Test results

Normal operation test

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
1
STARTING THE BOOKENTRY FUNCTION
PLEASE ENTER THE BOOK ID:
0000002
PLEASE ENTER THE BOOK NAME:
MTH113                          Test book entry
PLEASE ENTER THE AUTHOR:
Unknown
PLEASE ENTER THE PRICE:
36.6
PLEASE ENTER THE YEAR:
2021
PLEASE ENTER THE PUBLISHER:
XJTLU
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------BOOK SYSTEM--------------

  1.BOOK ENTRY    2.BOOK MESSAGE    3.BOOK DELETE
  4.READER ENTRY  5.READER MESSAGE  6.BOOK BORROW
  7.BOOK RETURN   8.BORROW MESSAGE  9.BOOK COUNT
                                    0.QUIT

PLEASE ENTER OPERATION ID:
2                               Test book message
STARTING THE BOOKMESSAGE FUNCTION
bID        title        author      price    year    publisher
2345214    C++ porgaem              23.4     2020    XJTLU
0000001    DTS102       Unknown     8.8      2021    XJTLU
0000002    MTH113       Unknown     36.6     2021    XJTLU
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
3                               Test book delete
STARTING THE DELETEBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO DELETE:
2345214
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
4
STARTING THE READERENTRY FUNCTION
PLEASE ENTER THE STUDENT ID:
00000004
PLEASE ENTER THE NAME:
Daniel
PLEASE ENTER THE GENDER:           Test reader entry
 1 for Male, 2 for Female
1
PLEASE ENTER THE EMAIL:
Daniel@xjtlu.edu.cn
PLEASE ENTER THE COLLEGE:
XJTLU
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

  1.BOOK ENTRY    2.BOOK MESSAGE    3.BOOK DELETE
  4.READER ENTRY  5.READER MESSAGE  6.BOOK BORROW
  7.BOOK RETURN   8.BORROW MESSAGE  9.BOOK COUNT
                                    0.QUIT

PLEASE ENTER OPERATION ID:
5                               Test reader message
STARTING THE READERMESSAGE FUNCTION
sID        name        gender      email              college
2142366    Zhiqing Du  Female      Zhiqing.Du21@xjtlu.edu.cnXJTLU
0000001    Mike        Male        Mike@xjtlu.edu.cnXJTLU
0000002    Nancy       Female      Nancy@xjtlu.edu.cnXJTLU
3          Linda       Female      Linda@xjtlu.edu.cnXJTLU
00000004   Daniel      Male        Daniel@xjtlu.edu.cnXJTLU
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
6                               Test book borrow
STARTING THE BORROWBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO BORROW:
0000001
PLEASE ENTER THE STUDENT ID:
0000001
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
7                               Test book return
STARTING THE RETURNBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO RETURN:
0000001
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
8                               Test book message
STARTING THE BORROWMESSAGE FUNCTION
BOOK ID                         BORROW STATUS
1                                 is not borrowed
2                                 is not borrowed
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------------BOOK SYSTEM--------------------

   1.BOOK ENTRY      2.BOOK MESSAGE      3.BOOK DELETE
   4.READER ENTRY    5.READER MESSAGE    6.BOOK BORROW
   7.BOOK RETURN     8.BORROW MESSAGE    9.BOOK COUNT
                                         0.QUIT

PLEASE ENTER OPERATION ID:
9                               Test book count
STARTING THE COUNTBOOK FUNCTION
BOOKS IN LIBRARY       BORROWED BOOKS        TOTAl AMOUNT
2                      0                     2
OPERATION SUCCESSFULLY COMPLETED
```

```
--------------BOOK SYSTEM--------------

  1.BOOK ENTRY    2.BOOK MESSAGE    3.BOOK DELETE
  4.READER ENTRY  5.READER MESSAGE  6.BOOK BORROW
  7.BOOK RETURN   8.BORROW MESSAGE  9.BOOK COUNT
                                    0.QUIT

PLEASE ENTER OPERATION ID:
0                               Test book quit
SYSTEM CLOSED

E:\c++\Project5\x64\Debug\Project5.exe (进程 20704)已退出，代码为 0。
要在调试停止时自动关闭控制台，请启用"工具"->"选项"->"调试"->"调试停止时自动关闭控制台"。
按任意键关闭此窗口. . .
```

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
  1.BOOK ENTRY     2.BOOK MESSAGE    3.BOOK DELETE
  4.READER ENTRY   5.READER MESSAGE  6.BOOK BORROW
  7.BOOK RETURN    8.BORROW MESSAGE  9.BOOK COUNT
                                     0.QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
hello
ERROR INVALID INPUT
Please enter a valid operation ID:
1
STARTING THE BOOKENTRY FUNCTION
PLEASE ENTER THE BOOK ID:
ERROR INVALID INPUT
Please enter a numerical value:
```

If user don't choose a valid operation ID.

When user enter book entry

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
  1.BOOK ENTRY     2.BOOK MESSAGE    3.BOOK DELETE
  4.READER ENTRY   5.READER MESSAGE  6.BOOK BORROW
  7.BOOK RETURN    8.BORROW MESSAGE  9.BOOK COUNT
                                     0.QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
1
STARTING THE BOOKENTRY FUNCTION
PLEASE ENTER THE BOOK ID:
hello
ERROR INVALID INPUT
Please enter a numerical value:
2345214
ERROR BOOK ID ALREADY EXISTS
Please enter a non-existent ID:
```

If user doesn't input number, the system will report error.

If user input an existent ID, the system will report error.

```
PLEASE ENTER THE BOOK NAME:
DTS 102
PLEASE ENTER THE AUTHOR:
Unknown
PLEASE ENTER THE PRICE:
hello
ERROR INVALID INPUT
Please enter a numerical value:
```

If user doesn't input a number when enters the price, the system will report error.

When user enter book delete

```
|-------------------BOOK SYSTEM-------------------
|-------------------------------------------------
|    1.BOOK ENTRY     2.BOOK MESSAGE    3.BOOK DELETE
|    4.READER ENTRY   5.READER MESSAGE  6.BOOK BORROW
|    7.BOOK RETURN    8.BORROW MESSAGE  9.BOOK COUNT
|                                       0.QUIT
|-------------------------------------------------
PLEASE ENTER OPERATION ID:
3
STARTING THE DELETEBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO DELETE:
hello
ERROR INVALID INPUT
Please enter a numerical value:
1234567
ERROR BOOK ID DOES NOT EXIST
Please enter an existent ID:
```

If user doesn't input number, the system will report error.

If user input a non-existent ID, the system will report error.

When user enter reader entry

```
|-------------------BOOK SYSTEM-------------------
|-------------------------------------------------
|    1.BOOK ENTRY     2.BOOK MESSAGE    3.BOOK DELETE
|    4.READER ENTRY   5.READER MESSAGE  6.BOOK BORROW
|    7.BOOK RETURN    8.BORROW MESSAGE  9.BOOK COUNT
|                                       0.QUIT
|-------------------------------------------------
PLEASE ENTER OPERATION ID:
4
STARTING THE READERENTRY FUNCTION
PLEASE ENTER THE STUDENT ID:
hello
ERROR INVALID INPUT
Please enter a numerical value:
|-------------------BOOK SYSTEM-------------------
|-------------------------------------------------
|    1.BOOK ENTRY     2.BOOK MESSAGE    3.BOOK DELETE
|    4.READER ENTRY   5.READER MESSAGE  6.BOOK BORROW
|    7.BOOK RETURN    8.BORROW MESSAGE  9.BOOK COUNT
|                                       0.QUIT
|-------------------------------------------------
PLEASE ENTER OPERATION ID:
4
STARTING THE READERENTRY FUNCTION
PLEASE ENTER THE STUDENT ID:
0000001
ERROR STUDENT ID ALREADY EXISTS
Please enter a non-existent ID:
```

If user doesn't input a number when enters student ID, the system will report error.

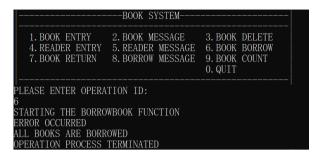*If user input an existent student ID, the system will display student ID already exists.*

```
|-------------------BOOK SYSTEM-------------------
|-------------------------------------------------
|    1.BOOK ENTRY     2.BOOK MESSAGE    3.BOOK DELETE
|    4.READER ENTRY   5.READER MESSAGE  6.BOOK BORROW
|    7.BOOK RETURN    8.BORROW MESSAGE  9.BOOK COUNT
|                                       0.QUIT
|-------------------------------------------------
PLEASE ENTER OPERATION ID:
4
STARTING THE READERENTRY FUNCTION
PLEASE ENTER THE STUDENT ID:
hello
ERROR INVALID INPUT
Please enter a numerical value:
0000002
PLEASE ENTER THE NAME:
Nancy
PLEASE ENTER THE GENDER:
 1 for Male, 2 for Female
Female
ERROR INVALID INPUT
Please enter 1 for Male or 2 for Female:
```

If user doesn't input a 1or 2 when enter the gender , the system will report error.

```
PLEASE ENTER THE EMAIL:
123456
ERROR INVALID INPUT
Please enter a valid email address:
```

If user doesn't input a email when enters the email, the system will report error.

When user enter borrow book

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
   1.BOOK ENTRY    2.BOOK MESSAGE    3.BOOK DELETE
   4.READER ENTRY  5.READER MESSAGE  6.BOOK BORROW
   7.BOOK RETURN   8.BORROW MESSAGE  9.BOOK COUNT
                                     0.QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
6
STARTING THE BORROWBOOK FUNCTION
ERROR OCCURRED
ALL BOOKS ARE BORROWED
OPERATION PROCESS TERMINATED
```

If all books have been borrowed, the system will display all books are borrowed.

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
   1.BOOK ENTRY    2.BOOK MESSAGE    3.BOOK DELETE
   4.READER ENTRY  5.READER MESSAGE  6.BOOK BORROW
   7.BOOK RETURN   8.BORROW MESSAGE  9.BOOK COUNT
                                     0.QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
6
STARTING THE BORROWBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO BORROW:
hello
ERROR INVALID INPUT
Please enter a numerical value:
0000002
ERROR BOOK ID DOES NOT EXIST
Please enter an existent ID:
```

If user doesn't input number, the system will report error.

If user input a existent ID, the system will report error.

```
OPERATION SUCCESSFULLY COMPLETED
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
   1.BOOK ENTRY    2.BOOK MESSAGE    3.BOOK DELETE
   4.READER ENTRY  5.READER MESSAGE  6.BOOK BORROW
   7.BOOK RETURN   8.BORROW MESSAGE  9.BOOK COUNT
                                     0.QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
6
STARTING THE BORROWBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO BORROW:
hello
ERROR INVALID INPUT
Please enter a numerical value:
0000002
ERROR BOOK ID DOES NOT EXIST
Please enter an existent ID:
0000001
ERROR BOOK IS ALREADY BORROWED
Please enter another book ID:
```

If the book user wants to borrow have been borrowed, the system will display the book is already borrowed.

```
Please enter another book ID:
2345214
PLEASE ENTER THE STUDENT ID:
hello
ERROR INVALID INPUT
Please enter a numerical value:
```

After user input an existent ID, user needs to enter the student ID. If user doesn't input a number or inputs a non-existent student ID, the system will report error.

```
PLEASE ENTER THE STUDENT ID:
0000003
ERROR STUDENT ID DOES NOT EXIST
Please enter 1 to input an existent ID or 2 to register new reader:
```

```
ERROR STUDENT ID DOES NOT EXIST
Please enter 1 to input an existent ID or 2 to register new reader:
1
0000001
OPERATION SUCCESSFULLY COMPLETED
```

```
ERROR STUDENT ID DOES NOT EXIST
Please enter 1 to input an existent ID or 2 to register new reader:
2
STARTING THE REGISTRATION FUNCTION FOR STUDENT ID: 3
PLEASE ENTER THE NAME:
Linda
PLEASE ENTER THE GENDER:
 1 for Male, 2 for Female
2
PLEASE ENTER THE EMAIL:
Linda@xjtlu.edu.cn
PLEASE ENTER THE COLLEGE:
XJTLU
```

And then, user can choose 1 to input an existent student ID or choose 2 to register a new student ID.

When user enter return book

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
  1. BOOK ENTRY    2. BOOK MESSAGE    3. BOOK DELETE
  4. READER ENTRY  5. READER MESSAGE  6. BOOK BORROW
  7. BOOK RETURN   8. BORROW MESSAGE  9. BOOK COUNT
                                      0. QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
7
STARTING THE RETURNBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO RETURN:
hello
ERROR INVALID INPUT
Please enter a numerical value:
```

If user doesn't input number, the system will report error.

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
  1. BOOK ENTRY    2. BOOK MESSAGE    3. BOOK DELETE
  4. READER ENTRY  5. READER MESSAGE  6. BOOK BORROW
  7. BOOK RETURN   8. BORROW MESSAGE  9. BOOK COUNT
                                      0. QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
7
STARTING THE RETURNBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO RETURN:
hello
ERROR INVALID INPUT
Please enter a numerical value:
0000002
ERROR BOOK ID DOES NOT EXIST
Please enter an existent ID:
```

The book user wants to return doesn't exist, the system will display the book ID does not exist.

```
--------------------BOOK SYSTEM--------------------
---------------------------------------------------
  1. BOOK ENTRY    2. BOOK MESSAGE    3. BOOK DELETE
  4. READER ENTRY  5. READER MESSAGE  6. BOOK BORROW
  7. BOOK RETURN   8. BORROW MESSAGE  9. BOOK COUNT
                                      0. QUIT
---------------------------------------------------
PLEASE ENTER OPERATION ID:
7
STARTING THE RETURNBOOK FUNCTION
PLEASE ENTER THE BOOK ID THAT YOU WISH TO RETURN:
0000001
ERROR BOOK IS NOT BORROWED
Please enter another book ID:
```

The book user wants to return is not borrowed, the system will display the book is not borrowed.