The Oyster Card Problem

We are required to model the following fare card system which is a limited version of

London’s Oyster card system. At the end of the program, we should be able to demonstrate a

user loading a card with £30, and taking the following trips, and then viewing the balance.

- Tube Holborn to Earl’s Court

- 328 bus from Earl’s Court to Chelsea

- Tube Earl’s court to Hammersmith

Operation

When the user passes through the inward barrier at the station, their oyster card is charged

the maximum fare.

When they pass out of the barrier at the exit station, the fare is calculated and the maximum

fare transaction removed and replaced with the real transaction (in this way, if the user

doesn’t swipe out, they are charged the maximum fare).

All bus journeys are charged at the same price.

The system should favour the customer where more than one fare is possible for a given

journey. E.g. Holburn to Earl’s Court is charged at £2.50.

For the purposes of this program use the following data:

Stations and zones:

