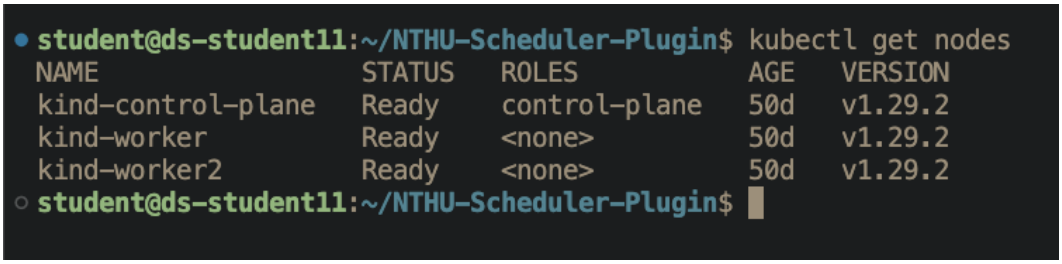
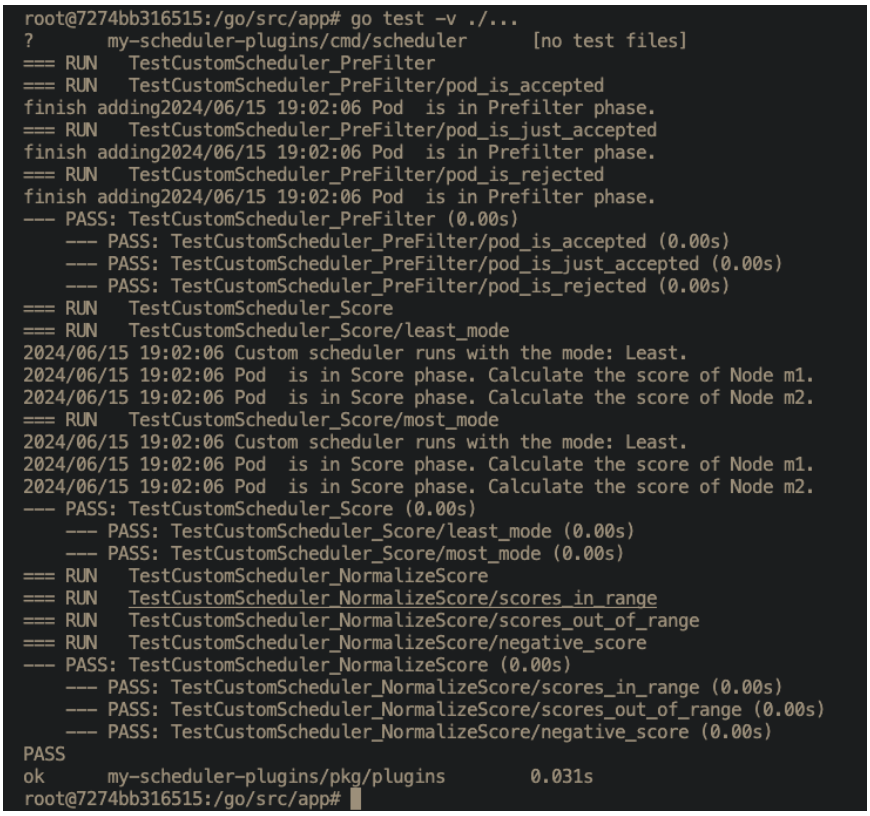
K8S Report

1. The screenshot of `kubectl get nodes`



2. The screenshot of passing all the unit tests



3. Explain the 3 scenarios you design to validate your implementation

1. Validating the prefilter

```
I0619 15:36:43.433640       1 log.go:194] Pod nginx1 is in Prefilter phase.
I0619 15:36:43.434689       1 log.go:194] Pod nginx1 is in Score phase. Calculate the score of Node kind-worker.
I0619 15:36:43.434728       1 log.go:194] Pod nginx1 is in Score phase. Calculate the score of Node kind-worker2.
I0619 15:36:43.442633       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx1" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
I0619 15:36:49.960469       1 log.go:194] Pod nginx2 is in Prefilter phase.
I0619 15:36:49.961285       1 schedule_one.go:867] "Unable to schedule pod; no fit; waiting" pod="default/nginx2" err="0/3 nodes are available: Not enough po
ds in group A, minimum required is 3. preemption: 0/3 nodes are available: 3 No preemption victims found for incoming pod.."
I0619 15:36:52.668782       1 log.go:194] Pod nginx3 is in Prefilter phase.
I0619 15:36:52.669118       1 log.go:194] Pod nginx3 is in Score phase. Calculate the score of Node kind-worker.
I0619 15:36:52.669138       1 log.go:194] Pod nginx3 is in Score phase. Calculate the score of Node kind-worker2.
I0619 15:36:52.674478       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx3" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
I0619 15:37:01.619214       1 log.go:194] Pod nginx4 is in Prefilter phase.
I0619 15:37:01.619795       1 log.go:194] Pod nginx4 is in Score phase. Calculate the score of Node kind-worker2.
I0619 15:37:01.619832       1 log.go:194] Pod nginx4 is in Score phase. Calculate the score of Node kind-worker.
I0619 15:37:01.625442       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx4" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
I0619 15:42:10.631237       1 log.go:194] Pod nginx2 is in Prefilter phase.
I0619 15:42:10.632094       1 log.go:194] Pod nginx2 is in Score phase. Calculate the score of Node kind-worker2.
I0619 15:42:10.632128       1 log.go:194] Pod nginx2 is in Score phase. Calculate the score of Node kind-worker.
I0619 15:42:10.637505       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx2" node="kind-worker2" evaluatedNodes=3 feasibleNodes=2
```

- 我 declare 了 nginx1-4, 並將 nginx2 的 minavail 設成 3, 所以一開始 nginx2 進來時會被 prefilter block 住, 但是當 nginx1-4 都進來後 nginx2 則可以過去

2. Validating the Least Mode

```
I0619 15:52:41.174765       1 log.go:194] Pod nginx7 is in Prefilter phase.
I0619 15:52:41.175724       1 log.go:194] Pod nginx7 is in Score phase. Calculate the score of Node kind-worker.
I0619 15:52:41.175758       1 log.go:194] Pod nginx7 is in Score phase. Calculate the score of Node kind-worker2.
I0619 15:52:41.180979       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx7" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
```

- 我另外 declare 了 nginx5-7, 他們則屬於另一個 group, 可以看到在 least mode 時 nginx7 會優先被放到 `kind-worker` , 利用 `kubectl describe nodes` 可以看到 `kind-worker` 的 memory 比 `kind-worker2` 的 memory 還多, 所以可以證明 Least mode 的正確性

3. Validating the Most Mode

```
I0619 16:04:20.123431       1 log.go:194] Pod nginx8 is in Prefilter phase.
I0619 16:04:20.126220       1 log.go:194] Pod nginx8 is in Score phase. Calculate the score of Node kind-worker.
I0619 16:04:20.126260       1 log.go:194] Pod nginx8 is in Score phase. Calculate the score of Node kind-worker2.
I0619 16:04:20.140783       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/nginx8" node="kind-worker2" evaluatedNodes=3 feasibleNodes=2
```

- 將 Mode 改成 Most mode 後, 再 deploy 一個 node 上去(內容跟example一樣), 可以看到這次被優先放到了 `kind-worker2` , 因此可以證明 Most mode 的正確性