Computer Programming I **—** Assignment 11

Design a Hi-Lai Harbour Taoyuan Location Reservation System

**Functions:**

1. Book a Table: Insert a new record into the binary file Reservations.dat, and decrease by one the number of available tables at corresponding time in AvailTables.dat.

2. My Bookings: Display all records in Reservations.dat for the current user, then let the user choose one of them. Moreover, let user choose whether to cancel a reservation. If the user choose to cancel a reservation, then increase by one the number of available tables at corresponding time in AvailTables.dat.

**Requirements:** Global variables, except tableTypes and TOTAL\_NUM\_TABLES, are not allowed.

The file record format of the file Reservations.dat:

int numCustomers // number of customers

Date date // reservation date

int time // reservation time code

char name[ 8 ] // name

char mobileNumber[ 12 ] // mobile phone number

char email[ 40 ] // email address

char password[ 12 ] // reservation password

char reservationNumber[ 12 ] // reservation number

The file record format of the file AvailTables.dat:

Date date

int numAvailTables[ 4 ][ 6 ] // the number of available tables, specifically,

// numAvailTables[ 1 ][ i ] is the number of available type i tables on 11:30

// numAvailTables[ 2 ][ i ] is the number of available type i tables on 14:30

// numAvailTables[ 3 ][ i ] is the number of available type i tables on 17:30

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| **Table Type** | **Number of customers** |
| **1** | **1~2** |
| **2** | **3~4** |
| **3** | **4~5** |
| **4** | **6~7** |
| **5** | **10~12** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number of customers |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |  | 10 | 11 | 12 |
| Table Type |  | 1 | 1 | 2 | 2 | 3 | 4 | 4 |  |  | 5 | 5 | 5 |

AvailTables1.dat : empty file

AvailTables2.dat : 2021/11/16 ~ 2021/12/15

AvailTables3.dat : 2021/12/1 ~ 2021/12/30

AvailTables4.dat : 2021/12/16 ~ 2022/1/14

The screen dialog #1 (executed on 2021/12/12):

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| Welcome to Hi-Lai Harbour Taoyuan Location!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3):2  No reservations! **displayed in reservationInquiry**  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date **displayed in chooseDateTime**  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  **displayed in displayAvailDates**  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time: **displayed in chooseDateTime**  1. 11:30  2. 14:30  3. 17:30  ? 1  Enter name: aa  Enter mobile number: 11  Enter email address: aa  Enter reservation password: 11  Mobile No. Name Date Time Email No of Customers Password Reservation No.  11 aa 2021/12/13 11:30 aa 2 11 55914876  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time:  1. 11:30  2. 14:30  3. 17:30  ? 1  Enter name: bb  Enter mobile number: 22  Enter email address: bb  Enter reservation password: 22  Mobile No. Name Date Time Email No of Customers Password Reservation No.  22 bb 2021/12/13 11:30 bb 2 22 01953708  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time:  2. 14:30  3. 17:30  ? 2  Enter name: cc  Enter mobile number: 33  Enter email address: cc  Enter reservation password: 33  Mobile No. Name Date Time Email No of Customers Password Reservation No.  33 cc 2021/12/13 14:30 cc 2 33 09806415  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time:  2. 14:30  3. 17:30  ? 2  Enter name: dd  Enter mobile number: 44  Enter email address: dd  Enter reservation password: 44  Mobile No. Name Date Time Email No of Customers Password Reservation No.  44 dd 2021/12/13 14:30 dd 2 44 35024008  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time:  3. 17:30  ? 3  Enter name: ee  Enter mobile number: 55  Enter email address: ee  Enter reservation password: 55  Mobile No. Name Date Time Email No of Customers Password Reservation No.  55 ee 2021/12/13 17:30 ee 2 55 17038472  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time:  3. 17:30  ? 3  Enter name: ff  Enter mobile number: 66  Enter email address: ff  Enter reservation password: 66  Mobile No. Name Date Time Email No of Customers Password Reservation No.  66 ff 2021/12/13 17:30 ff 2 66 29376062  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  2. 2021/12/14 3. 2021/12/15 4. 2021/12/16 5. 2021/12/17  6. 2021/12/18 7. 2021/12/19 8. 2021/12/20 9. 2021/12/21  10. 2021/12/22 11. 2021/12/23 12. 2021/12/24 13. 2021/12/25  14. 2021/12/26 15. 2021/12/27 16. 2021/12/28 17. 2021/12/29  18. 2021/12/30 19. 2021/12/31 20. 2022/01/01 21. 2022/01/02  22. 2022/01/03 23. 2022/01/04 24. 2022/01/05 25. 2022/01/06  26. 2022/01/07 27. 2022/01/08 28. 2022/01/09 29. 2022/01/10  30. 2022/01/11  ? 2  Choose a time:  1. 11:30  2. 14:30  3. 17:30  ? 1  Enter name: gg  Enter mobile number: 77  Enter email address: gg  Enter reservation password: 77  Mobile No. Name Date Time Email No of Customers Password Reservation No.  77 gg 2021/12/14 11:30 gg 2 77 89497610  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 2  Enter reservation number: 31233411 **displayed in reservationInquiry**  Enter reservation password: 66  **displayed in displayReservationInfo**  Mobile No. Name Date Time Email No of Customers Password Reservation No.  66 ff 2021/12/13 17:30 ff 2 66 29376062  Cancel this reservation ( y/n )? y **displayed in reservationInquiry**  This reservation has been cancelled.  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 2  Enter reservation number: 29376062 **displayed in reservationInquiry**  No reservations with this reservation number!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/13 2. 2021/12/14 3. 2021/12/15 4. 2021/12/16  5. 2021/12/17 6. 2021/12/18 7. 2021/12/19 8. 2021/12/20  9. 2021/12/21 10. 2021/12/22 11. 2021/12/23 12. 2021/12/24  13. 2021/12/25 14. 2021/12/26 15. 2021/12/27 16. 2021/12/28  17. 2021/12/29 18. 2021/12/30 19. 2021/12/31 20. 2022/01/01  21. 2022/01/02 22. 2022/01/03 23. 2022/01/04 24. 2022/01/05  25. 2022/01/06 26. 2022/01/07 27. 2022/01/08 28. 2022/01/09  29. 2022/01/10 30. 2022/01/11  ? 1  Choose a time:  3. 17:30  ? 3  Enter name: hh  Enter mobile number: 88  Enter email address: hh  Enter reservation password: 88  Mobile No. Name Date Time Email No of Customers Password Reservation No.  88 hh 2021/12/13 17:30 hh 2 88 09151834  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 3  請按任意鍵繼續 . . . |

The screen dialog #2 (executed on 2021/12/13):

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| Welcome to Hi-Lai Harbour Taoyuan Location!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 2  Enter reservation number: 09151834  Enter reservation password: 88  Mobile No. Name Date Time Email No of Customers Password Reservation No.  88 hh 2021/12/13 17:30 hh 2 88 09151834  Cancel this reservation ( y/n )? n  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/14 2. 2021/12/15 3. 2021/12/16 4. 2021/12/17  5. 2021/12/18 6. 2021/12/19 7. 2021/12/20 8. 2021/12/21  9. 2021/12/22 10. 2021/12/23 11. 2021/12/24 12. 2021/12/25  13. 2021/12/26 14. 2021/12/27 15. 2021/12/28 16. 2021/12/29  17. 2021/12/30 18. 2021/12/31 19. 2022/01/01 20. 2022/01/02  21. 2022/01/03 22. 2022/01/04 23. 2022/01/05 24. 2022/01/06  25. 2022/01/07 26. 2022/01/08 27. 2022/01/09 28. 2022/01/10  29. 2022/01/11 30. 2022/01/12  ? 1  Choose a time:  1. 11:30  2. 14:30  3. 17:30  ? 1  Enter name: aa  Enter mobile number: 11  Enter email address: aa  Enter reservation password: 11  Mobile No. Name Date Time Email No of Customers Password Reservation No.  11 aa 2021/12/14 11:30 aa 2 11 54120029  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 3  請按任意鍵繼續 . . . |

The screen dialog #3 (executed on 2021/12/14):

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| Welcome to Hi-Lai Harbour Taoyuan Location!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 2  Enter reservation number: 09151834  No reservations with this reservation number!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 1  Enter the number of customers (1 - 7, 10 - 12): 2  Choose a date  1. 2021/12/15 2. 2021/12/16 3. 2021/12/17 4. 2021/12/18  5. 2021/12/19 6. 2021/12/20 7. 2021/12/21 8. 2021/12/22  9. 2021/12/23 10. 2021/12/24 11. 2021/12/25 12. 2021/12/26  13. 2021/12/27 14. 2021/12/28 15. 2021/12/29 16. 2021/12/30  17. 2021/12/31 18. 2022/01/01 19. 2022/01/02 20. 2022/01/03  21. 2022/01/04 22. 2022/01/05 23. 2022/01/06 24. 2022/01/07  25. 2022/01/08 26. 2022/01/09 27. 2022/01/10 28. 2022/01/11  29. 2022/01/12 30. 2022/01/13  ? 1  Choose a time:  1. 11:30  2. 14:30  3. 17:30  ? 1  Enter name: aa  Enter mobile number: 11  Enter email address: aa  Enter reservation password: 11  Mobile No. Name Date Time Email No of Customers Password Reservation No.  11 aa 2021/12/15 11:30 aa 2 11 92324235  Reservation Completed!  1 - Book a Table  2 - My Bookings  3 - End  Enter your choice: (1~3): 3  請按任意鍵繼續 . . . |