

ANALYSIS OF A TRAIN BOOKING SYSTEM

Booking a Ticket

When users wish to book a train ticket, they are presented with a list of trains at specific times (see Table 1.1 for the trains we shall support). Users are able to select a train on which they would like to book a ticket from a display similar to the following.

Available trains to book:

```
1 0907 Nottingham to London St Pancras
2 0930 Nottingham to London St Pancras
3 1007 Nottingham to London St Pancras
...
```

Please enter the number of the train you would like to book on:

Once a train has been selected, the system will then ask the user how many tickets they wish to book and whether they want to book standard class or first class (although if there are zero seats available in a particular class on that train then they are not given the option to book). Users may also select the (non-existent) train zero, which enables them to view passengers assigned to trains (see below).

If there enough seats available to fulfil the booking, then users are asked for the names of each passenger in turn and allocates a seat in a coach to that passenger. The user is then given a list of seat numbers allocated to each passenger and the tickets printed as shown (seat numbers are shown as the coach followed by the seat number):

4 Tickets booked:

```
1: Steven Bagley      Seat: C51
2: David Brailsford  Seat: C52
3: James Ollis       Seat: C53
4: Alex Macdonald    Seat: C54
```

The seats are then marked as containing the passengers entered. If no seats are available, then system reports this to the user and gives them the option of booking on another train.

Trains

There are two kinds of train supported: *Meridian* and *HST*. *Meridian* trains consist of a rake¹ of 4 coaches, 3 standard class and 1 first class. *HST* trains consist of a rake of 6 coaches, 4 standard class and 2 first. We shall assume that **all** standard class coaches have 60 seats into which a passenger can be allocated and all first class coaches 30 seats. In terms of coach numbering, First class coaches always come before standard class coaches.

Viewing Passenger Lists

If the user attempts to book on train 0, then they are taken to a screen that lets them view who has booked which seats on any specific train. They the following menu is displayed:

¹ Rake is the collective noun used to describe the coaches in a particular train, don't ask me why...

Select train to view passengers:

- 1 0907 Nottingham to London St Pancras
- 2 0930 Nottingham to London St Pancras
- ...

0 to return to booking system.

Please enter the number of the train you would like to book on:

When users select a train they wish to view (by entering the number) they are shown details for the train as follows:

Train: 0907 Nottingham to London St Pancras
4 coaches

Coach 1: First Class

- 01: Verity Lambert
- 02: John Wiles
- 03: Innes Lloyd
- 04: Peter Bryant
- 05: Derrick Sherwin
- 06: Barry Letts
- ...
- 30: Empty

Coach 2: Standard Class

- 01: Russell Davies
- 02: Phil Collinson
- 03: Susie Ligget
- ...

After the details have been displayed the user is given the option of viewing another train. If train zero is viewed, then the user is taken back to the main booking screen.

Route	Departure	Arrival	Type
Nottingham to London St Pancras	09:07	11:07	Meridian
Nottingham to London St Pancras	09:30	11:17	HST
Nottingham to London St Pancras	10:07	12:04	Meridian
Nottingham to London St Pancras	10:30	12:15	HST
Nottingham to London St Pancras	11:07	13:04	Meridian
Nottingham to London St Pancras	11:30	13:15	HST
Nottingham to London St Pancras	12:07	14:04	Meridian

Table 1.1 — Details of trains in the booking system