

COMP3230 – Assignment2

Q1.

5.1 11units. Since the space is 10 or lower would cause deadlock.

5.2 NO.

```
chngai@workbench q1> ./tesla_factory.out 3 11 12 12 12
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 11, num typeA: 12, num typeB: 12, num typeC: 12
====Final Report====
Num free space: 11
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 20.001023
```

```
chngai@workbench q1> ./tesla_factory.out 3 11 13 13 13
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 11, num typeA: 13, num typeB: 13, num typeC: 13
====Final Report====
Num free space: 10
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 1
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 21.001559
```

The number of robots increase from 12 12 12 to 13 13 13 results the production increased.

5.3

When number of robots:

- A equals B, C most, fastest
- A equals C, B most, slowest

```
chngai@workbench q1> ./tesla_factory.out 3 20 10 10 15
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 20, num typeA: 10, num typeB: 10, num typeC: 15
====Final Report====
Num free space: 20
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 15.001450
chngai@workbench q1> ./tesla_factory.out 3 20 10 15 10
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 20, num typeA: 10, num typeB: 15, num typeC: 10
====Final Report====
Num free space: 20
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 19.001757
chngai@workbench q1>
chngai@workbench q1> ./tesla_factory.out 3 20 15 10 10
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 20, num typeA: 15, num typeB: 10, num typeC: 10
====Final Report====
Num free space: 20
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 18.027376
```

When number of robots:

- A equals B, C least, slowest
- B equals C, B least, fastest

```
chngai@workbench q1> ./tesla_factory.out 3 20 20 20 15
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 20, num typeA: 20, num typeB: 20, num typeC: 15
====Final Report====
Num free space: 20
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 20.001547
chngai@workbench q1> ./tesla_factory.out 3 20 20 15 20
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 20, num typeA: 20, num typeB: 15, num typeC: 20
====Final Report====
Num free space: 20
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 19.001395
chngai@workbench q1> ./tesla_factory.out 3 20 15 20 20
Name: Ngai Cheuk Hin      UID: 3035488160
Production goal: 3, num space: 20, num typeA: 15, num typeB: 20, num typeC: 20
====Final Report====
Num free space: 20
Produced Skeleton: 0
Produced Engine: 0
Produced Chassis: 0
Produced Body: 0
Produced Window: 0
Produced Tire: 0
Produced Battery: 0
Produced Car: 3
Production task completed! 3 cars produced.
Production time: 17.001369
```