```xml
--------------pom.xml---------------------
<?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>
    <parent>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>2.3.0.RELEASE</version>
        <relativePath/> <!-- lookup parent from repository -->
    </parent>
    <groupId>com.ameya</groupId>
    <artifactId>001-course-api</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <name>001-course-api</name>
    <description>Demo project for Spring Boot</description>
    <properties>
        <java.version>11</java.version>
    </properties>
    <dependencies>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-web</artifactId>
        </dependency>

        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-test</artifactId>
            <scope>test</scope>
            <exclusions>
                <exclusion>
                    <groupId>org.junit.vintage</groupId>
                    <artifactId>junit-vintage-engine</artifactId>
                </exclusion>
            </exclusions>
        </dependency>
    </dependencies>

    <build>
        <plugins>
            <plugin>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-maven-plugin</artifactId>
            </plugin>
        </plugins>
    </build>
```

```
</project>
---------------application.properties-------------
server.port=9001
logging.level.web=trace
--------------GreetingController.java-----------
package com.ameya.controllers;

import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class GreetingController {

    @RequestMapping(path = "/hello")
    public String greetUser() {
        return "Hello All !! Welcome To Spring Boot !!";
    }
}

----------------Topic.java----------
package com.ameya.models;

public class Topic {

    private String id;
    private String topicName;
    private String topicDescription;

    public Topic() {

    }

    public Topic(String id, String topicName, String topicDescription) {
        super();
        this.id = id;
        this.topicName = topicName;
        this.topicDescription = topicDescription;
    }

    public String getId() {
        return id;
    }

    public void setId(String id) {
        this.id = id;
    }

```

```java
95      public String getTopicName() {
96          return topicName;
97      }
98
99      public void setTopicName(String topicName) {
100         this.topicName = topicName;
101     }
102
103     public String getTopicDescription() {
104         return topicDescription;
105     }
106
107     public void setTopicDescription(String topicDescription) {
108         this.topicDescription = topicDescription;
109     }
110
111 }
```
----------------TopicService.java----------
```java
package com.ameya.services;

import java.util.List;

import com.ameya.models.Topic;

public interface TopicService {

    List<Topic> getAllTopics();
    void addTopic(Topic topic);
    void updateTopic(String id,Topic topic);
    Topic getTopic(String id);
    void deleteTopic(String id);
}
```
-------------TopicServiceImpl.java----------
```java
package com.ameya.services.impl;

import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;

import org.springframework.stereotype.Service;

import com.ameya.models.Topic;
import com.ameya.services.TopicService;

@Service
public class TopicServiceImpl implements TopicService {

    private List<Topic> topics=new ArrayList<Topic>(Arrays.asList(
```

```java
143              new Topic("T001", "Spring Framework", "A Short Intro To Spring
                 Framework"),
144              new Topic("T002","Java 11","A Short Intro To Java Programming"),
145              new Topic("T003","Advanced Spring","A 3 Day Advanced Spring Framework
                 Course"),
146              new Topic("T004","JavaEE","A Short Intro To Java Enterprise Edition")
147              ));

149     @Override
150     public List<Topic> getAllTopics() {
151         return topics;
152     }

154     @Override
155     public void addTopic(Topic topic) {
156         topics.add(topic);

158     }

160     @Override
161     public void updateTopic(String id, Topic topic) {
162             for(int indx=0;indx<topics.size();indx++) {
163                 Topic t=topics.get(indx);
164                 if(t.getId().equalsIgnoreCase(id)) {
165                     topics.set(indx, topic);
166                     return;
167                 }
168             }

170     }

172     @Override
173     public Topic getTopic(String id) {
174         Topic topic=null;
175         for(int indx=0;indx<topics.size();indx++) {
176             Topic t=topics.get(indx);
177             if(t.getId().equalsIgnoreCase(id)) {
178                 topic=t;
179                 break;
180             }
181         }
182         return topic;
183     }

185     @Override
186     public void deleteTopic(String id) {
187         for(int indx=0;indx<topics.size();indx++) {
188             Topic t=topics.get(indx);
```

```java
189             if(t.getId().equalsIgnoreCase(id)) {
190                 topics.remove(indx);
191                 return;
192             }
193         }
194
195     }
196
197 }
```
--------------------TopicController.java----------
```java
package com.ameya.controllers;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.DeleteMapping;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.PutMapping;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RestController;

import com.ameya.models.Topic;
import com.ameya.services.TopicService;

@RestController
public class TopicController {

    @Autowired
    private TopicService topicService;

    @GetMapping(path="/topics")
    public List<Topic> findAll(){
        return topicService.getAllTopics();
    }
    @GetMapping(path="/topics/{id}")
    public Topic findById(@PathVariable("id") String id) {
        return topicService.getTopic(id);
    }
    @PostMapping(path="/topics")
    public void addTopic(@RequestBody Topic topic) {
        topicService.addTopic(topic);
    }
    @PutMapping(path="/topics/{id}")
    public void update(@PathVariable("id") String id,@RequestBody Topic topic) {
        topicService.updateTopic(id, topic);
    }
```

```
237      @DeleteMapping(path="/topics/{id}")
238      public void deleteTopic(@PathVariable("id") String id) {
239          topicService.deleteTopic(id);
240      }
241  }
242  ---------------------------------------------
243
244  Sample URLs
245
246  GET :  http://localhost:9001/topics
247  GET :  http://localhost:9001/topics/T003
248  POST : http://localhost:9001/topics
249  {
250      "id": "T005",
251      "topicName": "Spring Boot",
252      "topicDescription": "A Short Introduction To Spring Boot"
253  }
254  PUT : http://localhost:9001/topics/T003
255  {
256      "id": "T002",
257      "topicName": "Java Version 8.0",
258      "topicDescription": "A Short Introduction To Java 8 Programming"
259  }
260  DELETE : http://localhost:9001/topics/T003
261
262
263
264
265
```