

# Testing Spring MVC Web Controllers



# Problem

- How can we test Spring MVC Web Controllers?
- How can we create HTTP requests and send to the controller?
- How can we verify HTTP response?
  - status code
  - view name
  - model attributes

# Spring Testing Support

- Mock object support for web, REST APIs etc ...
- For testing controllers, you can use **MockMvc**
- Provides Spring MVC processing of request / response
- There is no need to run a server (embedded or external)

# Development Process

Step-By-Step

1. Add annotation `@AutoConfigureMockMvc`
2. Inject the `MockMvc`
3. Perform web requests
4. Define expectations
5. Assert results

### GradebookController.java

```
@Controller
public class GradebookController {

    @RequestMapping(value = "/", method = RequestMethod.GET)
    public String getStudents(Model m) {
        return "index";
    }

}
```

## GradebookControllerTest.java

```
import org.springframework.test.web.servlet.MockMvc;
import org.springframework.test.web.servlet.MvcResult;
import org.springframework.test.web.servlet.request.MockMvcRequestBuilders;
import org.springframework.web.servlet.ModelAndView;
import org.springframework.boot.test.autoconfigure.web.servlet.AutoConfigureMockMvc;
...

```

```
@AutoConfigureMockMvc
@SpringBootTest
public class GradebookControllerTest {
```

```
    @Autowired
    private MockMvc mockMvc;
```

```
    @Test
    public void getStudentsHttpRequest () throws Exception {
```

```
        MvcResult mvcResult = mockMvc.perform(MockMvcRequestBuilders.get("/"))
            .andExpect(status().isOk()).andReturn();
```

```
        ModelAndView mav = mvcResult.getModelAndView();
```

```
        ModelAndViewAssert.assertViewName(mav, "index");
```

```
}
```

```
}
```

Can also assert model attributes.  
Retrieve model attribute objects for fine-grained asserts

Step 1: Autoconfigure

Step 2: Inject the MockMvc

Step 3: Perform web requests

Step 4: Define expectations

Step 5: Assert results

## GradebookController.java

```
@Controller
public class GradebookController {

    @RequestMapping(value = "/", method = RequestMethod.GET)
    public String getStudents(Model m) {
        return "index";
    }
}
```