Discrete Event Simulation

Small Input Example

```
3

0 2

1 2

2 2

10

t 0 1 1.2

m 0 15 1

m 1 15 1.1

t 1 1 2

t 2 1.3 2

m 0 8.3 2

m 0 1.5 2

m 0 17.5 0.5

t 0 19 1.2

m 0 20.2 2

1 6

1 1
```

Player 0 arrives for training
Player 1 arrives for training

TIME: 1

Training Coach

Physiotherapist

Masseur

Player 0

Player 1

Training Queue

Physiotherapy Queue

Massage Queue

Player 2 arrives for training

TIME: 1.3

Training Coach

Physiotherapist

Masseur

Player 0

Player 1   Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 arrives for massage but this is **canceled**

TIME: 1.5

Training Coach

Physiotherapist

Masseur

Player 0

Player 0

Player 1   Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 finishes training

TIME: 2.2

Training Coach

Physiotherapist

Masseur

Player 1

Player 0

Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 1 finishes training

TIME: 4.2

Training Coach

Physiotherapist

Masseur

Player 2

Player 0

Player 1

Training Queue

Physiotherapy Queue

Massage Queue

Player 2 finishes training and player 2 and player 1 have **the same training time** so **player 1 is prioritized** because **arrival to physiotherapy** is **early** for her.
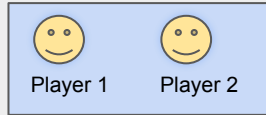
TIME: 6.2

Training Coach

Physiotherapist

Player 0

Masseur

Training Queue

Physiotherapy Queue

Player 1   Player 2

Massage Queue

Player 0 finishes physiotherapy

TIME: 8.2

Training Coach

Physiotherapist

Masseur
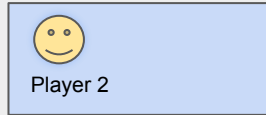
Player 1

Player 2

Training Queue

Physiotherapy Queue

Massage Queue
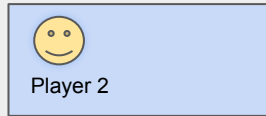
Player 0 arrives for massage

TIME: 8.3

Training Coach

Physiotherapist

Masseur

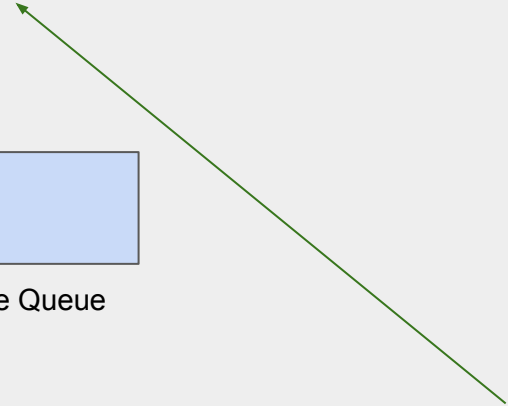Player 1

Player 0

Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 finishes massage

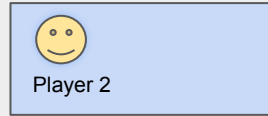**TIME: 10.3**

Training Coach

Physiotherapist

Masseur

Player 1

Training Queue

Physiotherapy Queue

Player 2

Massage Queue

Player 1 finishes physiotherapy

TIME: 14.2

Training Coach

Physiotherapist

Masseur

Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 arrives for massage
Player 1 arrives for massage
They have **the same skill level**
They have also **arrive at the same time**
Then **ID is important**

TIME: 15

Training Coach

Physiotherapist

Player 2

Masseur
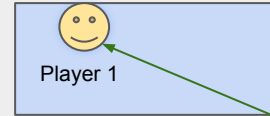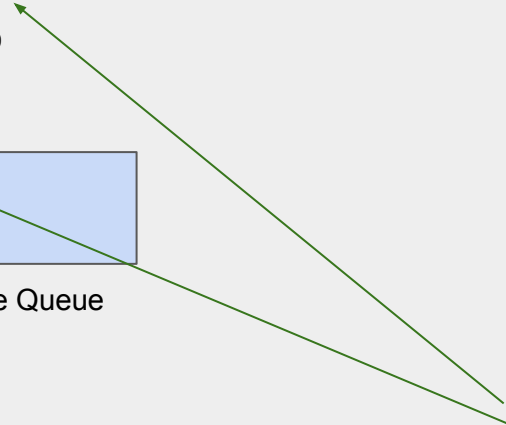
Player 0

Training Queue

Physiotherapy Queue

Massage Queue

Player 1

Player 0 finishes massage

TIME: 16

Training Coach

Physiotherapist

Masseur

Player 2

Player 1

Training Queue

Physiotherapy Queue

Massage Queue

Player 1 finishes massage

TIME: 17.1

Training Coach

Physiotherapist

Masseur

Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 arrives for massage

TIME: 17.5

Training Coach

Physiotherapist

Player 2

Masseur

Player 0

Training Queue

Physiotherapy Queue
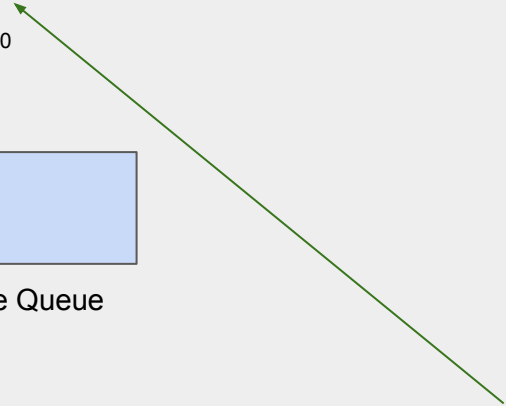
Massage Queue

Player 0 finishes massage

TIME: 18

Training Coach

Physiotherapist

Masseur

Player 2

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 arrives for training

TIME: 19

Training Coach

Player 0

Physiotherapist

Player 2

Masseur

Training Queue

Physiotherapy Queue

Massage Queue

Player 0 finishes training
Player 2 finishes physiotherapy
Player 0 arrives for massage.
This is both **invalid** and **canceled**
but we decided to count it as an
invalid

TIME: 20.2

Training Coach

:-)

Physiotherapist

:-)

:-)

Player 0

Masseur

:-)

:-)

Player 0

INVALID

Training Queue

Physiotherapy Queue
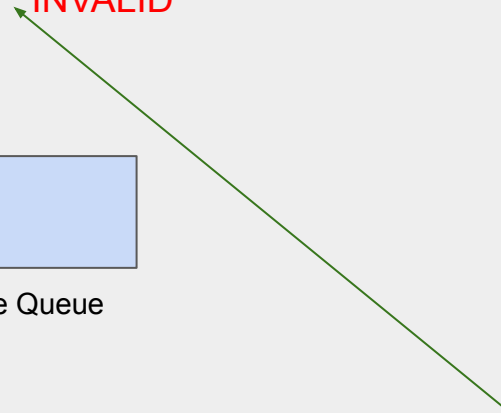
Massage Queue

Player 0 finishes physiotherapy
and also simulation ends.

TIME: 26.2

Training Coach

Physiotherapist

Masseur

Training Queue

Physiotherapy Queue

Massage Queue

Expected Output

2

2

1

1.025

3.000

0.250

1.600

6.000

1.150

11.625

2 8.000

0 0.000

1

1

26.200