

Advanced Software Engineering – Fall 2017 lab – Homework 6

Student: Orlando Leombruni – mailto: o.leombruni@gmail.com

a. Contents of the submission

- `doodle.yaml`
- `doodle.completed.yaml`
- `doodle.zip`
- `scripts`
 - `create_doodle.sh`
 - `delete_doodle.sh`
 - `start_doodle.sh`
 - `stop.doodle.sh`
- `report.pdf` (this file)

b. Quick rundown of the submission

The `doodle.yaml` file has been completed with the description of the topology; the doodle will run on an host that runs Maven (ver. ≥ 3.0) and Java (at least v. 1.8) and will expose port 8080 to the external, connecting it to port 8080 of the container.

The `create_doodle.sh` script unzips the Doodle primer and invokes the Maven packaging option after moving into the unzipped folder.

The `start_doodle.sh` script moves into the Doodle primer folder and executes the jar created by Maven.

The `stop_doodle.sh` script retrieves the process ID (PID) of the Java virtual machine and kills it.

The `delete_doodle.sh` script deletes the Doodle primer folder.

c. Step-by-step simulation

1. EXECUTION OF TOSKERISER

```
oleombruni@host-131-114-214-129:~/ase$ toskerise doodle.yaml --policy size
founded 116 images for "doodle" node
complete node "doodle" with image "frekele/maven:3.3.3-jdk8u51" (247.45 MB, 116382 pulls, 13 stars)
```

2. DIFF BETWEEN DOODLE.YAML AND DOODLE.COMPLETED.YAML

```
oleombruni@host-131-114-214-129:~/ase$ diff doodle.yaml doodle.completed.yaml
9c9
< - tosker: https://di-unipi-socc.github.io/tosker-types/tosker.yaml
---
> - tosker: https://di-unipi-socc.github.io/tosker-types/tosker.yaml
27c27
<         - 8080: { get_input: port }
---
>         - 8080: {get_input: port}
30a31
>         node: doodle_container
36c37
<         code: { get_artifact: [ SELF, doodle_code ] }
---
>         code: {get_artifact: [SELF, doodle_code]}
42a44,66
>     doodle_container:
>       type: tosker.nodes.Container
>       properties:
>         supported_sw:
>           perl: 5.24.1
>           java: 1.8.0
>           curl: 7.52.1
>           nano: 2.7.4
>           mvn: 3.3.3
>           unzip: '6.00'
>           erl: '2'
>           wget: '1.18'
>           bash: 4.4.12
>           tar: '1.29'
>       os_distribution: Debian GNU/Linux 9 (stretch)
>       ports:
>         8080:
>           get_input: port
>       artifacts:
>         my_image:
>           file: frekele/maven:3.3.3-jdk8u51
>           type: tosker.artifacts.Image
>           repository: docker_hub
```

3. TOSKER CREATE AND TOSKER LS

```
oleombruni@host-131-114-214-129:~/ase$ tosker doodle.completed.yaml create
update memory ok
✓ Create network... Done
✓ Create doodle_container (container)... Done
✓ Create doodle (software)... Done
oleombruni@host-131-114-214-129:~/ase$ tosker ls
update memory ok
Application      Component      Type      State      Full name
-----
doodle.completed doodle_container Container created doodle.completed.doodle_container
doodle.completed doodle          Software created doodle.completed.doodle
```

4. TOSKER CREATE LOGS (BEGIN/END)

```
Doodle_Primer$ tosker log doodle.completed.doodle create
update memory ok
+ unzip /tmp/dt/doodle/doodle.zip
Archive: /tmp/dt/doodle/doodle.zip
  creating: doodle/
  inflating: doodle/.gitignore
  inflating: doodle/doodle.iml
  inflating: doodle/mvnw
  inflating: doodle/pom.xml
  creating: doodle/src/
  creating: doodle/src/main/
  creating: doodle/src/main/java/
  creating: doodle/src/main/java/di/
  creating: doodle/src/main/java/di/unipi/
  creating: doodle/src/main/java/di/unipi/ase/
  creating: doodle/src/main/java/di/unipi/ase/doodle/
  inflating: doodle/src/main/java/di/unipi/ase/doodle/Doodle.java
  inflating: doodle/src/main/java/di/unipi/ase/doodle/DoodleApplication.java
  inflating: doodle/src/main/java/di/unipi/ase/doodle/DoodleController.java
  inflating: doodle/src/main/java/di/unipi/ase/doodle/Vote.java
  creating: doodle/src/main/resources/
  extracting: doodle/src/main/resources/application.properties
  creating: doodle/src/main/resources/static/
  creating: doodle/src/main/resources/templates/
  creating: doodle/src/test/
  creating: doodle/src/test/java/
  creating: doodle/src/test/java/di/
  creating: doodle/src/test/java/di/unipi/
  creating: doodle/src/test/java/di/unipi/ase/
  creating: doodle/src/test/java/di/unipi/ase/doodle/
  inflating: doodle/src/test/java/di/unipi/ase/doodle/DoodleApplicationTests.java
a
+ cd doodle
+ mvn package
[INFO] Scanning for projects...
Downloading: https://repo.maven.apache.org/maven2/org/springframework/boot/spring-boot-starter-parent/1.5.7.RELEASE/spring-boot-starter-parent-1.5.7.RELEASE.pom
3/8 KB
5/8 KB
```

```
2172/2204 KB
2176/2204 KB
2180/2204 KB
2184/2204 KB
2188/2204 KB
2192/2204 KB
2196/2204 KB
2200/2204 KB
2204/2204 KB

Downloaded: https://repo.maven.apache.org/maven2/com/google/guava/guava/18.0/guava-18.0.jar (220
4 KB at 624.2 KB/sec)
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 01:09 min
[INFO] Finished at: 2017-11-28T09:41:09+00:00
[INFO] Final Memory: 30M/174M
[INFO] -----
```

5. TOSKER START

```
oleombruni@host-131-114-214-129:~/ase$ tosker doodle.completed.yaml start
update memory ok
✓ Start doodle_container (container)... Done
✓ Start doodle (software)... Done
```

6. TOSKER START LOGS (BEGIN/END)

[illegible]

```
Mapped "{[/doodles/{id}/vote],methods=[PUT]}" onto public java.lang.String di.unipi.ase.doodle.DoodleController.vote(int,di.unipi.ase.doodle.Vote)
2017-11-28 13:02:01.234 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/doodles/{id}/vote/{name}],methods=[GET]}" onto public java.lang.String di.unipi.ase.doodle.DoodleController.getVote(int,java.lang.String)
2017-11-28 13:02:01.235 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/doodles/{id}/vote/{name}],methods=[POST]}" onto public java.lang.String di.unipi.ase.doodle.DoodleController.updateVote(int,di.unipi.ase.doodle.Vote)
2017-11-28 13:02:01.235 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/doodles/{id}/vote/{name}],methods=[DELETE]}" onto public void di.unipi.ase.doodle.DoodleController.deleteVote(int,java.lang.String)
2017-11-28 13:02:01.236 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/doodles],methods=[PUT]}" onto public long di.unipi.ase.doodle.DoodleController.createDoodle(di.unipi.ase.doodle.Doodle)
2017-11-28 13:02:01.238 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/doodles],methods=[GET]}" onto public java.util.HashMap<java.lang.Integer,di.unipi.ase.doodle.Doodle> di.unipi.ase.doodle.DoodleController.getDoodles()
2017-11-28 13:02:01.241 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/error],produces=[text/html]}" onto public org.springframework.web.servlet.ModelAndView org.springframework.boot.autoconfigure.web.BasicErrorController.errorHtml(javax.servlet.http.HttpServletRequest,javax.servlet.http.HttpServletResponse)
2017-11-28 13:02:01.242 INFO 8 --- [main] s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/error]}" onto public org.springframework.http.ResponseEntity<java.util.Map<java.lang.String,java.lang.Object>> org.springframework.boot.autoconfigure.web.BasicErrorController.error(javax.servlet.http.HttpServletRequest)
2017-11-28 13:02:01.271 INFO 8 --- [main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/webjars/**] onto handler of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2017-11-28 13:02:01.271 INFO 8 --- [main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2017-11-28 13:02:01.307 INFO 8 --- [main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**/favicon.ico] onto handler of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2017-11-28 13:02:01.547 INFO 8 --- [main] o.s.j.e.a.AnnotationMBeanExporter : Registering beans for JMX exposure on startup
2017-11-28 13:02:01.607 INFO 8 --- [main] s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 8080 (http)
2017-11-28 13:02:01.613 INFO 8 --- [main] di.unipi.ase.doodle.DoodleApplication : Started DoodleApplication in 3.739 seconds (JVM running for 4.288)
```

7. TOSKER LS (AFTER STARTING)

```

oleombruni@host-131-114-214-129:~/ase$ tosker ls
update memory ok
Application      Component      Type      State      Full name
-----
doodle.completed doodle_container Container started doodle.completed.doodle_container
doodle.completed doodle          Software  started doodle.completed.doodle

```

8. TESTING THE APPLICATION (ON THE HOST MACHINE!)

```
[oleombruni@MBP-di-Orlando:~$ curl -i \  
> -X PUT \  
> -H "Content-Type:application/json" \  
> http://localhost:8080/doodles/ \  
> -d '{"title": "friday", "options": ["pool", "pizza", "bowling"]}'  
HTTP/1.1 200  
Content-Type: application/json;charset=UTF-8  
Transfer-Encoding: chunked  
Date: Thu, 30 Nov 2017 16:07:14 GMT  
  
[oleombruni@MBP-di-Orlando:~$ curl -i \  
> -X GET \  
> http://localhost:8080/doodles  
HTTP/1.1 200  
Content-Type: application/json;charset=UTF-8  
Transfer-Encoding: chunked  
Date: Thu, 30 Nov 2017 16:07:41 GMT  
  
{"1":{"title":"friday","options":["pool","pizza","bowling"],"votes":{"pizza":[],"pool":[],"bowling":[]}}}
```

9. TosKER STOP

```
Doodle_Primer$ tosker doodle.completed.yaml stop  
update memory ok  
✓ Stop doodle (software)... Done  
✓ Stop doodle_container (container)... Done
```

10. TosKER STOP LOGS

```
Doodle_Primer$ tosker log doodle.completed.doodle stop  
update memory ok  
+ pidof java  
+ PID=6  
+ kill -9 6
```

11. TosKER LS (AFTER STOPPING)

```
imer$ tosker ls  
update memory ok  
Application      Component      Type      State      Full name  
-----  
doodle.completed  doodle_container  Container  created    doodle.completed.doodle_container  
doodle.completed  doodle           Software   created    doodle.completed.doodle
```

12. TosKER DELETE

```
Doodle_Primer$ tosker doodle.completed.yaml delete  
update memory ok  
✓ Delete doodle (software)... Done  
✓ Delete doodle_container (container)... Done  
✓ Delete network... Done
```

13. TosKER LS (AFTER DELETING)

```
[oleombruni@host-131-114-214-129:~/ase$ tosker ls  
update memory ok  
Application      Component      Type      State      Full name  
-----
```