

Software Engineer Coding Challenge:

You are starting a new company that will provide local deliveries using either drones or cyclists.

Please create a system for scheduling deliveries. You will need to take into account the number of each vehicle type at your disposal. An attempt should be made to reduce costs and/or increase the number of deliveries per day.

- A delivery contains up to 4 packages
- A package should contain a product description and weight which can be looked up
- A vehicle has a random ID formed of 2 letters followed by 4 numbers

Provide whichever classes and methods you deem necessary.

Notes:

- Drones can only carry one package of weight up to 5kg
- Cyclists can carry up to 4 packages, totalling 50kg, without affecting speed.
- Your drones fly at 30km/h
- Your cyclists travel at 15km/h
- Your drones can fly over buildings, and thus can fly in a straight line
- Your cyclists stick to roads, which happen to be in an exact grid pattern.
- The coordinates you are given are in metres exactly aligned with the road grid.
- Regardless of the vehicle type, you charge £5 per km, measured in a straight line

Sample inputs:

```
delivery0 = {'packages': ('product0', 'product1', 'product2'), 'destination': (5, 4)}
```

```
delivery1 = {'packages': ('product3'), 'destination': (15, 9)}
```

```
delivery2 = {'packages': ('product4'), 'destination': (6, 7)}
```

Sample weights:

```
'product0': 3.5
```

```
'product1': 4.5
```

```
'product2': 8.2
```

```
'product3': 5
```

```
'product4': 43
```