1. The screenshot of kubectl get nodes

```
student@ds-student21:~/NTHU-Scheduler-Plugin$ kubectl get nodes
NAME                  STATUS   ROLES           AGE    VERSION
kind-control-plane    Ready    control-plane   4d7h   v1.29.2
kind-worker           Ready    <none>          4d7h   v1.29.2
kind-worker2          Ready    <none>          4d7h   v1.29.2
```

2. The screenshot of passing all the unit tests

```
=== RUN   TestCustomScheduler_PreFilter
=== RUN   TestCustomScheduler_PreFilter/pod_is_accepted
finish adding2024/05/16 10:16:43 Pod  is in Prefilter phase.
=== RUN   TestCustomScheduler_PreFilter/pod_is_just_accepted
finish adding2024/05/16 10:16:43 Pod  is in Prefilter phase.
=== RUN   TestCustomScheduler_PreFilter/pod_is_rejected
finish adding2024/05/16 10:16:43 Pod  is in Prefilter phase.
--- PASS: TestCustomScheduler_PreFilter (0.00s)
    --- PASS: TestCustomScheduler_PreFilter/pod_is_accepted (0.00s)
    --- PASS: TestCustomScheduler_PreFilter/pod_is_just_accepted (0.00s)
    --- PASS: TestCustomScheduler_PreFilter/pod_is_rejected (0.00s)
=== RUN   TestCustomScheduler_Score
=== RUN   TestCustomScheduler_Score/least_mode
2024/05/16 10:16:43 Custom scheduler runs with the mode: Least.
2024/05/16 10:16:43 Pod  is in Score phase. Calculate the score of Node m1.
2024/05/16 10:16:43 Pod  is in Score phase. Calculate the score of Node m2.
=== RUN   TestCustomScheduler_Score/most_mode
2024/05/16 10:16:43 Custom scheduler runs with the mode: Least.
2024/05/16 10:16:43 Pod  is in Score phase. Calculate the score of Node m1.
2024/05/16 10:16:43 Pod  is in Score phase. Calculate the score of Node m2.
--- PASS: TestCustomScheduler_Score (0.00s)
    --- PASS: TestCustomScheduler_Score/least_mode (0.00s)
    --- PASS: TestCustomScheduler_Score/most_mode (0.00s)
=== RUN   TestCustomScheduler_NormalizeScore
=== RUN   TestCustomScheduler_NormalizeScore/scores_in_range
=== RUN   TestCustomScheduler_NormalizeScore/scores_out_of_range
=== RUN   TestCustomScheduler_NormalizeScore/negative_score
--- PASS: TestCustomScheduler_NormalizeScore (0.00s)
    --- PASS: TestCustomScheduler_NormalizeScore/scores_in_range (0.00s)
    --- PASS: TestCustomScheduler_NormalizeScore/scores_out_of_range (0.00s)
    --- PASS: TestCustomScheduler_NormalizeScore/negative_score (0.00s)
PASS
ok      my-scheduler-plugins/pkg/plugins        0.035s
```

3. Validate your implementation

pod-spec1 = pod-spec2 = pod-spec3 = {podGroup: "A", minAvailable: "2", memory: "100Mi"},

use *kubectl describe nodes* to know that worker has 1300Mi allocatable memory, and worker2 has 1800Mi allocatable memory.

(A) mode : Least

```
student@ds-student21:~/NTHU-Scheduler-Plugin$ kubectl get po -o wide
NAME                            READY   STATUS    RESTARTS   AGE   IP            NODE           NOMINATED NODE   READINESS GATES
my-scheduler-69cfc986c7-xmjg2   1/1     Running   0          68s   10.244.2.18   kind-worker2   <none>           <none>
spec1                           0/1     Pending   0          30s   <none>        <none>         <none>           <none>
spec2                           1/1     Running   0          27s   10.244.1.12   kind-worker    <none>           <none>
spec3                           1/1     Running   0          24s   10.244.1.13   kind-worker    <none>           <none>
```

```
I0516 10:21:14.944013       1 log.go:194] Pod spec1 is in Prefilter phase.
I0516 10:21:14.944533       1 schedule_one.go:867] "Unable to schedule pod; no fit; waiting" pod="default/spec1" err="0/3 nodes are available: Not enough pods in group. preempti
on: 0/3 nodes are available: 3 No preemption victims found for incoming pod.."
I0516 10:21:17.787859       1 log.go:194] Pod spec2 is in Prefilter phase.
I0516 10:21:17.788487       1 log.go:194] Pod spec2 is in Score phase. Calculate the score of Node kind-worker.
I0516 10:21:17.788508       1 log.go:194] Pod spec2 is in Score phase. Calculate the score of Node kind-worker2.
I0516 10:21:17.792751       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/spec2" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
I0516 10:21:20.433260       1 log.go:194] Pod spec3 is in Prefilter phase.
I0516 10:21:20.433766       1 log.go:194] Pod spec3 is in Score phase. Calculate the score of Node kind-worker.
I0516 10:21:20.433788       1 log.go:194] Pod spec3 is in Score phase. Calculate the score of Node kind-worker2.
I0516 10:21:20.438087       1 schedule_one.go:252] "Successfully bound pod to node" pod="default/spec3" node="kind-worker" evaluatedNodes=3 feasibleNodes=2
```

Pod spec1 can't pass the prefilter, and Pod spec2 & 3 goes to worker (1300<1800)

(B) mode : Most

```
● student@ds-student21:~/NTHU-Scheduler-Plugin$ kubectl get po -o wide
  NAME                              READY   STATUS    RESTARTS   AGE   IP            NODE          NOMINATED NODE   READINESS GATES
  my-scheduler-69cfc986c7-gwj2x     1/1     Running   0          35s   10.244.2.19   kind-worker2  <none>           <none>
  spec1                             0/1     Pending   0          29s   <none>        <none>        <none>           <none>
  spec2                             1/1     Running   0          23s   10.244.2.20   kind-worker2  <none>           <none>
  spec3                             1/1     Running   0          19s   10.244.2.21   kind-worker2  <none>           <none>
```

```
I0516 10:25:55.770752        1 log.go:194] Pod spec1 is in Prefilter phase.
I0516 10:25:55.771498        1 schedule_one.go:867] "Unable to schedule pod; no fit; waiting" pod="default/spec1" err="0/3 nodes are available: Not enough pods in group. preempti
on: 0/3 nodes are available: 3 No preemption victims found for incoming pod.."
I0516 10:26:01.949970        1 log.go:194] Pod spec2 is in Prefilter phase.
I0516 10:26:01.950545        1 log.go:194] Pod spec2 is in Score phase. Calculate the score of Node kind-worker.
I0516 10:26:01.950567        1 log.go:194] Pod spec2 is in Score phase. Calculate the score of Node kind-worker2.
I0516 10:26:01.956203        1 schedule_one.go:252] "Successfully bound pod to node" pod="default/spec2" node="kind-worker2" evaluatedNodes=3 feasibleNodes=2
I0516 10:26:05.381084        1 log.go:194] Pod spec3 is in Prefilter phase.
I0516 10:26:05.381459        1 log.go:194] Pod spec3 is in Score phase. Calculate the score of Node kind-worker.
I0516 10:26:05.381489        1 log.go:194] Pod spec3 is in Score phase. Calculate the score of Node kind-worker2.
I0516 10:26:05.387219        1 schedule_one.go:252] "Successfully bound pod to node" pod="default/spec3" node="kind-worker2" evaluatedNodes=3 feasibleNodes=2
```

Pod spec1 can't pass the prefilter, and Pod spec2 & 3 goes to worker2 (1800>1300)

```
  NAME                              READY   STATUS    RESTARTS   AGE   IP            NODE          NOMINATED NODE   READINESS GATES
  my-scheduler-69cfc986c7-gwj2x     1/1     Running   0          35s   10.244.2.19   kind-worker2  <none>           <none>
  spec1                             0/1     Pending   0          29s   <none>        <none>        <none>           <none>
  spec2                             1/1     Running   0          23s   10.244.2.20   kind-worker2  <none>           <none>
  spec3                             1/1     Running   0          19s   10.244.2.21   kind-worker2  <none>           <none>
```