="Enter Student Email">
86                 </div>
87
88                 <div class="box-footer">
89                     <button type="submit" class=" btn btn-primary">
90                         submit
91                     </button>
92                 </div>
93
94
95             </form>
96
97         </div>
98     </div>
99
100 </div>
101
102
103
104 </div>
105
106
107 <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/js/bootstrap.bundle.
min.js"
integrity="sha384-/bQdsTh/da6pkI1MST/rwKFNjaCP5gBSY4sEBT38Q/9RBh9AH40zEOg7H
lq2THRZ" crossorigin="anonymous"></script>

```



```
108 </body>
109 </html>
```

edit_student.html

```

1 <!DOCTYPE html>
2 <html xmlns:th="http://www.thymeleaf.org">
3 <head>
4 <meta charset="UTF-8">
5 <meta name="viewport" content="width=device-width, initial-scale=1">
6 <title>title</title>
7 <!-- 導入css -->
8 <link th:href="@{/css/main.css}" rel="stylesheet">
9 <!-- 導入js -->
10 <script type="text/javascript" th:src="@{/js/action.js}"></script>
11 <link
12 href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/css/bootstrap.min.c
13 ss" rel="stylesheet" integrity="sha384-
14 F3w7mx95PdgyTmZZMECAngseQB83DfGTowi0iMjiwaeVhAn4FJkqjByhZMI3Ahiu"
15 crossorigin="anonymous">
16 </head>
17 <body>
18 <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
19 <div class="container-fluid">
20 <a class="navbar-brand" href="#">Navbar</a>
21 <button class="navbar-toggler" type="button" data-bs-toggle="collapse"
22 data-bs-target="#navbarSupportedContent" aria-
23 controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle
24 navigation">
25 <span class="navbar-toggler-icon"></span>
26 </button>
27 <div class="collapse navbar-collapse" id="navbarSupportedContent">
28 <ul class="navbar-nav me-auto mb-2 mb-lg-0">
29 <li class="nav-item">
30 <a class="nav-link active" aria-current="page"
31 href="@{/students}">Home</a>
32 </li>
33 <li class="nav-item">
34 <a class="nav-link" href="#">Link</a>
35 </li>
36 <li class="nav-item dropdown">
37 <a class="nav-link dropdown-toggle" href="#" id="navbarDropdown"
38 role="button" data-bs-toggle="dropdown" aria-expanded="false">
39 Dropdown
40 </a>
41 <ul class="dropdown-menu" aria-labelledby="navbarDropdown">
42 <li><a class="dropdown-item" href="#">Action</a></li>
43 <li><a class="dropdown-item" href="#">Another action</a></li>
44 <li><hr class="dropdown-divider"></li>
45 <li><a class="dropdown-item" href="#">Something else here</a>
46 </li>
47 </ul>
48 </li>
49 <li class="nav-item">
50 <a class="nav-link disabled">Disabled</a>
51 </li>
52 </ul>

```

```

43     <form class="d-flex">
44         <input class="form-control me-2" type="search" placeholder="Search"
aria-label="Search">
45         <button class="btn btn-outline-success"
type="submit">Search</button>
46     </form>
47 </div>
48 </div>
49 </nav>
50 <br><br>
51     <div class="container">
52         <div class="row">
53             <div class="col-lg-6 col-md-6 col-sm-6 container justify-
content-center card">
54                 <h1 class="text-center"> Update Student </h1>
55                 <div class="card-body">
56                     <form th:action="@{/students/{id}(id=${student.id})}"
th:object="${student}" method="post">
57                         <div class="form-group">
58                             <label>Student First Name</label>
59                             <input
60                                 type="text"
61                                 name="firstName"
62                                 th:field="*{firstName}"
63                                 class="form-control"
64                                 placeholder="Enter Student First Name">
65                         </div>
66
67                         <div class="form-group">
68                             <label>Student Last Name</label>
69                             <input
70                                 type="text"
71                                 name="lastName"
72                                 th:field="*{lastName}"
73                                 class="form-control"
74                                 placeholder="Enter Student last Name">
75                         </div>
76
77
78                         <div class="form-group">
79                             <label>Student Email</label>
80                             <input
81                                 type="text"
82                                 name="email"
83                                 th:field="*{email}"
84                                 class="form-control"
85                                 placeholder="Enter Student Email">
86                         </div>
87
88                         <div class="box-footer">
89                             <button type="submit" class=" btn btn-primary">
90                                 submit
91                             </button>
92                         </div>
93
94
95                     </form>
96

```

```

97         </div>
98     </div>
99
100     </div>
101
102
103
104 </div>
105
106
107
108
109 <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/js/bootstrap.bundle.
min.js"
integrity="sha384-/bQdsTh/da6pkI1MST/rWKFNjaCP5gBSY4sEBT38Q/9RBh9AH40zEOg7H
lq2THRZ" crossorigin="anonymous"></script>
110 </body>
111 </html>

```

service

StudentService

```

1 package tw.com.lccnet.model.service;
2
3 import java.util.List;
4 import tw.com.lccnet.model.entity.Student;
5
6 public interface StudentService {
7
8     List<Student> getAllStudent();
9
10    Student saveStudent(Student student);
11
12    Student getStudentById(Long id);
13
14    Student updateStudent(Student student);
15
16    void deleteStudentById(Long id);
17 }
18

```

StudentServiceImpl

```

1 package tw.com.lccnet.model.service.impl;
2
3 import java.util.List;
4 import org.springframework.stereotype.Service;
5 import tw.com.lccnet.model.entity.Student;
6 import tw.com.lccnet.model.respository.StudentRespository;
7 import tw.com.lccnet.model.service.StudentService;
8
9 @Service

```

```

10 public class StudentServiceImpl implements StudentService{
11
12     private StudentRespository studentRespository;
13
14     public StudentServiceImpl(StudentRespository studentRespository) {
15         super();
16         this.studentRespository = studentRespository;
17     }
18
19     @Override
20     public List<Student> getAllStudent() {
21
22         return studentRespository.findAll();
23     }
24
25     @Override
26     public Student saveStudent(Student student) {
27         // TODO Auto-generated method stub
28         return studentRespository.save(student);
29     }
30
31
32
33     @Override
34     public Student getStudentById(Long id) {
35
36         return studentRespository.findById(id).get();
37     }
38
39     @Override
40     public Student updateStudent(Student student) {
41
42         return studentRespository.save(student);
43     }
44
45     @Override
46     public void deleteStudentById(Long id) {
47         studentRespository.deleteById(id);
48     }
49
50 }
51

```

respository

StudentRespository.java

```

1 package tw.com.lccnet.model.respository;
2
3 import org.springframework.data.jpa.repository.JpaRepository;
4
5 import tw.com.lccnet.model.entity.Student;
6
7 public interface StudentRespository extends JpaRepository<Student, Long> {
8
9 }
10

```

entity

Student.java

```

1 package tw.com.lccnet.model.entity;
2
3 import jakarta.persistence.Column;
4 import jakarta.persistence.Entity;
5 import jakarta.persistence.GeneratedValue;
6 import jakarta.persistence.GenerationType;
7 import jakarta.persistence.Id;
8 import jakarta.persistence.Table;
9
10 @Entity
11 @Table(name = "students")
12 public class Student {
13     @Id
14     @GeneratedValue(strategy = GenerationType.IDENTITY)
15     private Long id;
16
17     @Column(name = "first_name", nullable = false)
18     private String firstName;
19
20     @Column(name = "last_name")
21     private String lastName;
22
23     @Column(name = "email")
24     private String email;
25
26     public Student() {
27         super();
28     }
29
30     public Student(String firstName, String lastName, String email) {
31         super();
32         this.firstName = firstName;
33         this.lastName = lastName;
34         this.email = email;
35     }
36
37     public Long getId() {
38         return id;
39     }
40

```

```

40
41     public void setId(Long id) {
42         this.id = id;
43     }
44
45     public String getFirstName() {
46         return firstName;
47     }
48
49     public void setFirstName(String firstName) {
50         this.firstName = firstName;
51     }
52
53     public String getLastName() {
54         return lastName;
55     }
56
57     public void setLastName(String lastName) {
58         this.lastName = lastName;
59     }
60
61     public String getEmail() {
62         return email;
63     }
64
65     public void setEmail(String email) {
66         this.email = email;
67     }
68
69     @Override
70     public String toString() {
71         return "Student [id=" + id + ", firstName=" + firstName + ",
72         lastName=" + lastName + ", email=" + email + "]";
73     }
74 }
75

```

controller

StudentController.java

```

1  package tw.com.lccnet.model.controller;
2
3  import org.springframework.stereotype.Controller;
4  import org.springframework.ui.Model;
5  import org.springframework.web.bind.annotation.GetMapping;
6  import org.springframework.web.bind.annotation.ModelAttribute;
7  import org.springframework.web.bind.annotation.PathVariable;
8  import org.springframework.web.bind.annotation.PostMapping;
9
10 import tw.com.lccnet.model.entity.Student;
11 import tw.com.lccnet.model.service.StudentService;
12
13 @Controller
14 public class StudentController {
15

```

```
16     private StudentService studentService;
17
18     public StudentController(StudentService studentService) {
19         super();
20         this.studentService = studentService;
21     }
22     //輸出全部Student
23     @GetMapping("/students")
24     public String listStudents(Model model) {
25         model.addAttribute("students", studentService.getAllStudent());
26         return "students";
27     }
28
29     //跳至新增Student頁面
30     @GetMapping("/students/new")
31     public String createStudentForm(Model model) {
32         Student student=new Student();
33         model.addAttribute("student", student);
34         return "create_student"; //跳到View 頁面，跳到某一個create_student.html
35     }
36
37
38     //新增輸入內容
39     @PostMapping("/students")
40     public String saveStudent(@ModelAttribute("student") Student student) {
41
42         studentService.saveStudent(student);
43         return "redirect:/students";
44     }
45
46     //更新的控制
47     @GetMapping("/students/edit/{id}")
48     public String editStudentForm(@PathVariable Long id,Model model) {
49         model.addAttribute("student", studentService.getStudentById(id));
50         return "edit_student";
51     }
52
53
54     //更新的存檔
55     @PostMapping("/students/{id}")
56     public String updateStudent(@PathVariable Long
id,@ModelAttribute("student") Student student,Model model) {
57
58         Student existingStudent=studentService.getStudentById(id);
59         existingStudent.setId(id);
60         existingStudent.setFirstName(student.getFirstName());
61         existingStudent.setLastName(student.getLastName());
62         existingStudent.setEmail(student.getEmail());
63         //save update
64         studentService.updateStudent(existingStudent);
65         return "redirect:/students";
66     }
67
68     //刪除
69     @GetMapping("/students/{id}")
70     public String deleteStudent(@PathVariable Long id) {
71         studentService.deleteStudentById(id);
72     }
```

```
73         return "redirect:/students";
74     }
75
76 }
77
```

Day07Application

```
1  package tw.com.lccnet.model;
2
3  import org.springframework.boot.SpringApplication;
4  import org.springframework.boot.autoconfigure.SpringBootApplication;
5
6  @SpringBootApplication
7  public class Day07Application {
8
9      public static void main(String[] args) {
10         SpringApplication.run(Day07Application.class, args);
11     }
12
13 }
14
```