期中实验 shell 脚本综合编程实验

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一，实验目的
练习 shell 编程脚本

(源代码)

```
#!/bin/bash

bookdb=${1:-"books.db"}

sysName="personal library managerment system"
sysVersion="Version:1.0"
sysAuthor="llt@jxnu.edu.com"
sysDate=$(date +%F)

Red=1
Green=2
Brown=3
Blue=4
Magenta=5
Cyan=6
White=7
colors=($Red $Green $Grown $blue $Magenta $Cyan $White)

Width=$(tput cols)
Height=$(tput lines)

bold=$(tput bold)
rev=$(tput rev)
normal=$(tput sgr0)

center(){
    tput cup $1 $(((Width-${#2})/2))
}
centerMessage(){
    tput cup $1 $(((Width-$2)/2))
}
```

```
bold(){
	echo -n ${bold}"$1"${normal}
}

color(){
	echo -ne "\e[3${1}m${2}\e[0m"
}

boldColor(){
	echo -ne "${bold}\e[3${1}m${2}\e[0m"
}

error(){
	errTip='Wrong Input! Press any key to retry...'
	center 26 "$errTip"; color $Red "$errTip"
	read -n1 -s key
}
#进入页面
llt-home(){
	tput clear
	center 6 "$sysName"; boldColor $Brown "$sysName";
	center 8 "$sysVersion"; echo -n "$sysVersion";
	center 10 "$sysAuthor"; color $Green "$sysAuthor";
	center 12 "$sysDate"; echo -n "$sysDate";
	message="Press ENTER to continue..."
	center 22 "$message"; color $Cyan "$message"
	read -n1 key
}
#菜单

llt-menu(){
	error=0
	while :; do
		if [[ $error -eq 0 ]];then
			tput clear
			center 4 "Main Menu"; boldColor $Brown "Main Menu";
			centerMessage 6 40;    bold "1:Show books"
			centerMessage 8 40; bold "2:Find books"
			centerMessage 10 40; bold "3:Add books"
			centerMessage 12 40; bold "4:Edit information of books"
			centerMessage 14 40; bold "5:Check out books"
			centerMessage 16 40; bold "6:Check in books"
			centerMessage 18 40; bold "7:Delete books"
			centerMessage 20 40; bold "q:Exit"
```

```
            message='Please inter your choice(1-7 or q):'
            inputCol=$(((Width-${#message})/2+${#message}))
            center 24 "$message"; color $Cyan "$message"
        fi
        read choice
        case $choice in
            1)  llt-bookMenu; error=0;;
            2)  llt-findMenu;  error=0;;
            3)  llt-addBooks;  error=0;;
            4)  llt-editBooks;  error=0;;
            5)  llt-checkOut;  error=0;;
            6)  llt-checkIn;  error=0;;
            7)  llt-deleteBooks;error=0;;
            [qQ]*)  tput clear;exit 0;;
            *)  error $((infoHeight+2))
                tput cup $((infoHeight)) $inputCol
                tput ed;  error=1;;
        esac
    done
}
llt-bookMenu(){
    error=0
    while :; do
        if [ $error -eq 0 ];then
            tput clear
            center 4 "Show books"; boldColor $Brown "Show books"
            centerMessage 6 40; bold "1:Sort by ID"
            centerMessage 8 40; bold "2:Sort by Title"
            centerMessage 10 40; bold "3:Sort by Author"
            centerMessage 12 40; bold "q:      Main Menu"
            message='enter your choice(1-3 or q):'
            inputCol=$(((Width-${#message})/2+${#message}))
            center 24 "$message";color $Cyan "$message"
        fi
        read choice
        case $choice in
            1)  llt-showBook 1;;
            2)  llt-showBook 2;;
            3)  llt-showBook 3;;
            [qQ]*)  tput clear;return 0;;
            *)  error $((infoHeight+2))
                tput cup $((infoHeight)) $inputCol
                tput ed;error=1;;
        esac
```

```
    done
}

llt-showBook(){
    if [ ! -f $bookdb ];then
        echo "The book database is empty."
        return 1
    fi
    result=y
    until [ "$result" = n ];do
        tput clear
        center 6 "Show book";boldColor $Brown "Show books"
        case $1 in
            1)  llt-sort 1;;
            2)  llt-sort 2;;
            3)  llt-sort 3;;
        esac
        backmessage="BACK"
        center 24 "$backmessage";color $Cyan "$backmessage"
        read result
        case $result in
            *)  tput clear;return 0;;
        esac
    done

}
#根据 id/title/author 排序
llt-sort(){
    sort -t% -k $1,$1 books.db -o books.db
    awk 'BEGIN{FS = "%"}
    {
    print $9
    print "ID:" $1;
    print "Title:" $2;
    print "Author:" $3;
    print "Tags:"    $4;
    print "Status:"    $5;
    print $8
    }' $bookdb
}

#查找图书
llt-findMenu(){
    if [ ! -f $bookdb ];then
```

```
            echo "The book database is empty."
            return 1
        fi
        error=0
        while :; do
            if [ $error -eq 0 ];then
                tput clear
                center 6 "Find books"; boldColor $Brown "Find books"
                centerMessage 8 20;    bold "1:       Find by bookId"
                centerMessage 10 20; bold "2:         Find by title"
                centerMessage 12 20; bold "3:       Find by author"
                centerMessage 14 20; bold "4:          Find by tags"
                centerMessage 16 20; bold "q:                Main Menu"
                message='enter your choice(1-3 or q):'
                inputCol=$(((Width-${#message})/2+${#message}))
                center 24 "$message";color $Cyan "$message"
            fi
            read choice
            case $choice in
                1)          llt-findbyBookID;;
                2)          llt-findbyTitle;;
                3)          llt-findbyAuthor;;
                4)          llt-findbyTags;;
                [qQ]*)      tput clear;return 0;;
                *)          error $((infoHeight+2))
                            tput cup $((infoHeight)) $inputCol
                            tput ed;error=1;;
            esac
        done
}
llt-findbyBookID(){
        error=0
        while :; do
            if [ $error -eq 0 ];then
                tput clear
                center 6 "Find books"; boldColor $Brown "Find books"
                message='Please input the bookBookID!'
                center 10 "$message";color $Cyan "$message"
            fi
            tput cup 13 $((Width/2-5))
            read bookId
            tput clear
            center 6 "Find books"; boldColor $Brown "Find books"
            #-v 选项  自定义变量
```

```
            #FS 查找时的字段分割符
            awk -v    bookId=$bookId 'BEGIN{FS = "%"}
                  $1~bookId{
            print $9
            print "ID:" $1;
                  print "Title:" $2;
                  print "Author:" $3;
                  print "Tags:"    $4;
                  print "status:"    $5;
                  print $8
                  }' $bookdb
            backmessage="BACK"
            center 24 "$backmessage";color $Cyan "$backmessage"
            read result
            case $result in
                  *)    tput clear;return 0;;
            esac
      done
}
llt-findbyTitle(){
            error=0
            while :; do
                        if [ $error -eq 0 ];then
                                    tput clear
                                    center 6 "Find books"; boldColor $Brown "Find books"
                                    message='Please input the bookTitle!'
                                    center 10 "$message";color $Cyan "$message"
                        fi
                        tput cup 13 $((Width/2-5))
                        read title
                        tput clear
                        center 6 "Find books"; boldColor $Brown "Find books"
                        #-v 选项  自定义变量
                        #FS 查找时的字段分割符
                        awk -v    title=$title 'BEGIN{FS = "%"}
                        $2~title{
                        print $9
                        print "ID:" $1;
                        print "Title:" $2;
                        print "Author:" $3;
                        print "Tags:"    $4;
                        print "Status:"    $5;
                        print $8
                        }' $bookdb
```

```
                backmessage="BACK"
                center 24 "$backmessage";color $Cyan "$backmessage"
                read result
                case $result in
                        *)          tput clear;return 0;;
                esac
        done
}
llt-findbyAuthor(){
        error=0
        while :; do
                if [ $error -eq 0 ];then
                        tput clear
                        center 6 "Find books"; boldColor $Brown "Find books"
                        message='Please input the bookAuthor!'
                        center 10 "$message";color $Cyan "$message"
                fi
                tput cup 13 $((Width/2-5))
                read author
                tput clear
                center 6 "Find books"; boldColor $Brown "Find books"
                #-v 选项  自定义变量
                #FS 查找时的字段分割符
                awk -v    author=$author 'BEGIN{FS = "%"}
                $3~author{
                print $9
                print "ID:" $1;
                print "Title:" $2;
                print "Author:" $3;
                print "Tags:"    $4;
                print "Status:"    $5;
                print $8
                }' $bookdb
                backmessage="BACK"
                center 24 "$backmessage";color $Cyan "$backmessage"
                read result
                case $result in
                        *)          tput clear;return 0;;
                esac
        done
}


llt-findbyTags(){
```

```
        error=0
        while :; do
                if [ $error -eq 0 ];then
                        tput clear
                        center 6 "Find books"; boldColor $Brown "Find books"
                        message='Please input the bookTags!'
                        center 10 "$message";color $Cyan "$message"
                fi
                tput cup 13 $((Width/2-5))
                read tags
                tput clear
                center 6 "Find books"; boldColor $Brown "Find books"
                #-v 选项  自定义变量
                #FS 查找时的字段分割符
                awk -v    tags=$tags 'BEGIN{FS = "%"}
                $4~tags{
                print $9
                print "ID:" $1;
                print "Title:" $2;
                print "Author:" $3;
                print "Tags:"    $4;
                print "Status:"    $5;
                print $8
                }' $bookdb
                backmessage="BACK"
                center 24 "$backmessage";color $Cyan "$backmessage"
                read result
                case $result in
                        *)          tput clear;return 0;;
                esac
        done
}

#借书
llt-checkOut(){
        tput clear
    any="y"
    while [ "$any" = "y" ];do
        tput clear
        center 4 "Check out books";boldColor $Brown "Check out books"
        centerMessage 7 50;boldColor $Blue "           ID:"
        centerMessage 9 50;boldColor $Blue "      Title:"
        centerMessage 11 50;boldColor $Blue "    Author:"
        centerMessage 13 50;boldColor $Blue "       Tags:"
```

```
        centerMessage 15 50;boldColor $Blue "    in/out:"
        centerMessage 17 50;boldColor $Blue "Borrower:"
        tput cup 7 $((Width/2-15)); read BookId
        # 生成 bookId
        if [ ${#BookId} -eq 1 ]; then
            BookId="llt-0000$BookId"
        elif [ ${#BookId} -eq 2 ]; then
            BookId="llt-000$BookId"
        elif [ ${#BookId} -eq 3 ]; then
            BookId="llt-00$BookId"
        elif [ ${#BookId} -eq 4 ]; then
            BookId="llt-0$BookId"
        else
            BookId="llt-$BookId"
        fi
        # 检查 bookId 是否有效
        found_num=`awk -v id=$BookId
'begin{FS="%";count=0}$1~id{count=count+1}END{print count}' books.db`
        if [[ -z "$found_num" || $found_num -ne 1 ]];then
            errTip="valied BookId! Press any key to retry..."
            center 24 "$errTip"; color $Red "$errTip"
            read -n1 -s key
            continue
        fi
        tput cup 7 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $1}' $bookdb
        tput cup 9 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $2}' $bookdb
        tput cup 11 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $3}' $bookdb
        tput cup 13 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $4}' $bookdb
        tput cup 15 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $5}' $bookdb
        tput cup 17 $((Width/2-15)); read borrower
        suremessage="Are you sure?[y/n/c]:"
        center 22 "$suremessage";color $Cyan "$suremessage"
        read sure
        case $sure in

            [yY]) sed -i "/^$BookId/s#%in%%#%out%$borrower%$sysDate#" $bookdb;;
            [nN])       continue;;
            [cC]|*)     tput clear;return 0;;
        esac
```

```
            anymessage="Borrow anymore book?[y/n]:"
            center 24 "$anymessage";color $Cyan "$anymessage"
            read any
        done
}
还书
llt-checkIn(){
        tput clear
        any="y"
        while [ "$any" = "y" ];do
            tput clear
            center 4 "Check in books";boldColor $Brown "Check in books"
            centerMessage 7 50;boldColor $Blue "           ID:"
            centerMessage 9 50;boldColor $Blue "      Title:"
            centerMessage 11 50;boldColor $Blue "    Author:"
            centerMessage 13 50;boldColor $Blue "       Tags:"
            centerMessage 15 50;boldColor $Blue "    in/out:"
            centerMessage 17 50;boldColor $Blue "Borrower:"
            centerMessage 19 50;boldColor $Blue " outTime:"
            tput cup 7 $((Width/2-15)); read BookId
            # 生成 bookId
            if [ ${#BookId} -eq 1 ]; then
                BookId="llt-0000$BookId"
            elif [ ${#BookId} -eq 2 ]; then
                BookId="llt-000$BookId"
            elif [ ${#BookId} -eq 3 ]; then
                BookId="llt-00$BookId"
            elif [ ${#BookId} -eq 4 ]; then
                BookId="llt-0$BookId"
            else
                BookId="llt-$BookId"
            fi
            # 检查 bookId 是否有效
            found_num=`awk                                -v                                id=$BookId
'begin{FS="%";count=0}$1~id{count=count+1}END{print count}' books.db`
            if [[ -z "$found_num" || $found_num -ne 1 ]];then
                errTip="valied BookId! Press any key to retry..."
                center 26 "$errTip"; color $Red "$errTip"
                read -n1 -s key
                continue
            fi
            tput cup 7 $((Width/2-15))
            awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $1}' $bookdb
            tput cup 9 $((Width/2-15))
```

```
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $2}' $bookdb
        tput cup 11 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $3}' $bookdb
        tput cup 13 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $4}' $bookdb
        tput cup 15 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $5}' $bookdb
        tput cup 17 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $6}' $bookdb
        tput cup 19 $((Width/2-15))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $7}' $bookdb

        suremessage="Are you sure?[y/n/c]:"
        center 24 "$suremessage";color $Cyan "$suremessage"
        read sure
        case $sure in
            [yY]) sed -i "/^$BookId/s#%out%.*#%in%%#" $bookdb;;
            [nN])       continue;;
            [cC]|*)     tput clear;return 0;;
        esac
        anymessage="Borrow anymore book?[y/n]:"
        center 26 "$anymessage";color $Cyan "$anymessage"
        read any
    done
}

删除图书
llt-deleteBooks(){
    tput clear
    any="y"
    while [ "$any" = "y" ];do
        tput clear
        center 4 "Delete books";boldColor $Brown "Delete books"
        centerMessage 7 $((Width/2-10));boldColor $Blue "           ID:"
        centerMessage 9 $((Width/2-10));boldColor $Blue "      Title:"
        centerMessage 11 $((Width/2-10));boldColor $Blue "    Author:"
        centerMessage 13 $((Width/2-10));boldColor $Blue "       Tags:"
        centerMessage 15 $((Width/2-10));boldColor $Blue "    in/out:"
        centerMessage 17 $((Width/2-10));boldColor $Blue "Borrower:"
        centerMessage 19 $((Width/2-10));boldColor $Blue " outTime:"
        tput cup 7 $((Width/2-5)); read BookId
        #  生成 bookId
        #根据 bookid 的长度补全
        if [ ${#BookId} -eq 1 ]; then
```

```
            BookId="llt-0000$BookId"
        elif [ ${#BookId} -eq 2 ]; then
            BookId="llt-000$BookId"
        elif [ ${#BookId} -eq 3 ]; then
            BookId="llt-00$BookId"
        elif [ ${#BookId} -eq 4 ]; then
            BookId="llt-0$BookId"
        else
            BookId="llt-$BookId"
        fi
        # 检查 bookId 是否有效
        found_num=`awk -v id=$BookId 'begin{FS="%";count=0}$1~id{count=count+1}END{print count}' books.db`
        if [[ -z "$found_num" || $found_num -ne 1 ]];then
            errTip="valied BookId! Press any key to retry..."
            center 32 "$errTip"; color $Red "$errTip"
            read -n1 -s key
            continue
        fi
        tput cup 7 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $1}' $bookdb
        tput cup 9 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $2}' $bookdb
        tput cup 11 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $3}' $bookdb
        tput cup 13 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $4}' $bookdb
        tput cup 15 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $5}' $bookdb
        tput cup 17 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $6}' $bookdb
        tput cup 19 $((Width/2-5))
        awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $7}' $bookdb

        suremessage="Are you sure?[y/n/c]:"
        center 32 "$suremessage";color $Cyan "$suremessage"
        read sure
        case $sure in
            [yY]) sed -i "/^$BookId/d" $bookdb;;
            [nN])       continue;;
            [cC]|*)     tput clear;return 0;;
        esac
        anymessage="Success,any more book to delete?[y/n]:"
        center 35 "$anymessage";color $Cyan "$anymessage"
```

```
            read any
        done
}
llt-editBooks(){
        tput clear
        any="y"
        while [ "$any" = "y" ];do
            tput clear
            center 4 "Edit information of books";boldColor $Brown "Edit information of books"
            tput cup 7 $((Width/2-15)) ;boldColor $Blue "BookId:"
            tput cup 9 $((Width/2-15));boldColor $Blue " Title:"
            tput cup 11 $((Width/2-15));boldColor $Blue "Author:"
            tput cup 13 $((Width/2-15));boldColor $Blue "    Tags:"
            tput cup 15 $((Width/2-15));boldColor $Blue "in/out:"
            tput cup 17 $((Width/2-15));boldColor $Blue "Borrower:"
            tput cup 19 $((Width/2-15));boldColor $Blue "outTime:"
            tput cup 7 $((Width/2-5));read BookId

            if [ ${#BookId} -eq 1 ]; then
                BookId="llt-0000$BookId"
            elif [ ${#BookId} -eq 2 ]; then
                BookId="llt-000$BookId"
            elif [ ${#BookId} -eq 3 ]; then
                BookId="llt-00$BookId"
            elif [ ${#BookId} -eq 4 ]; then
                BookId="llt-0$BookId"
            else
                BookId="llt-$BookId"
            fi
            # 检查 bookId 是否有效
            found_num=`awk -v id=$BookId
'begin{FS="%";count=0}$1~id{count=count+1}END{print count}' books.db`
            if [[ -z "$found_num" || $found_num -ne 1 ]];then
                errTip="valied BookId! Press any key to retry..."
                center 26 "$errTip"; color $Red "$errTip"
                read -n1 -s key
                continue
            fi

            tput cup 7 $((Width/2-5))
            awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $1}' $bookdb
            tput cup 9 $((Width/2-5))
            awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $2}' $bookdb
            oldTitle=`awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $2}' $bookdb`
```

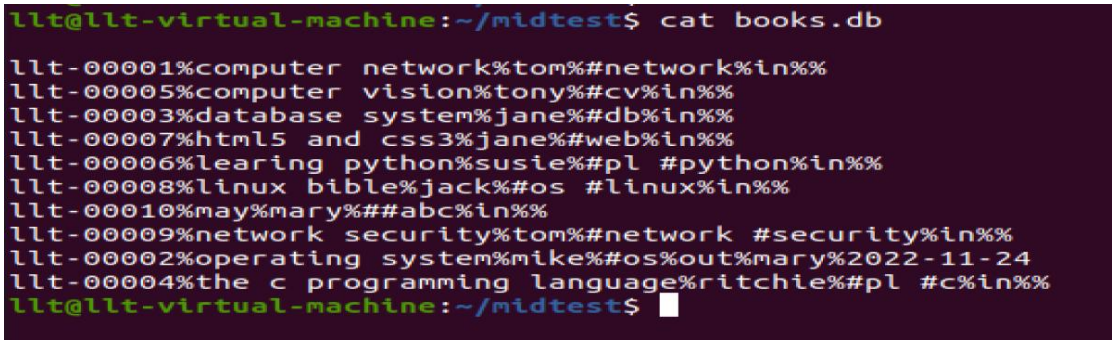
```
            tput cup 11 $((Width/2-5))
            awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $3}' $bookdb
            oldAuthor=`awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $3}' $bookdb`
            tput cup 13 $((Width/2-5))
            awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $4}' $bookdb
            oldTags=`awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $4}' $bookdb`
            tput cup 15 $((Width/2-5))
            awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $5}' $bookdb
            oldState=`awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $5}' $bookdb`
            tput cup 17 $((Width/2-5))
              awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $6}' $bookdb
              oldBname=`awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $6}' $bookdb`
              tput cup 19 $((Width/2-5))
                awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $7}' $bookdb
                oldTime=`awk -v BookId=$BookId 'BEGIN{FS="%"}$1~BookId{print $7}' $bookdb`



            tput cup 9 $((Width/2+15)); boldColor $Blue "==>"
            tput cup 11 $((Width/2+15)); boldColor $Blue "==>"
            tput cup 13 $((Width/2+15)); boldColor $Blue "==>"
            tput cup 15 $((Width/2+15)); boldColor $Blue "==>"
            tput cup 17 $((Width/2+15)); boldColor $Blue "==>"
            tput cup 19 $((Width/2+15)); boldColor $Blue "==>"
            tput cup 9 $((Width/2+20));read Title
            tput cup 11 $((Width/2+20));read Author
            tput cup 13 $((Width/2+20));read Tags
            tput cup 15 $((Width/2+20));read State
            tput cup 17 $((Width/2+20));read bname
            tput cup 19 $((Width/2+20));read Time
            newTitle=${Title:-$oldTitle}
            newAuthor=${Author:-$oldAuthor}
            newTags=${Tags:-$oldTags}
            newState=${State:-$oldState}
            suremessage="Are you sure? [y/n/c(ancel)]: "
            center 24 "$suremessage";color $Cyan "$suremessage"
            read sure
            case $sure in
                [yY]) sed                                                                                   -i
"/^$BookId/{s@$oldTitle@$newTitle@;s@$oldAuthor@$newAuthor@;s@$oldTags@$newTags
@;s@$oldState@$newState@}" $bookdb;;
                [nN])       continue;;
                [cC]|*)     tput clear;return 0;;
            esac
```

```
            anymessage="Edit anymore book?[y(es)/n(o)]:"
            center 26 "$anymessage";color $Cyan "$anymessage"
            read any
        done
}
llt-addBooks(){
        tput clear
        any="y"
        while [ "$any" = "y" ];do
            tput clear
            center 4 "Add books";boldColor $Brown "Add books"
            tput cup 7 $((Width/2-10)); boldColor $Blue "           ID: "
            tput cup 9 $((Width/2-10)); boldColor $Blue "      Title: "
            tput cup 11 $((Width/2-10)); boldColor $Blue "    author: "
            tput cup 13 $((Width/2-10)); boldColor $Blue "       Tags: "
            tput cup 7 $((Width/2)); llt-autoId
            tput cup 9 $((Width/2)); read Title
            tput cup 11 $((Width/2)); read Author
            tput cup 13 $((Width/2)); read Tags
            suremessage="Are you sure? [y/n/c(ancel)]: "
            center 20 "$suremessage";color $Cyan "$suremessage"
            read sure
            BookId=$(llt-autoId)
            case $sure in
                [yY]) echo "$BookId%$Title%$Author%#$Tags%in%%" >>$bookdb;;
                [nN])       continue;;
                [cC]|*)     tput clear;return 0;;
            esac
            anymessage="Success, any book to add?[y/n]:"
            center 22 "$anymessage";color $Cyan "$anymessage"
            read any
        done
}
llt-autoId(){
        new=`awk  'BEGIN{FS="%"}{last=$1}END{print  last}'  $bookdb  |  awk  'BEGIN{FS="-"}{print
$2+1}'`
        if [ ${#new} -eq 1 ];then
            new="llt-0000$new"
        elif [ ${#new} -eq 2 ];then
            new="llt-000$new"
        elif [ ${#new} -eq 3 ];then
            new="llt-00$new"
        elif [ ${#new} -eq 4 ];then
            new="llt-0$new"
```

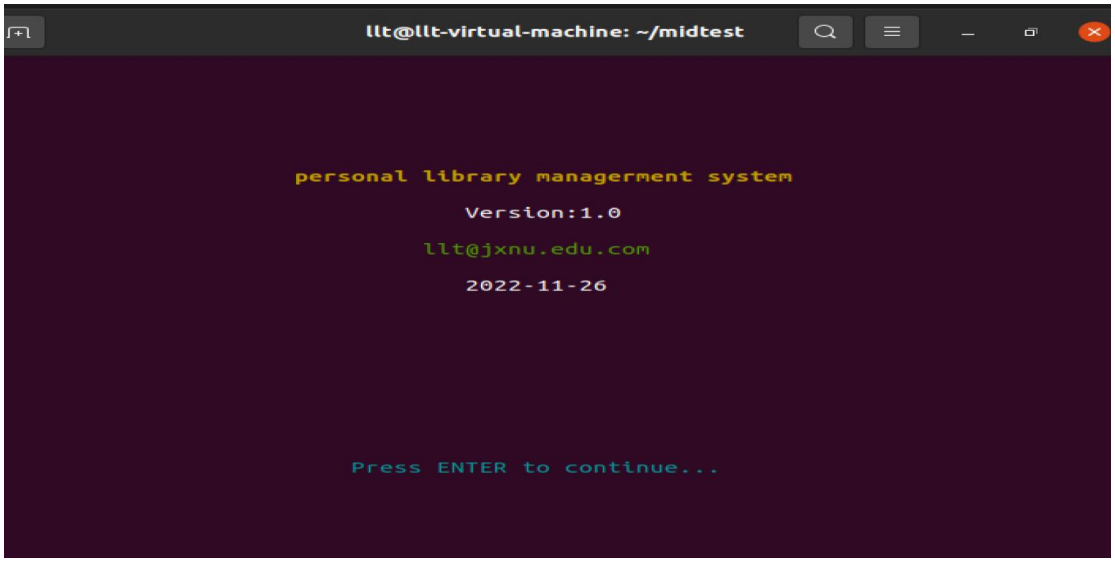
```
        else
                new="llt-$new"
        fi
        echo "$new"
}

llt-home ;
llt-menu ;
```

(运行截图)

Books.db



主界面



主菜单

```
                    Main Menu
        1:Show books
        2:Find books
        3:Add books
        4:Edit information of books
        5:Check out books
        6:Check in books
        7:Delete books
        q:Exit

          Please inter your choice(1-7 or q):
```

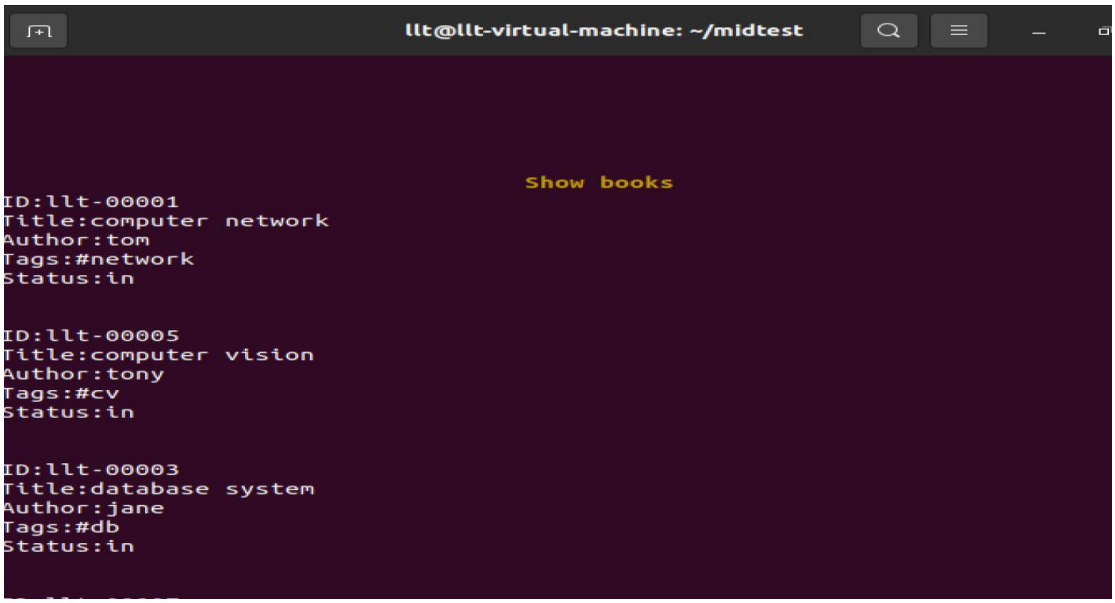
显示图书信息

```
llt@llt-virtual-machine: ~/midtest

                    Show books
        1:Sort by ID
        2:Sort by Title
        3:Sort by Author
        q:    Main Menu

              enter your choice(1-3 or q):
```

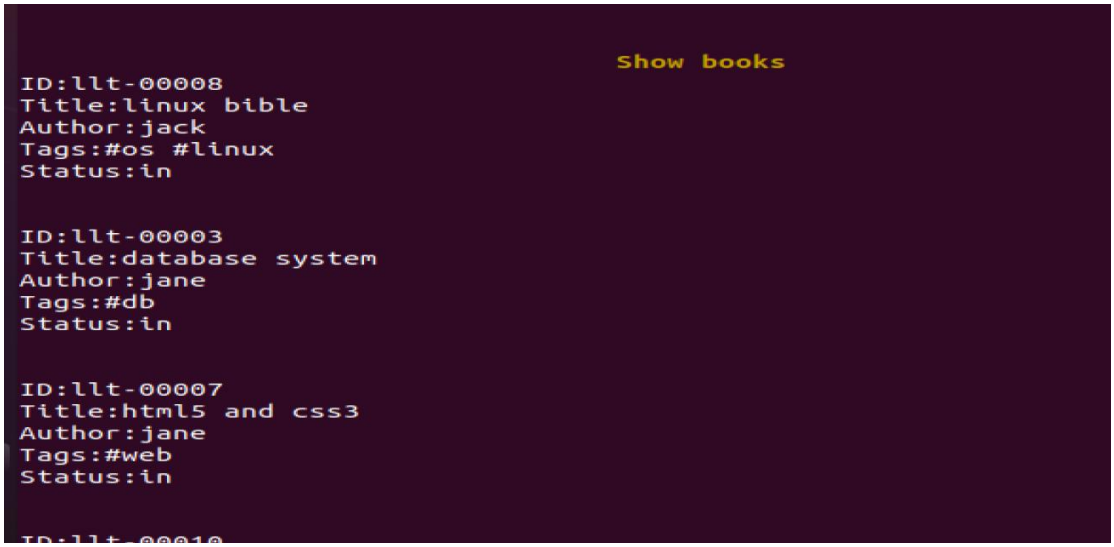
根据 ID 排序

```
ID:llt-00007
Title:html5 and css3
Author:jane
Tags:#web
Status:in

ID:llt-00008
Title:linux bible
Author:jack
Tags:#os #linux
Status:in

ID:llt-00009
Title:network security
Author:tom
Tags:#network #security
Status:in

ID:llt-00010
Title:may
Author:mary                         BACK
Tags:##abc
Status:in
```

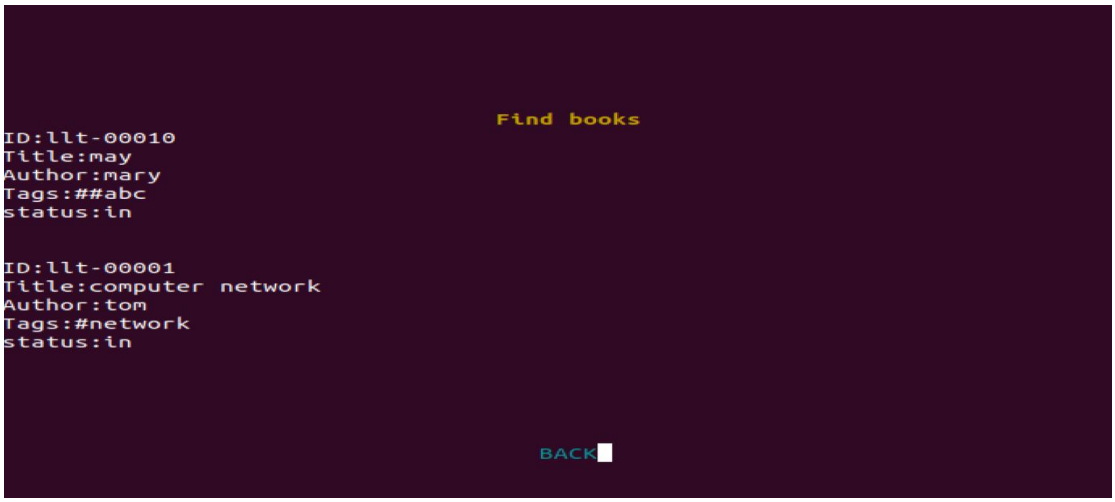
根据 TItle 排序



根据 Author 排序



查找图书



添加图书

```
                    Add books

                     ID: llt-00011
                  Title: mary
                 author: may
                   Tags: #ag


          Are you sure? [y/n/c(ancel)]: y
          Success, any book to add?[y/n]:
```

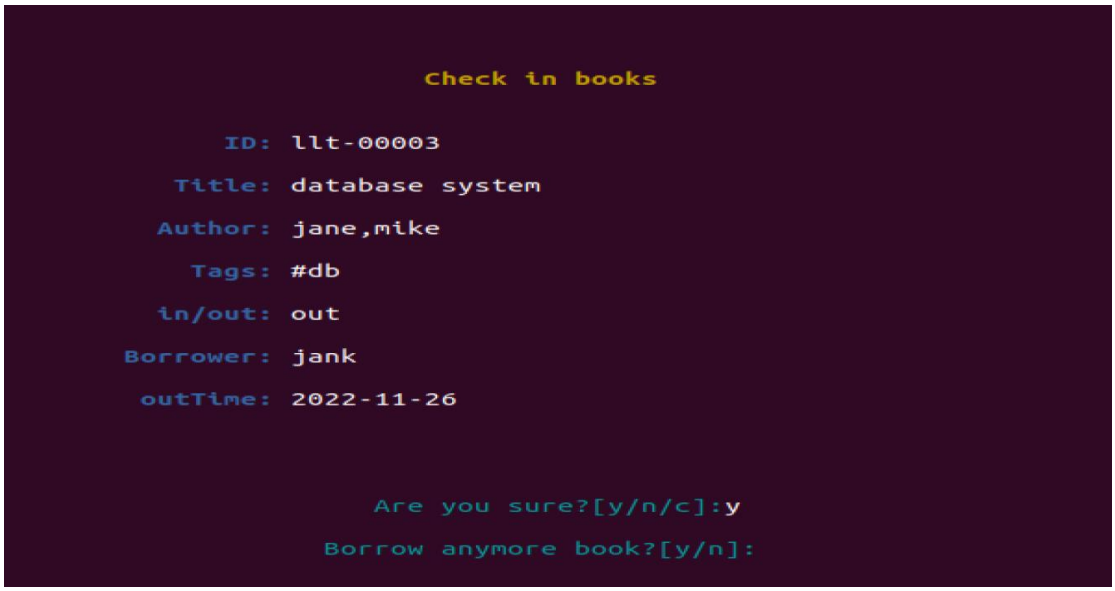
编辑图书

```
        Edit information of books

    BookId:    llt-00003
     Title:    database system      ==>
    Author:    jane                 ==>   jane,mike
      Tags:    #db                  ==>
    in/out:    in                   ==>
    Borrower:                       ==>
    outTime:                        ==>


    Are you sure? [y/n/c(ancel)]: y
    Edit anymore book?[y(es)/n(o)]:
```

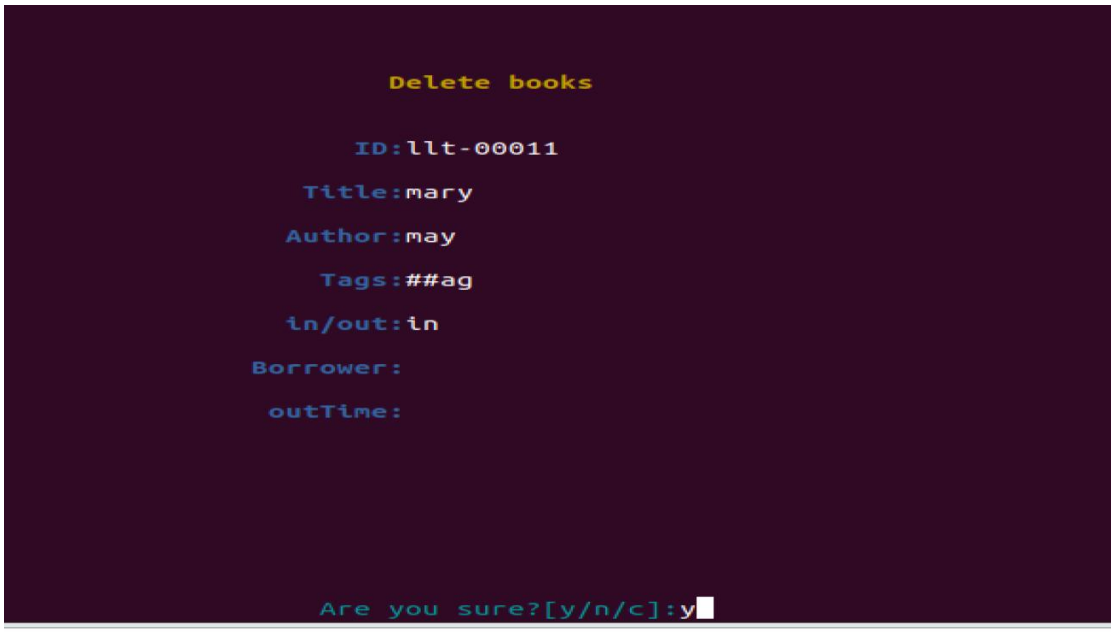
借出图书

```
                  Check out books

        ID: llt-00003
     Title: database system
    Author: jane,mike
      Tags: #db
    in/out: in
  Borrower: jank
```

归还图书


Check in books
ID: llt-00003
Title: database system
Author: jane,mike
Tags: #db
in/out: out
Borrower: jank
outTime: 2022-11-26
Are you sure?[y/n/c]:y
Borrow anymore book?[y/n]:

删除图书


Delete books
ID:llt-00011
Title:mary
Author:may
Tags:##ag
in/out:in
Borrower:
outTime:
Are you sure?[y/n/c]:y