Homework 4

- ***PROBLEM***: Your friends keep borrowing your books but are not returning them. It is increasingly becoming hard to keep track of who borrowed which book. So you decided to create a simple program to help you out.

- **ONE**: Use STRUCT to define a variable to store book information
  - Should include : Title, Published Year, Author, Edition, Name of person who borrowed, and # of days it was lent.
  - The text file containing book information will be as follows. Each information will be followed by a '; ', which is semicolon and a space.
    - BookTitle; Published Year; Author; Person Who Borrowed It; # of Days Borrowed
    - **TIP: You can use substr() to parse string inputline. Other methods are fine also.**
  - Default for the person who borrowed the book is None and days is 0, meaning you have it on your bookshelf.
- **TWO**: Create an array of this data type with a size you seem fit to store information of books

dynamic allocation

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- **THREE**: Declare and implement these FUNCTIONS
  - Load - reads in file, parses string, and stores into struct array. Opens file with fixed text file name.
    - Place text file in the same folder as your .cpp file.
  - Save – saves with a name given by the user with latest information
  - Print – prints current list of books to screen Show complete list.
  - Insert – Include a new book to the catalog. Show complete list.
  - Lend – lends a book to someone. Show list of lent books if successful.
  - Passday – an imaginary day passes. The days are decremented by one.
  - Returned – a book is returned. That book's 'days' and 'borrower' is reset and show that book's information in the reset state.
  - Exit – end program

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- FUNCTIONS cont.
  - Functions will be called like these examples:

    Lend The Hobbit; J.R.R. Tolkien; 10

    returned The Hobbit

    - **A single space character** separates function name and any required information for that function. A semicolon separates the information.
    - Use the function name to call appropriate function and use the rest of the line as argument to that function.
    - Also need to parse the argument properly inside the functions.
    - **Devise a way** so that when calling the function, using capital letters or lowercase letters or a mix **does not matter**.
  - After functions such as Lend, Returned, Insert, and Passday, **you must** print out that book's updated information.
    - For lend and returned, **only that one book** is enough.
    - For Insert, **print all** books.
    - For Passday, print the **books that are lent.** Meaning books where borrower is not "none".

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- If the book used with lend command does not exist, inform user that such book does not exist and move on.
- If lend command is used with days <= 0, tell user to use a number bigger than 0.

In this case, both apply.
Both messages are shown ->

```
============== Available Commands & Format ===============

1. INSERT BookTitle; Author; PubYear; Edition
2. LEND BookTitle; Person Borrowing; How many days
3. SAVE new_filename.txt
4. RETURNED BookTitle
5. PASSDAY
6. PRINT
7. EXIT

==========================================================
>>lend c++; John; 0
  Lend for more days
  NO SUCH BOOK!
```

- If day count is 0 on any book that is borrowed by someone, user should be reminded every time
  - Give user a stronger reminder if day count is < 0
  - Picture in later slides.

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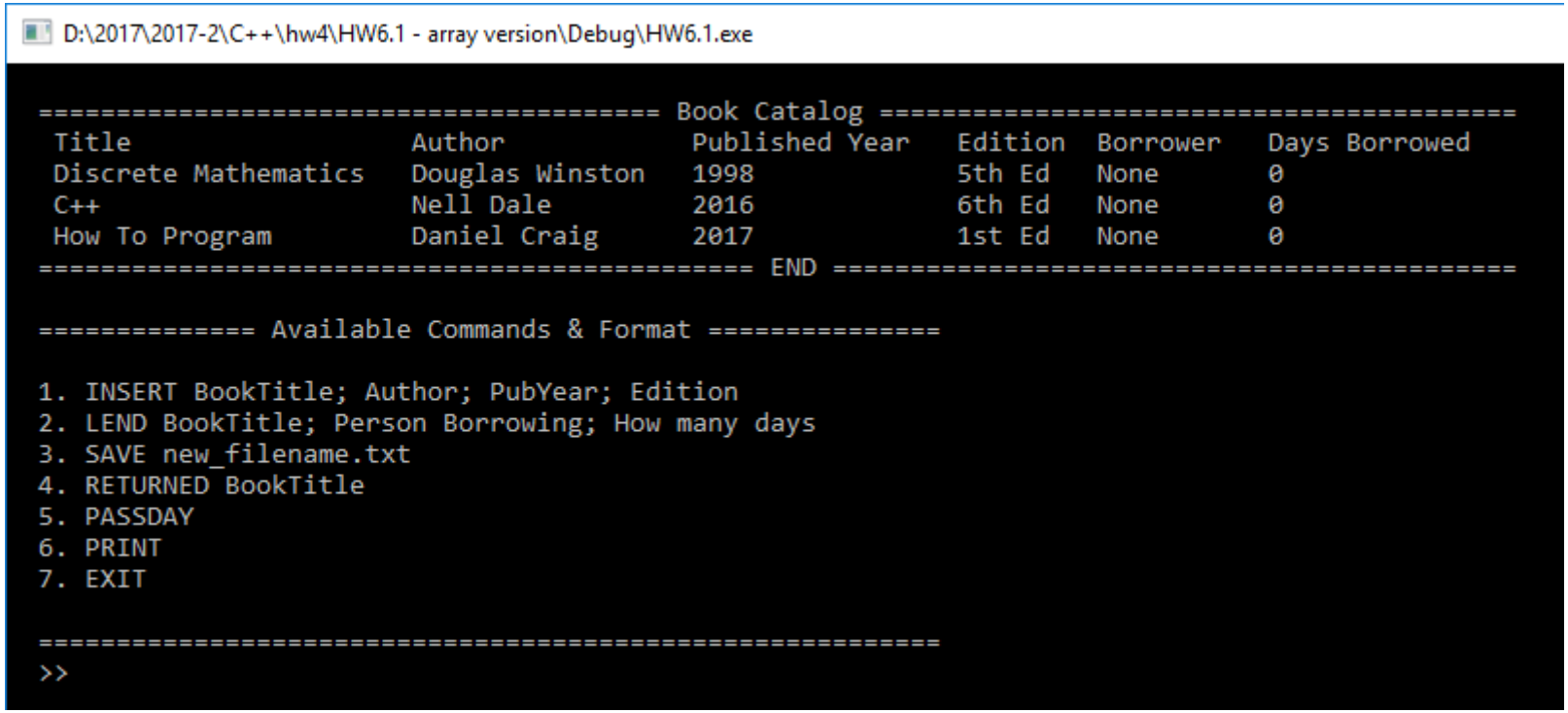
Start Screen:



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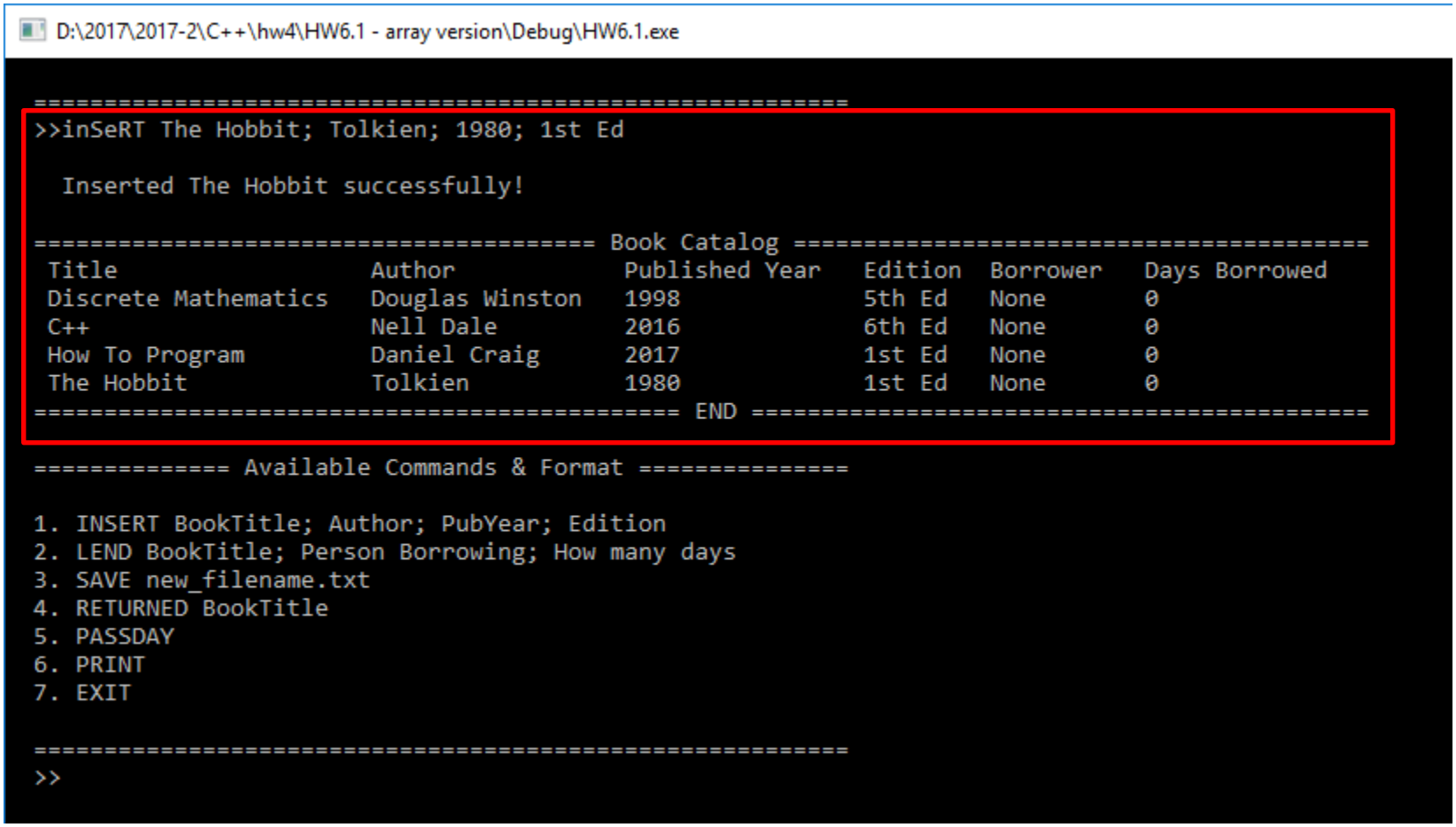
Insert :



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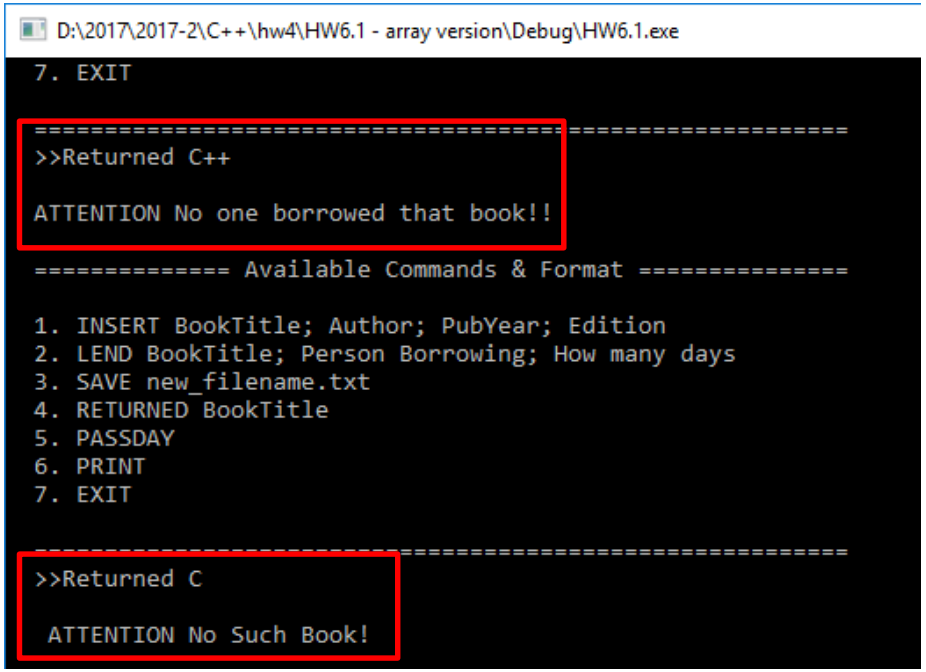
Returned Correctly:

```
>>Returned C++

========================================= Book Returned ==========================================
 Title                  Author            Published Year   Edition  Borrower   Days Borrowed
 C++                    Nell Dale         2016             6th Ed   None       0
=================================================== END ===================================================
```

Returned incorrectly:



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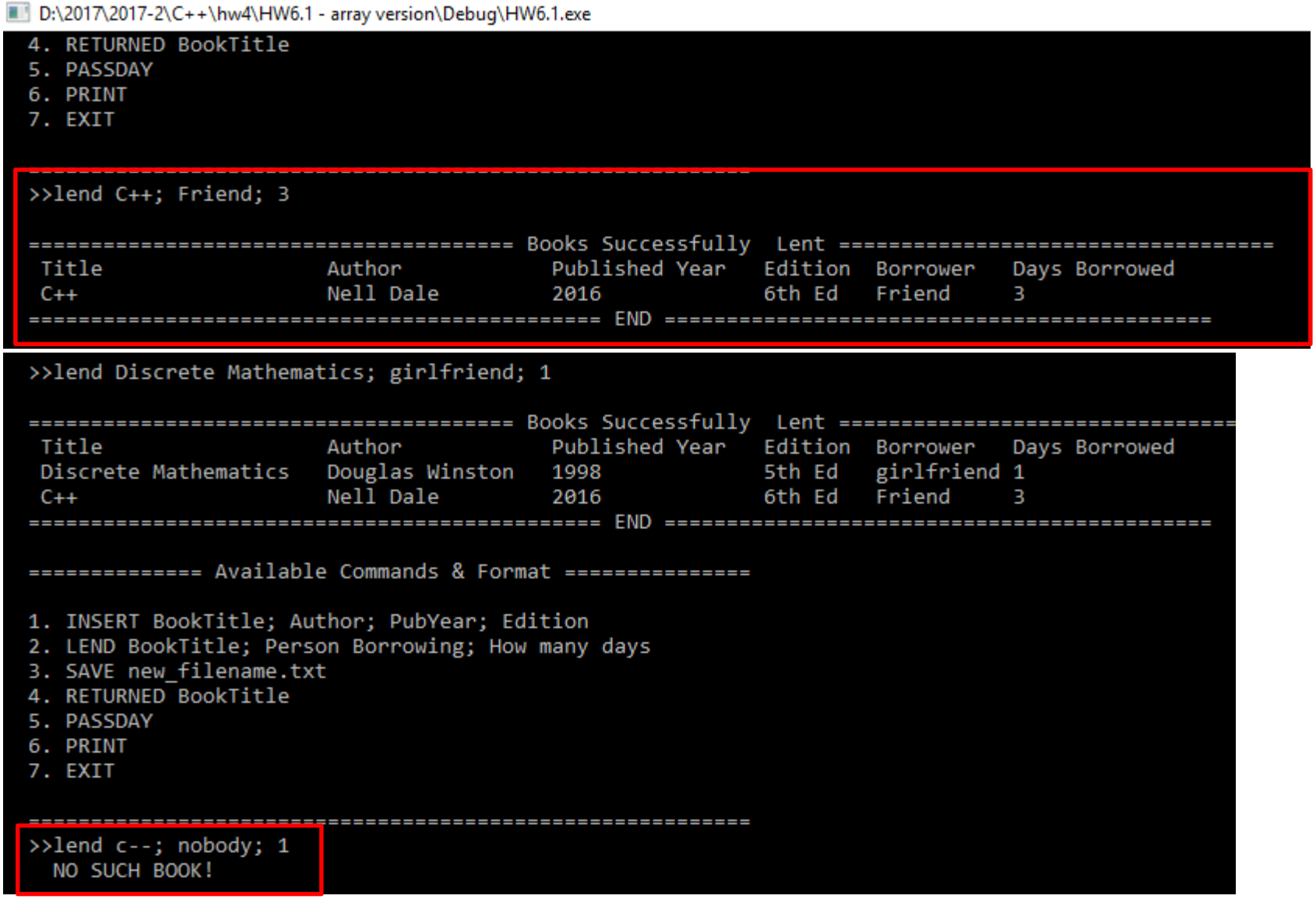
Lend Examples:



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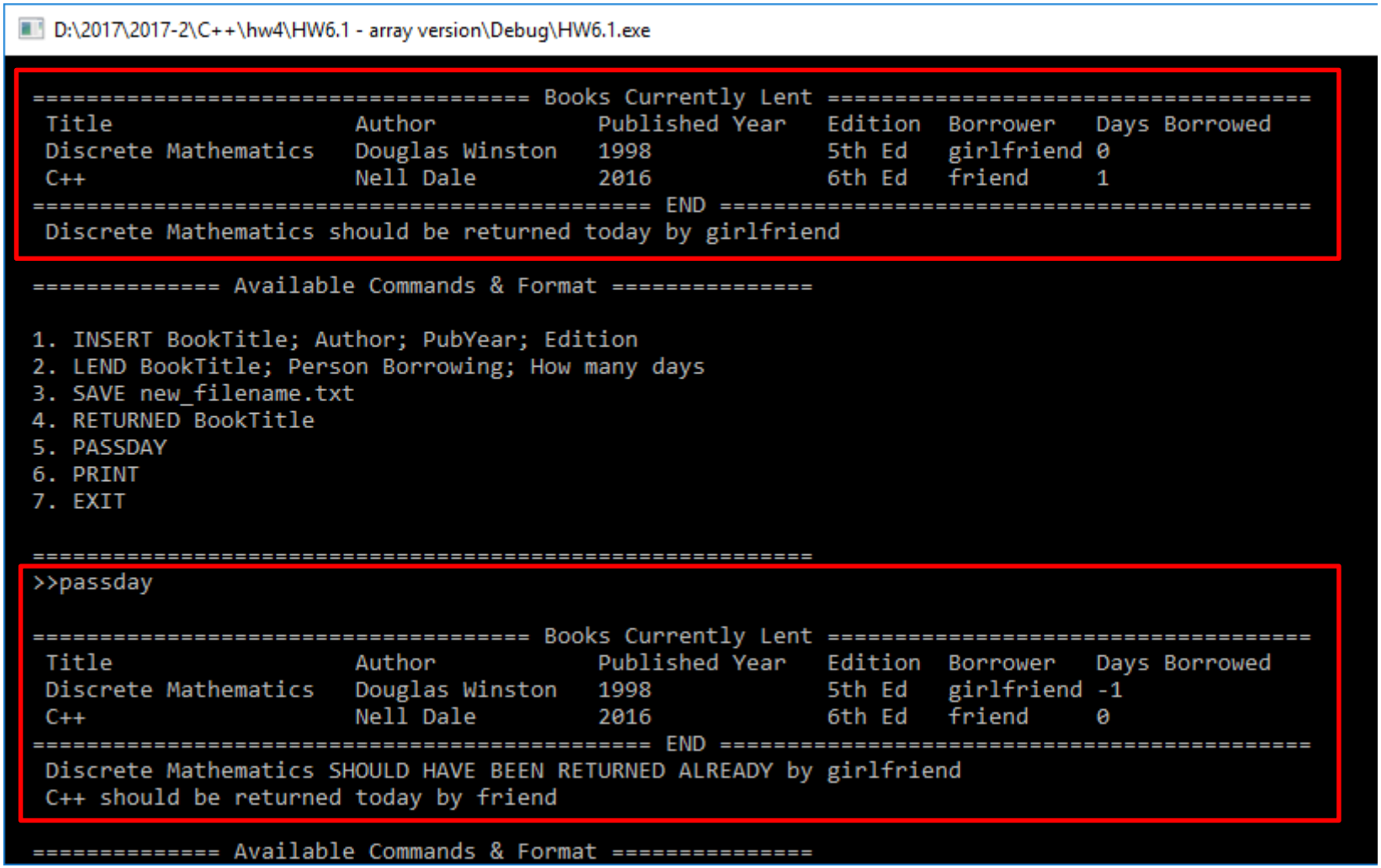
Passday Example:



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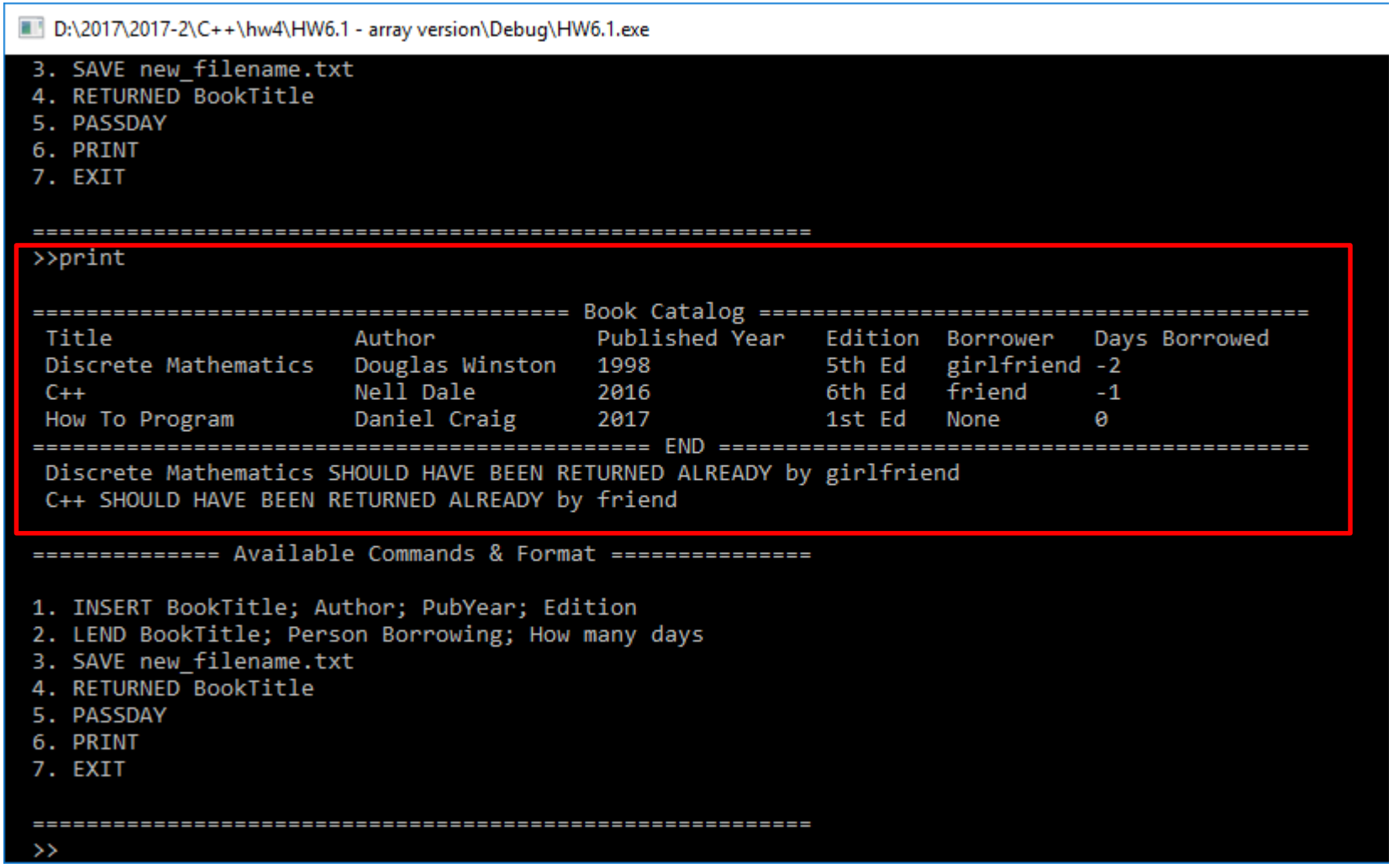
Print Example:



Homework 4

- How to submit.
  - Download the template for homework from class board in HisNet, and write report.
    The report should include
    - 1) ‘Primary codes with comments’
    - 2) ‘Screen shot of the result’
  - Submit ‘report’ and ‘codes’ in zip file.
    Please follow the file naming rule. *HW4_(Student Number) _(Name).zip*
    ex: HW4_201101234_HongGilDong.zip
  - Upload it to HisNet.

- Deadline: 10.21 (Saturday), 23:00