Computer Programming I — Homework Assignment **#**12

**Problem:** Design a simplified Taiwan High Speed Rail Booking System

**Function:**

1. Booking: Add a new record into the end of the binary file **Reservation details.dat** (randomly generate a reservation number).
2. Booking History: Enter the contact person's ID number and reservation number to retrieve an existing reservation.

① Cancellation: Cancel the reservation

② Reduce: Decrease the number of passengers

**Requirements:**

1. Each function (include the main function) contains at most 70 instructions.

2. Global variables, except **adultTicketPrice** and **departureTimes** are not allowed.

// top-right: ticket fares for business car, bottom-left: ticket fares for standard car

**int adultTicketPrice[ 13 ][ 13 ] = {**

**0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,**

**0, 0, 0, 0, 400, 560, 735, 1060, 1205, 1325, 1500, 1830, 2000,**

**0, 40, 0, 0, 350, 510, 680, 1000, 1140, 1280, 1455, 1780, 1950,**

**0, 70, 40, 0, 320, 470, 640, 965, 1110, 1240, 1420, 1740, 1910,**

**0, 200, 160, 130, 0, 320, 495, 805, 965, 1095, 1260, 1590, 1760,**

**0, 330, 290, 260, 130, 0, 325, 655, 805, 925, 1110, 1430, 1600,**

**0, 480, 430, 400, 280, 140, 0, 485, 630, 760, 925, 1260, 1430,**

**0, 750, 700, 670, 540, 410, 270, 0, 320, 440, 615, 940, 1110,**

**0, 870, 820, 790, 670, 540, 390, 130, 0, 295, 460, 800, 965,**

**0, 970, 930, 900, 780, 640, 500, 230, 110, 0, 340, 660, 830,**

**0, 1120, 1080, 1050, 920, 790, 640, 380, 250, 150, 0, 495, 655,**

**0, 1390, 1350, 1320, 1190, 1060, 920, 650, 530, 420, 280, 0, 325,**

**0, 1530, 1490, 1460, 1330, 1200, 1060, 790, 670, 560, 410, 140, 0 };**

**char departureTimes[ 37 ][ 8 ] = { "",**

**"06:00", "06:30", "07:00", "07:30", "08:00", "08:30", "09:00", "09:30",**

**"10:00", "10:30", "11:00", "11:30", "12:00", "12:30", "13:00", "13:30",**

**"14:00", "14:30", "15:00", "15:30", "16:00", "16:30", "17:00", "17:30",**

**"18:00", "18:30", "19:00", "19:30", "20:00", "20:30", "21:00", "21:30",**

**"22:00", "22:30", "23:00", "23:30" };**

The format of the file **Reservation details.dat** is as follows:

struct ReservationDetails

{

char reservationNumber[ 12 ]; // used to identify a reservation 訂位代號

char trainNumber[ 8 ]; // used to identify a train 車次號碼

char idNumber[ 12 ]; // the id number of the contact person 取票人的身分證字號

char phone[ 12 ]; // the (local or mobile) phone number of the contact person 取票人的聯絡電話

char date[ 12 ]; // outbound date 搭乘日期

int originStation; // the origin station code 起程站代碼

int destinationStation; // the destination station code 到達站代碼

int carClass; // the car class code; 1:standard car, 2:business car 車廂種類; 1:標準車廂, 2:商務車廂

int adultTickets; // the number of adult tickets 全票張數

int concessionTickets; // the number of concession tickets 優待票張數

};

struct Train

{

char trainNumber[ 8 ]; // used to identify a train 車次號碼

char departureTimes[ 13 ][ 8 ]; // the departure time of a train for each station 火車在各站的離站時間

}; // departureTimes[0] is not used departureTimes[0]未使用

Sample screen dialog **#**1

|  |
| --- |
| **Taiwan High Speed Rail Booking System**  **Enter Your Choice**  **1. Booking**  **2. Booking History**  **3. End Program**  **? 1**  **Origin Station displayed by inputReservationDetails**  **1. Nangang**  **2. Taipei**  **3. Banqiao**  **4. Taoyuan**  **5. Hsinchu**  **6. Miaoli**  **7. Taichung**  **8. Changhua**  **9. Yunlin**  **10. Chiayi**  **11. Tainan**  **12. Zuoying**  **? 2**  **Destination Station**  **1. Nangang**  **2. Taipei**  **3. Banqiao**  **4. Taoyuan**  **5. Hsinchu**  **6. Miaoli**  **7. Taichung**  **8. Changhua**  **9. Yunlin**  **10. Chiayi**  **11. Tainan**  **12. Zuoying**  **? 7**  **Car Class**  **1. Standard Car**  **2. Business Car**  **? 1**  **Departure Date: 2019-12-28**  **Departure Time**  **1. 06:00**  **2. 06:30**  **3. 07:00**  **4. 07:30**  **5. 08:00**  **6. 08:30**  **7. 09:00**  **8. 00:30**  **9. 10:00**  **10. 10:30**  **11. 11:00**  **12. 11:30**  **13. 12:00**  **14. 12:30**  **15. 13:00**  **16. 13:30**  **17. 14:00**  **18. 14:30**  **19. 15:00**  **20. 15:30**  **21. 16:00**  **22. 16:30**  **23. 17:00**  **24. 17:30**  **25. 18:00**  **26. 18:30**  **27. 19:00**  **28. 19:30**  **29. 20:00**  **30. 20:30**  **31. 21:00**  **32. 21:30**  **33. 22:00**  **34. 22:30**  **? 13**  **How many adult tickets? 2**  **How many concession tickets? 2**  **Train No. Departure Arrival displayed by selectSouthboundTrain**  **825 12:11 13:17**  **1637 12:21 13:25**  **129 12:31 13:20**  **639 12:46 13:48**  **829 13:11 14:17**  **1643 13:21 14:25**  **133 13:31 14:20**  **645 13:46 14:48**  **833 14:11 15:17**  **1649 14:21 15:25**  **Enter Train Number: 825**  **Trip Details**  **displayed by display**  **Date Train No. From To Departure Arrival Adult Concession Fare Class**  **2019-12-28 825 Taipei Taichung 12:11 13:17 700\*2 350\*2 2100 Standard**  **Enter Contact Person Information displayed by inputContactInfo**  **ID Number: C120057213**  **Phone: 0970722135**  **Reservation Number: 95490519**  **Reservation Completed!**  **Enter Your Choice**  **1. Booking**  **2. Booking History**  **3. End Program**  **? 2**  **Enter ID Number: C120057213 displayed by existReservation**  **Enter Reservation Number: 95490519**  **Reservation Details displayed by displayReservations**  **displayed by display**  **Date Train No. From To Departure Arrival Adult Concession Fare Class**  **2019-12-28 825 Taipei Taichung 12:11 13:17 700\*2 350\*2 2100 Standard**  **Enter Your Choice**  **1. Cancellation**  **2. Reduce**  **3. End**  **? 2**  **How many adult tickets to cancel？1 displayed by reduceSeats**  **How many concession tickets to cancel？1**  **Reservation Details displayed by displayReservations**  **displayed by display**  **Date Train No. From To Departure Arrival Adult Concession Fare Class**  **2019-12-28 825 Taipei Taichung 12:11 13:17 700\*1 350\*1 1050 Standard**  **You have successfully reduced the number of tickets! displayed by reduceSeats**  **Enter Your Choice**  **1. Booking**  **2. Booking History**  **3. End Program**  **? 2**  **Enter ID Number: C120057213 displayed by existReservation**  **Enter Reservation Number: 95490519**  **Reservation Details displayed by displayReservations**  **displayed by display**  **Date Train No. From To Departure Arrival Adult Concession Fare Class**  **2019-12-28 825 Taipei Taichung 12:11 13:17 700\*1 350\*1 1050 Standard**  **Enter Your Choice**  **1. Cancellation**  **2. Reduce**  **3. End**  **? 1**  **Reservation Cancelled! displayed by reservationHistory**  **Enter Your Choice**  **1. Booking**  **2. Booking History**  **3. End Program**  **? 3**  **Thank you! Goodbye!**  **請按任意鍵繼續 . . .** |

Sample screen dialog **#**1

|  |
| --- |
| Taiwan High Speed Rail Booking System  Enter Your Choice  1. Booking  2. Booking History  3. End Program  ? a  ? 0  ? 4  ? 1  Origin Station  1. Nangang  2. Taipei  3. Banqiao  4. Taoyuan  5. Hsinchu  6. Miaoli  7. Taichung  8. Changhua  9. Yunlin  10. Chiayi  11. Tainan  12. Zuoying  ? a  ? 0  ? 13  ? 6  Destination Station  1. Nangang  2. Taipei  3. Banqiao  4. Taoyuan  5. Hsinchu  6. Miaoli  7. Taichung  8. Changhua  9. Yunlin  10. Chiayi  11. Tainan  12. Zuoying  ? a  ? 0  ? 13  ? 9  Car Class  1. Standard Car  2. Business Car  ? a  ? 0  ? 3  ? 1  Departure Date: 999  Departure Time  1. 06:00  2. 06:30  3. 07:00  4. 07:30  5. 08:00  6. 08:30  7. 09:00  8. 00:30  9. 10:00  10. 10:30  11. 11:00  12. 11:30  13. 12:00  14. 12:30  15. 13:00  16. 13:30  17. 14:00  18. 14:30  19. 15:00  20. 15:30  21. 16:00  22. 16:30  23. 17:00  24. 17:30  25. 18:00  26. 18:30  27. 19:00  28. 19:30  29. 20:00  30. 20:30  31. 21:00  32. 21:30  33. 22:00  34. 22:30  ? a  ? 0  ? 35  ? 22  How many adult tickets? 3  How many concession tickets? 2  Train No. Departure Arrival  841 16:58 17:41  845 17:58 18:41  849 18:58 19:41  853 19:58 20:41  857 20:58 21:41  861 21:58 22:41  Enter Train Number: 841  Trip Details  Date Train No. From To Departure Arrival Adult Concession Fare Class  999 841 Miaoli Yunlin 16:58 17:41 500\*3 250\*2 2000 Standard  Enter Contact Person Information  ID Number: 999  Phone: 999  Reservation Number: 26865914  Reservation Completed!  Enter Your Choice  1. Booking  2. Booking History  3. End Program  ? 2  Enter ID Number: 999  Enter Reservation Number: 999  Reservation record not found.  Enter ID Number: 888  Enter Reservation Number: 26865914  Reservation record not found.  Enter ID Number: 999  Enter Reservation Number: 26865914  Reservation Details  Date Train No. From To Departure Arrival Adult Concession Fare Class  999 841 Miaoli Yunlin 16:58 17:41 500\*3 250\*2 2000 Standard  Enter Your Choice  1. Cancellation  2. Reduce  3. End  ? a  ? 0  ? 4  ? 2  How many adult tickets to cancel？1  How many concession tickets to cancel？0  Reservation Details  Date Train No. From To Departure Arrival Adult Concession Fare Class  999 841 Miaoli Yunlin 16:58 17:41 500\*2 250\*2 1500 Standard  You have successfully reduced the number of tickets!  Enter Your Choice  1. Booking  2. Booking History  3. End Program  ? 3  Thank you! Goodbye!  請按任意鍵繼續 . . . |

Station Code

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nangang | Taipei | Banqiao | Taoyuan | Hsinchu | Miaoli | Taichung | Changhua | Yunlin | Chiayi | Tainan | Zuoying |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

Regular Full Fare Tickets

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Station | Nangang | Taipei | Banqiao | Taoyuan | Hsinchu | Miaoli | Taichung | Changhua | Yunlin | Chiayi | Tainan | Zuoying | Business Car tickets |
| Nangang | 0 | 0 | 0 | 500 | 700 | 920 | 1330 | 1510 | 1660 | 1880 | 2290 | 2500 |
| Taipei | 40 | 0 | 0 | 440 | 640 | 850 | 1250 | 1430 | 1600 | 1820 | 2230 | 2440 |
| Banqiao | 70 | 40 | 0 | 400 | 590 | 800 | 1210 | 1390 | 1550 | 1780 | 2180 | 2390 |
| Taoyuan | 200 | 160 | 130 | 0 | 400 | 620 | 1010 | 1210 | 1370 | 1580 | 1990 | 2200 |
| Hsinchu | 330 | 290 | 260 | 130 | 0 | 410 | 820 | 1010 | 1160 | 1390 | 1790 | 2000 |
| Miaoli | 480 | 430 | 400 | 280 | 140 | 0 | 610 | 790 | 950 | 1160 | 1580 | 1790 |
| Taichung | 750 | 700 | 670 | 540 | 410 | 270 | 0 | 400 | 550 | 770 | 1180 | 1390 |
| Changhua | 870 | 820 | 790 | 670 | 540 | 390 | 130 | 0 | 370 | 580 | 1000 | 1210 |
| Yunlin | 970 | 930 | 900 | 780 | 640 | 500 | 230 | 110 | 0 | 430 | 830 | 1040 |
| Chiayi | 1120 | 1080 | 1050 | 920 | 790 | 640 | 380 | 250 | 150 | 0 | 620 | 820 |
| Tainan | 1390 | 1350 | 1320 | 1190 | 1060 | 920 | 650 | 530 | 420 | 280 | 0 | 410 |
| Zuoying | 1530 | 1490 | 1460 | 1330 | 1200 | 1060 | 790 | 670 | 560 | 410 | 140 | 0 |
| Standard Car tickets | | | |

Timetable - Southbound

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Train No. | Nangang | Taipei | Banqiao | Taoyuan | Hsinchu | Miaoli | Taichung | Changhua | Yunlin | Chiayi | Tainan | Zuoying |
| 583 | — | — | — | — | — | — | 06:25 | 06:37 | 06:47 | 06:59 | 07:17 | 07:30 |
| 803 | 06:15 | 06:26 | 06:34 | 06:49 | 07:02 | 07:13 | 07:32 | 07:45 | 07:56 | 08:10 | 08:28 | 08:40 |
| 203 | — | 06:30 | 06:38 | — | — | — | 07:20 | — | — | 07:45 | 08:03 | 08:15 |
| 603 | 06:40 | 06:51 | 07:00 | 07:15 | 07:27 | — | 07:53 | — | — | 08:19 | 08:38 | 08:50 |
| 805 | 07:00 | 07:11 | 07:19 | 07:34 | 07:47 | 07:58 | 08:17 | 08:30 | 08:41 | 08:55 | 09:13 | 09:25 |
| 1607 | 07:10 | 07:21 | 07:29 | 07:43 | 07:56 | — | 08:25 | — | — | 08:50 | 09:07 | 09:20 |
| 109 | 07:20 | 07:31 | 07:39 | — | — | — | 08:20 | — | — | — | — | 09:05 |
| 1505 | 07:25 | 07:36 | 07:46 | 08:01 | 08:12 | 08:25 | 08:42 | — | — | — | — | — |
| 609 | 07:35 | 07:46 | 07:55 | 08:10 | 08:22 | — | 08:48 | — | — | 09:14 | 09:33 | 09:45 |
| 205 | 07:40 | 07:51 | 07:59 | — | — | — | 08:40 | — | — | — | 09:18 | 09:30 |
| 809 | 08:00 | 08:11 | 08:19 | 08:34 | 08:47 | 08:58 | 09:17 | 09:30 | 09:41 | 09:55 | 10:13 | 10:25 |
| 613 | 08:10 | 08:21 | 08:29 | 08:43 | 08:56 | — | 09:25 | — | — | 09:50 | 10:07 | 10:20 |
| 113 | 08:20 | 08:31 | 08:39 | — | — | — | 09:20 | — | — | — | — | 10:05 |
| 615 | 08:35 | 08:46 | 08:55 | 09:10 | 09:22 | — | 09:48 | — | — | 10:14 | 10:33 | 10:45 |
| 1209 | 08:40 | 08:51 | 08:59 | — | — | — | 09:40 | — | — | — | 10:18 | 10:30 |
| 813 | 09:00 | 09:11 | 09:19 | 09:34 | 09:47 | 09:58 | 10:17 | 10:30 | 10:41 | 10:55 | 11:13 | 11:25 |
| 619 | 09:10 | 09:21 | 09:29 | 09:43 | 09:56 | — | 10:25 | — | — | 10:50 | 11:07 | 11:20 |
| 117 | 09:20 | 09:31 | 09:39 | — | — | — | 10:20 | — | — | — | — | 11:05 |
| 1513 | 09:25 | 09:36 | 09:46 | 10:01 | 10:12 | 10:25 | 10:42 | — | — | — | — | — |
| 621 | 09:35 | 09:46 | 09:55 | 10:10 | 10:22 | — | 10:48 | — | — | 11:14 | 11:33 | 11:45 |
| 1213 | 09:40 | 09:51 | 09:59 | — | — | — | 10:40 | — | — | — | 11:18 | 11:30 |
| 1309 | 09:50 | 10:01 | 10:10 | — | — | — | 10:54 | 11:06 | 11:17 | 11:30 | 11:48 | 12:00 |
| 817 | 10:00 | 10:11 | 10:19 | 10:34 | 10:47 | 10:58 | 11:17 | 11:30 | 11:41 | 11:55 | 12:13 | 12:25 |
| 625 | 10:10 | 10:21 | 10:29 | 10:43 | 10:56 | — | 11:25 | — | — | 11:50 | 12:07 | 12:20 |
| 121 | 10:20 | 10:31 | 10:39 | — | — | — | 11:20 | — | — | — | — | 12:05 |
| 627 | 10:35 | 10:46 | 10:55 | 11:10 | 11:22 | — | 11:48 | — | — | 12:14 | 12:33 | 12:45 |
| 1217 | 10:40 | 10:51 | 10:59 | — | — | — | 11:40 | — | — | — | 12:18 | 12:30 |
| 821 | 11:00 | 11:11 | 11:19 | 11:34 | 11:47 | 11:58 | 12:17 | 12:30 | 12:41 | 12:55 | 13:13 | 13:25 |
| 1631 | 11:10 | 11:21 | 11:29 | 11:43 | 11:56 | — | 12:25 | — | — | 12:50 | 13:07 | 13:20 |
| 125 | 11:20 | 11:31 | 11:39 | — | — | — | 12:20 | — | — | — | — | 13:05 |
| 633 | 11:35 | 11:46 | 11:55 | 12:10 | 12:22 | — | 12:48 | — | — | 13:14 | 13:33 | 13:45 |
| 825 | 12:00 | 12:11 | 12:19 | 12:34 | 12:47 | 12:58 | 13:17 | 13:30 | 13:41 | 13:55 | 14:13 | 14:25 |
| 1637 | 12:10 | 12:21 | 12:29 | 12:43 | 12:56 | — | 13:25 | — | — | 13:50 | 14:07 | 14:20 |
| 129 | 12:20 | 12:31 | 12:39 | — | — | — | 13:20 | — | — | — | — | 14:05 |
| 639 | 12:35 | 12:46 | 12:55 | 13:10 | 13:22 | — | 13:48 | — | — | 14:14 | 14:33 | 14:45 |
| 829 | 13:00 | 13:11 | 13:19 | 13:34 | 13:47 | 13:58 | 14:17 | 14:30 | 14:41 | 14:55 | 15:13 | 15:25 |
| 1643 | 13:10 | 13:21 | 13:29 | 13:43 | 13:56 | — | 14:25 | — | — | 14:50 | 15:07 | 15:20 |
| 133 | 13:20 | 13:31 | 13:39 | — | — | — | 14:20 | — | — | — | — | 15:05 |
| 645 | 13:35 | 13:46 | 13:55 | 14:10 | 14:22 | — | 14:48 | — | — | 15:14 | 15:33 | 15:45 |
| 833 | 14:00 | 14:11 | 14:19 | 14:34 | 14:47 | 14:58 | 15:17 | 15:30 | 15:41 | 15:55 | 16:13 | 16:25 |
| 1649 | 14:10 | 14:21 | 14:29 | 14:43 | 14:56 | — | 15:25 | — | — | 15:50 | 16:07 | 16:20 |
| 137 | 14:20 | 14:31 | 14:39 | — | — | — | 15:20 | — | — | — | — | 16:05 |
| 651 | 14:35 | 14:46 | 14:55 | 15:10 | 15:22 | — | 15:48 | — | — | 16:14 | 16:33 | 16:45 |
| 837 | 15:00 | 15:11 | 15:19 | 15:34 | 15:47 | 15:58 | 16:17 | 16:30 | 16:41 | 16:55 | 17:13 | 17:25 |
| 1655 | 15:10 | 15:21 | 15:29 | 15:43 | 15:56 | — | 16:25 | — | — | 16:50 | 17:07 | 17:20 |
| 141 | 15:20 | 15:31 | 15:39 | — | — | — | 16:20 | — | — | — | — | 17:05 |
| 657 | 15:35 | 15:46 | 15:55 | 16:10 | 16:22 | — | 16:48 | — | — | 17:14 | 17:33 | 17:45 |
| 1237 | 15:40 | 15:51 | 15:59 | — | — | — | 16:40 | — | — | — | 17:18 | 17:30 |
| 841 | 16:00 | 16:11 | 16:19 | 16:34 | 16:47 | 16:58 | 17:17 | 17:30 | 17:41 | 17:55 | 18:13 | 18:25 |
| 661 | 16:10 | 16:21 | 16:29 | 16:43 | 16:56 | — | 17:25 | — | — | 17:50 | 18:07 | 18:20 |
| 145 | 16:20 | 16:31 | 16:39 | — | — | — | 17:20 | — | — | — | — | 18:05 |
| 1541 | 16:25 | 16:36 | 16:46 | 17:01 | 17:12 | 17:25 | 17:42 | — | — | — | — | — |
| 663 | 16:35 | 16:46 | 16:55 | 17:10 | 17:22 | — | 17:48 | — | — | 18:14 | 18:33 | 18:45 |
| 1241 | 16:40 | 16:51 | 16:59 | — | — | — | 17:40 | — | — | — | 18:18 | 18:30 |
| 845 | 17:00 | 17:11 | 17:19 | 17:34 | 17:47 | 17:58 | 18:17 | 18:30 | 18:41 | 18:55 | 19:13 | 19:25 |
| 667 | 17:10 | 17:21 | 17:29 | 17:43 | 17:56 | — | 18:25 | — | — | 18:50 | 19:07 | 19:20 |
| 149 | 17:20 | 17:31 | 17:39 | — | — | — | 18:20 | — | — | — | — | 19:05 |
| 1545 | 17:25 | 17:36 | 17:46 | 18:01 | 18:12 | 18:25 | 18:42 | — | — | — | — | — |
| 669 | 17:35 | 17:46 | 17:55 | 18:10 | 18:22 | — | 18:48 | — | — | 19:14 | 19:33 | 19:45 |
| 1245 | 17:40 | 17:51 | 17:59 | — | — | — | 18:40 | — | — | — | 19:18 | 19:30 |
| 849 | 18:00 | 18:11 | 18:19 | 18:34 | 18:47 | 18:58 | 19:17 | 19:30 | 19:41 | 19:55 | 20:13 | 20:25 |
| 673 | 18:10 | 18:21 | 18:29 | 18:43 | 18:56 | — | 19:25 | — | — | 19:50 | 20:07 | 20:20 |
| 153 | 18:20 | 18:31 | 18:39 | — | — | — | 19:20 | — | — | — | — | 20:05 |
| 1549 | 18:25 | 18:36 | 18:46 | 19:01 | 19:12 | 19:25 | 19:42 | — | — | — | — | — |
| 675 | 18:35 | 18:46 | 18:55 | 19:10 | 19:22 | — | 19:48 | — | — | 20:14 | 20:33 | 20:45 |
| 249 | 18:40 | 18:51 | 18:59 | — | — | — | 19:40 | — | — | — | 20:18 | 20:30 |
| 1327 | 18:50 | 19:01 | 19:10 | — | — | — | 19:54 | 20:06 | 20:17 | 20:30 | 20:48 | 21:00 |
| 853 | 19:00 | 19:11 | 19:19 | 19:34 | 19:47 | 19:58 | 20:17 | 20:30 | 20:41 | 20:55 | 21:13 | 21:25 |
| 1679 | 19:10 | 19:21 | 19:29 | 19:43 | 19:56 | — | 20:25 | — | — | 20:50 | 21:07 | 21:20 |
| 157 | 19:20 | 19:31 | 19:39 | — | — | — | 20:20 | — | — | — | — | 21:05 |
| 1553 | 19:25 | 19:36 | 19:46 | 20:01 | 20:12 | 20:25 | 20:42 | — | — | — | — | — |
| 681 | 19:35 | 19:46 | 19:55 | 20:10 | 20:22 | — | 20:48 | — | — | 21:14 | 21:33 | 21:45 |
| 1253 | 19:40 | 19:51 | 19:59 | — | — | — | 20:40 | — | — | — | 21:18 | 21:30 |
| 857 | 20:00 | 20:11 | 20:19 | 20:34 | 20:47 | 20:58 | 21:17 | 21:30 | 21:41 | 21:55 | 22:13 | 22:25 |
| 1685 | 20:10 | 20:21 | 20:29 | 20:43 | 20:56 | — | 21:25 | — | — | 21:50 | 22:07 | 22:20 |
| 161 | 20:20 | 20:31 | 20:39 | — | — | — | 21:20 | — | — | — | — | 22:05 |
| 1557 | 20:25 | 20:36 | 20:46 | 21:01 | 21:12 | 21:25 | 21:42 | — | — | — | — | — |
| 687 | 20:35 | 20:46 | 20:55 | 21:10 | 21:22 | — | 21:48 | — | — | 22:14 | 22:33 | 22:45 |
| 1257 | 20:40 | 20:51 | 20:59 | — | — | — | 21:40 | — | — | — | 22:18 | 22:30 |
| 861 | 21:00 | 21:11 | 21:19 | 21:34 | 21:47 | 21:58 | 22:17 | 22:30 | 22:41 | 22:55 | 23:13 | 23:25 |
| 165 | 21:20 | 21:31 | 21:39 | — | — | — | 22:20 | — | — | — | — | 23:05 |
| 693 | 21:30 | 21:41 | 21:50 | 22:05 | 22:17 | — | 22:43 | — | — | 23:09 | 23:28 | 23:40 |
| 333 | 21:45 | 21:56 | — | 22:15 | — | — | 22:49 | 23:01 | 23:12 | 23:24 | 23:42 | 23:55 |
| 1563 | 21:55 | 22:05 | 22:14 | 22:27 | 22:38 | 22:52 | 23:10 | — | — | — | — | — |
| 295 | 22:05 | 22:16 | — | 22:35 | — | — | 23:07 | — | — | 23:30 | 23:48 | 23:59 |
| 565 | 22:15 | 22:26 | 22:35 | 22:48 | 23:00 | 23:12 | 23:29 | — | — | — | — | — |
| 567 | 22:50 | 23:00 | 23:08 | 23:21 | 23:32 | 23:43 | 23:59 | — | — | — | — | — |

Timetable - Northbound

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Train No. | Zuoying | Tainan | Chiayi | Yunlin | Changhua | Taichung | Miaoli | Hsinchu | Taoyuan | Banqiao | Taipei | Nangang |
| 502 | — | — | — | — | — | 06:25 | 06:44 | 06:57 | 07:09 | 07:22 | 07:32 | 07:40 |
| 1504 | — | — | — | — | — | 06:45 | 07:05 | 07:20 | 07:32 | 07:45 | 07:56 | 08:05 |
| 1508 | — | — | — | — | — | 07:05 | 07:25 | 07:38 | 07:51 | 08:05 | 08:16 | 08:25 |
| 1510 | — | — | — | — | — | 07:17 | 07:37 | 07:50 | 08:03 | 08:16 | 08:27 | 08:35 |
| 802 | 06:15 | 06:29 | 06:48 | 07:00 | 07:13 | 07:25 | 07:45 | 07:58 | 08:10 | 08:22 | 08:32 | 08:40 |
| 1202 | 06:25 | 06:38 | 06:57 | — | — | 07:21 | — | — | — | — | 08:07 | 08:15 |
| 1602 | 06:40 | 06:53 | 07:12 | — | — | 07:40 | — | 08:05 | 08:18 | 08:31 | 08:42 | 08:50 |
| 1302 | 06:45 | 06:59 | 07:19 | 07:32 | 07:42 | 07:53 | — | — | — | 08:36 | 08:47 | 08:55 |
| 204 | 06:55 | 07:07 | — | — | — | 07:48 | — | — | — | 08:27 | 08:37 | 08:45 |
| 606 | 07:00 | 07:13 | 07:32 | — | — | 08:00 | — | 08:25 | 08:38 | 08:51 | 09:02 | 09:10 |
| 1514 | — | — | — | — | — | 08:04 | 08:24 | 08:39 | 08:51 | 09:05 | 09:16 | 09:25 |
| 206 | 07:15 | 07:28 | — | — | — | 08:08 | — | — | — | 08:47 | 08:57 | 09:05 |
| 806 | 07:25 | 07:41 | 08:00 | 08:12 | 08:24 | 08:36 | 08:56 | 09:08 | 09:20 | 09:32 | 09:42 | 09:50 |
| 610 | 07:35 | 07:48 | 08:08 | — | — | 08:32 | — | 08:57 | 09:11 | 09:25 | 09:36 | 09:45 |
| 108 | 07:55 | — | — | — | — | 08:39 | — | — | — | 09:21 | 09:31 | 09:40 |
| 612 | 08:00 | 08:13 | 08:32 | — | — | 09:00 | — | 09:25 | 09:38 | 09:51 | 10:02 | 10:10 |
| 1210 | 08:15 | 08:28 | — | — | — | 09:08 | — | — | — | 09:47 | 09:57 | 10:05 |
| 810 | 08:25 | 08:41 | 09:00 | 09:12 | 09:24 | 09:36 | 09:56 | 10:08 | 10:20 | 10:32 | 10:42 | 10:50 |
| 616 | 08:35 | 08:48 | 09:08 | — | — | 09:32 | — | 09:57 | 10:11 | 10:25 | 10:36 | 10:45 |
| 112 | 08:55 | — | — | — | — | 09:39 | — | — | — | 10:21 | 10:31 | 10:40 |
| 618 | 09:00 | 09:13 | 09:32 | — | — | 10:00 | — | 10:25 | 10:38 | 10:51 | 11:02 | 11:10 |
| 814 | 09:25 | 09:41 | 10:00 | 10:12 | 10:24 | 10:36 | 10:56 | 11:08 | 11:20 | 11:32 | 11:42 | 11:50 |
| 1622 | 09:35 | 09:48 | 10:08 | — | — | 10:32 | — | 10:57 | 11:11 | 11:25 | 11:36 | 11:45 |
| 116 | 09:55 | — | — | — | — | 10:39 | — | — | — | 11:21 | 11:31 | 11:40 |
| 624 | 10:00 | 10:13 | 10:32 | — | — | 11:00 | — | 11:25 | 11:38 | 11:51 | 12:02 | 12:10 |
| 1218 | 10:15 | 10:28 | — | — | — | 11:08 | — | — | — | 11:47 | 11:57 | 12:05 |
| 818 | 10:25 | 10:41 | 11:00 | 11:12 | 11:24 | 11:36 | 11:56 | 12:08 | 12:20 | 12:32 | 12:42 | 12:50 |
| 628 | 10:35 | 10:48 | 11:08 | — | — | 11:32 | — | 11:57 | 12:11 | 12:25 | 12:36 | 12:45 |
| 120 | 10:55 | — | — | — | — | 11:39 | — | — | — | 12:21 | 12:31 | 12:40 |
| 630 | 11:00 | 11:13 | 11:32 | — | — | 12:00 | — | 12:25 | 12:38 | 12:51 | 13:02 | 13:10 |
| 822 | 11:25 | 11:41 | 12:00 | 12:12 | 12:24 | 12:36 | 12:56 | 13:08 | 13:20 | 13:32 | 13:42 | 13:50 |
| 124 | 11:55 | — | — | — | — | 12:39 | — | — | — | 13:21 | 13:31 | 13:40 |
| 636 | 12:00 | 12:13 | 12:32 | — | — | 13:00 | — | 13:25 | 13:38 | 13:51 | 14:02 | 14:10 |
| 826 | 12:25 | 12:41 | 13:00 | 13:12 | 13:24 | 13:36 | 13:56 | 14:08 | 14:20 | 14:32 | 14:42 | 14:50 |
| 1640 | 12:35 | 12:48 | 13:08 | — | — | 13:32 | — | 13:57 | 14:11 | 14:25 | 14:36 | 14:45 |
| 128 | 12:55 | — | — | — | — | 13:39 | — | — | — | 14:21 | 14:31 | 14:40 |
| 642 | 13:00 | 13:13 | 13:32 | — | — | 14:00 | — | 14:25 | 14:38 | 14:51 | 15:02 | 15:10 |
| 1538 |  |  |  |  |  | 14:04 | 14:24 | 14:39 | 14:51 | 15:05 | 15:16 | 15:25 |
| 830 | 13:25 | 13:41 | 14:00 | 14:12 | 14:24 | 14:36 | 14:56 | 15:08 | 15:20 | 15:32 | 15:42 | 15:50 |
| 1646 | 13:35 | 13:48 | 14:08 | — | — | 14:32 | — | 14:57 | 15:11 | 15:25 | 15:36 | 15:45 |
| 132 | 13:55 | — | — | — | — | 14:39 | — | — | — | 15:21 | 15:31 | 15:40 |
| 648 | 14:00 | 14:13 | 14:32 | — | — | 15:00 | — | 15:25 | 15:38 | 15:51 | 16:02 | 16:10 |
| 1542 |  |  |  |  |  | 15:04 | 15:24 | 15:39 | 15:51 | 16:05 | 16:16 | 16:25 |
| 1234 | 14:15 | 14:28 | — | — | — | 15:08 | — | — | — | 15:47 | 15:57 | 16:05 |
| 834 | 14:25 | 14:41 | 15:00 | 15:12 | 15:24 | 15:36 | 15:56 | 16:08 | 16:20 | 16:32 | 16:42 | 16:50 |
| 1652 | 14:35 | 14:48 | 15:08 | — | — | 15:32 | — | 15:57 | 16:11 | 16:25 | 16:36 | 16:45 |
| 136 | 14:55 | — | — | — | — | 15:39 | — | — | — | 16:21 | 16:31 | 16:40 |
| 654 | 15:00 | 15:13 | 15:32 | — | — | 16:00 | — | 16:25 | 16:38 | 16:51 | 17:02 | 17:10 |
| 1546 | — | — | — | — | — | 16:04 | 16:24 | 16:39 | 16:51 | 17:05 | 17:16 | 17:25 |
| 1238 | 15:15 | 15:28 | — | — | — | 16:08 | — | — | — | 16:47 | 16:57 | 17:05 |
| 838 | 15:25 | 15:41 | 16:00 | 16:12 | 16:24 | 16:36 | 16:56 | 17:08 | 17:20 | 17:32 | 17:42 | 17:50 |
| 1658 | 15:35 | 15:48 | 16:08 | — | — | 16:32 | — | 16:57 | 17:11 | 17:25 | 17:36 | 17:45 |
| 1320 | 15:45 | 15:58 | 16:19 | 16:31 | 16:41 | 16:53 | — | — | — | 17:36 | 17:47 | 17:55 |
| 140 | 15:55 | — | — | — | — | 16:39 | — | — | — | 17:21 | 17:31 | 17:40 |
| 660 | 16:00 | 16:13 | 16:32 | — | — | 17:00 | — | 17:25 | 17:38 | 17:51 | 18:02 | 18:10 |
| 1550 | — | — | — | — | — | 17:04 | 17:24 | 17:39 | 17:51 | 18:05 | 18:16 | 18:25 |
| 242 | 16:15 | 16:28 | — | — | — | 17:08 | — | — | — | 17:47 | 17:57 | 18:05 |
| 842 | 16:25 | 16:41 | 17:00 | 17:12 | 17:24 | 17:36 | 17:56 | 18:08 | 18:20 | 18:32 | 18:42 | 18:50 |
| 664 | 16:35 | 16:48 | 17:08 | — | — | 17:32 | — | 17:57 | 18:11 | 18:25 | 18:36 | 18:45 |
| 144 | 16:55 | — | — | — | — | 17:39 | — | — | — | 18:21 | 18:31 | 18:40 |
| 666 | 17:00 | 17:13 | 17:32 | — | — | 18:00 | — | 18:25 | 18:38 | 18:51 | 19:02 | 19:10 |
| 1554 | — | — | — | — | — | 18:04 | 18:24 | 18:39 | 18:51 | 19:05 | 19:16 | 19:25 |
| 1246 | 17:15 | 17:28 | — | — | — | 18:08 | — | — | — | 18:47 | 18:57 | 19:05 |
| 846 | 17:25 | 17:41 | 18:00 | 18:12 | 18:24 | 18:36 | 18:56 | 19:08 | 19:20 | 19:32 | 19:42 | 19:50 |
| 670 | 17:35 | 17:48 | 18:08 | — | — | 18:32 | — | 18:57 | 19:11 | 19:25 | 19:36 | 19:45 |
| 148 | 17:55 | — | — | — | — | 18:39 | — | — | — | 19:21 | 19:31 | 19:40 |
| 672 | 18:00 | 18:13 | 18:32 | — | — | 19:00 | — | 19:25 | 19:38 | 19:51 | 20:02 | 20:10 |
| 1558 | — | — | — | — | — | 19:04 | 19:24 | 19:39 | 19:51 | 20:05 | 20:16 | 20:25 |
| 1250 | 18:15 | 18:28 | — | — | — | 19:08 | — | — | — | 19:47 | 19:57 | 20:05 |
| 850 | 18:25 | 18:41 | 19:00 | 19:12 | 19:24 | 19:36 | 19:56 | 20:08 | 20:20 | 20:32 | 20:42 | 20:50 |
| 676 | 18:35 | 18:48 | 19:08 | — | — | 19:32 | — | 19:57 | 20:11 | 20:25 | 20:36 | 20:45 |
| 152 | 18:55 | — | — | — | — | 19:39 | — | — | — | 20:21 | 20:31 | 20:40 |
| 678 | 19:00 | 19:13 | 19:32 | — | — | 20:00 | — | 20:25 | 20:38 | 20:51 | 21:02 | 21:10 |
| 1562 | — | — | — | — | — | 20:04 | 20:24 | 20:39 | 20:51 | 21:05 | 21:16 | 21:25 |
| 1254 | 19:15 | 19:28 | — | — | — | 20:08 | — | — | — | 20:47 | 20:57 | 21:05 |
| 854 | 19:25 | 19:41 | 20:00 | 20:12 | 20:24 | 20:36 | 20:56 | 21:08 | 21:20 | 21:32 | 21:42 | 21:50 |
| 1682 | 19:35 | 19:48 | 20:08 | — | — | 20:32 | — | 20:57 | 21:11 | 21:25 | 21:36 | 21:45 |
| 156 | 19:55 | — | — | — | — | 20:39 | — | — | — | 21:21 | 21:31 | 21:40 |
| 684 | 20:00 | 20:13 | 20:32 | — | — | 21:00 | — | 21:25 | 21:38 | 21:51 | 22:02 | 22:10 |
| 1566 | — | — | — | — | — | 21:04 | 21:24 | 21:39 | 21:51 | 22:05 | 22:16 | 22:25 |
| 1258 | 20:15 | 20:28 | — | — | — | 21:08 | — | — | — | 21:47 | 21:57 | 22:05 |
| 858 | 20:25 | 20:41 | 21:00 | 21:12 | 21:24 | 21:36 | 21:56 | 22:08 | 22:20 | 22:32 | 22:42 | 22:50 |
| 1688 | 20:35 | 20:48 | 21:08 | — | — | 21:32 | — | 21:57 | 22:11 | 22:25 | 22:36 | 22:45 |
| 1330 | 20:45 | 20:58 | 21:19 | 21:31 | 21:42 | 21:54 | — | — | — | 22:36 | 22:47 | 22:55 |
| 160 | 20:55 | — | — | — | — | 21:39 | — | — | — | 22:21 | 22:31 | 22:40 |
| 1570 | — | — | — | — | — | 21:51 | 22:10 | 22:23 | 22:36 | 22:49 | 23:01 | 23:10 |
| 690 | 21:05 | 21:18 | 21:37 | — | — | 22:05 | — | 22:30 | 22:43 | 22:56 | 23:07 | 23:15 |
| 862 | 21:30 | 21:44 | 22:03 | 22:16 | 22:28 | 22:40 | 23:00 | 23:12 | 23:25 | 23:37 | 23:47 | 23:55 |
| 1264 | 21:40 | 21:53 | — | — | — | 22:30 | — | — | — | 23:11 | 23:21 | 23:30 |
| 696 | 21:55 | 22:11 | 22:32 | — | — | 22:59 | — | 23:27 | 23:40 | 23:52 | 23:59 | 23:59 |
| 294 | 22:10 | 22:23 | — | — | — | 23:03 | — | — | — | 23:42 | 23:52 | — |
| 598 | 22:55 | 23:08 | 23:27 | 23:39 | 23:49 | 23:59 | — | — | — | — | — | — |