

1 Prerequisites

The solution to this challenge should be submitted in GitHub with the full source code and configuration files to build and run it in a Docker container. Please also ensure that the "VeriDev" user is invited as a collaborator to the repo from the beginning.

2 Challenge Description

Some courses grant their students allowances based on the criteria below:

- All Students get a Basic Allowance defined by their age
- Students receive a Meal allowance, but only if they are in attendance
- Students receive a Travel allowance if they need to travel 5 kms from home and they are in attendance

A students attendance status falls into the following categories:

- Attending (AT)
- Annual Leave (AL)
- Certified Sick Leave (CSL)
- Uncertified Sick Leave (USL)

Based on this attendance status further constraints are enforced:

- For annual leave(AL) *and* certified sick leave(CSL), they receive their full basic rate but are docked meal and travel.
- For uncertified sick leave(USL) they are docked meal and travel and also their basic daily pay.

The table below defines the basic rates And all of the extras:

Age range	Basic Rate	Extras	Amount
26+	90.50	Meal	5.5 Per day
25	85.90	Travel	1.09 per km to/from work
18-24	81.00	Fuel	1 per day
< 18	72.50		

You can assume that each attendance entry for a particular student is one day.

Your task is to translate this logic into an application that given a csv of workplaces and student attendance, produces the total payout for each student (**sorted by student id**). The input files consist of the following format:

- **workplaces.csv** in the format of:

```
id,name,location
1, Firehose Inc, (4,15)
```

- **attendance.csv** in the format of:

```
id,name,location,DOB, workplace,status
1, John O'Toole, (5,10), 2003-10-12, 1, AT
1, John O'Toole, (5,10), 2003-10-12, 1, AT
1, John O'Toole, (5,10), 2003-10-12, 1, USL
```

- Your application should produce the following output to **stdout**:

```
id,payout
1, 135.60
```

To calculate the distance between the two points use the following formula:

$$distance(P, Q) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \quad (1)$$

Assume that the distance calculated is in kilometers.

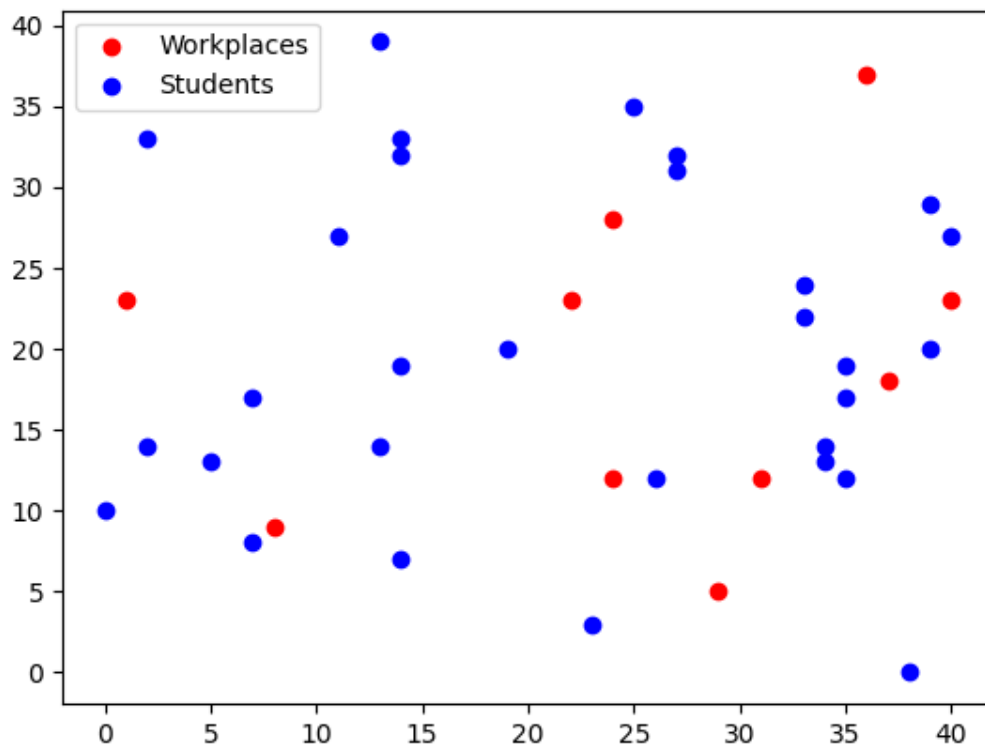


Figure 1: Distribution of the input data across the 40x40 grid