

WIA2005 Algorithm Design & Analysis
Semester 2, 2016/17
Lab 9

1. Runway Reservation System is an application that handles reservation of landing slot request for a single runway airport. The system has the following features:
 - Reserve request that specifies landing time t .
 - Add t to a set of landing request R , if no other landings are scheduled within 3 minutes.
 - Remove from set:
 - Landed plane.
 - Diverted plane with existing request.
 - Canceled flight with existing landing reservation.
 - Search next landing request, given the current request time.
 - Print out landing request list.

The following are the sequence of request (Initial set R is empty. Assuming the time is monotonically increasing and the list is updated every $t = 20$):

```
Reference time  $t(\text{now})$ : 20
Request (60)
Request (67)
Request (41)
Request (64)
Request (33)
Request (50)
Request (42)
Request (70)
Request (37)
Request (88)
Request (68)
Request (88)
Request (45)
Cancel (42)
Cancel (64)
Divert (70)
Reference time  $t(\text{now})$ : 40 (Assuming all requests
    before this time has landed)
Print(R)
```

The application will give the appropriate message for each operation.