MARKS

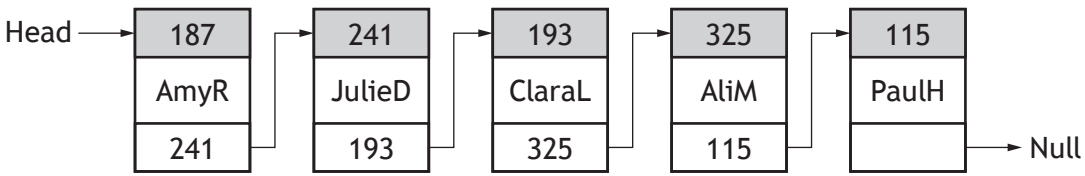
2. A ticketing website manages demand for newly released tickets by using a queue to store details of customers who are waiting to purchase tickets. The ticket queue will be implemented as a single linked list.

When tickets for events are released, the details of customers who wish to purchase tickets are added to the end of the linked list. As customers complete or cancel their purchases, their details are removed from the front of the linked list. If someone in the queue closes their browser, they lose their position in the queue and their details are removed from the linked list.

(a) Explain why this ticket order queue will be implemented as a single linked list rather than a double linked list. **1**

(b) The diagram below shows the contents of the linked list with details of several customers who are in the queue waiting to buy tickets.

AmyR is stored in memory location 187 and will be the next customer able to purchase tickets.



(i) Describe the changes that will take place within the linked list when user AmyR completes her purchase. **1**

(ii) Describe the changes that will take place within the linked list when user ClaraL closes her browser. **1**

(iii) Describe the changes that will take place within the linked list when a new user, SamK, joins the queue. Assume that his username is stored in memory location 227. **1**