Test for evaluating the design-time support offered by Barrel

[Solutions]

1. Suppose that we wish to orchestrate the deployment of *Thinking*. Which of the following deployment plans are valid? (If you mark a plan as not valid, please also explain why such plan is not valid.)

Plan 1.1

Run Mongo -> Run Maven -> Run Node -> Setup GUI -> Run GUI -> Setup API -> Config API -> Run API -> Config GUI

Valid? [Y] [N] Why: -

Plan 1.2

Run Node -> Setup GUI -> Run GUI -> Run Maven -> Setup API -> Run API -> Run Mongo -> Config API -> Config GUI

Valid? [Y] [N] Why: **The operation "Run API" is not available when the sequence indicates to execute it.**

Plan 1.3

Run Node -> Run Maven -> Setup GUI -> Setup API -> Config API -> Config GUI -> Run Mongo -> Run API -> Run GUI

Valid? [Y] [N] Why: **The operation "Config API" is not available when the sequence indicates to execute it.**

Plan 1.4

Run Maven -> Run Node -> Setup API -> Setup GUI -> Run GUI -> Run Mongo -> Config API -> Run API -> Config GUI

Valid? [Y] [N] Why: -

2. Suppose that an instance of *Thinking* is up and running (viz., all containers are running, and both the API and the GUI are effectively working). Which are the effects of the following management plans?

Plan 2.1

Stop GUI -> Uninstall GUI -> Stop API -> Uninstall API -> Stop Maven -> Delete Maven -> Stop Node -> Delete Node
-> Stop Mongo -> Delete Mongo

Effects: **All components of *Thinking* are uninstalled from the host.**

Plan 2.2

Stop API -> Uninstall API -> Setup API -> Config API -> Config GUI -> Run API

Effects: **The sequence is not valid, as "Config GUI" is not available when the sequence indicates to execute it.**

Plan 2.3

Stop Node -> Delete Node -> Stop Maven -> Delete Maven

Effects: **All components (but *Mongo*) are uninstalled from the host.**

3. Suppose that an instance of *Thinking* is up and running (viz., all containers are running, and both the API and the GUI are effectively working). Please answer to the following questions.

3.1 What happens if we stop the *Mongo* Docker container?

This causes a failure in *ThoughtsAPI*, which crashes and get stuck (as none of its management operations can be effectively invoked).

3.2 What should we do after stopping *Mongo* to have *Thinking* up and running again (viz., to go back to the situation where all containers are running, and both the API and the GUI are effectively working)?

A solution is to execute the following sequence of management operations:

Stop Maven -> Delete Maven -> Start Mongo -> Run Maven -> Setup API -> Configure API -> Run API -> Configure GUI

4. Suppose that, while deploying an instance of *Thinking*, the *API* component unexpectedly crashes (viz., it becomes unresponsive due to an unexpected error, and none of its management operations can be effectively performed). Such instance hence got stuck with the Docker containers running, the *API* crashed, and the *GUI* not installed yet. Can we still complete our installation (by only exploiting the management operations offered by the components of *Thinking*)? Please motivate your answer.

Yes, we can still complete our installation. For instance, we can complete it by executing the following sequence of management operations:

Stop Maven -> Setup GUI -> Run GUI -> Delete Maven -> Run Maven -> Setup API -> Config API -> Run API -> Config GUI