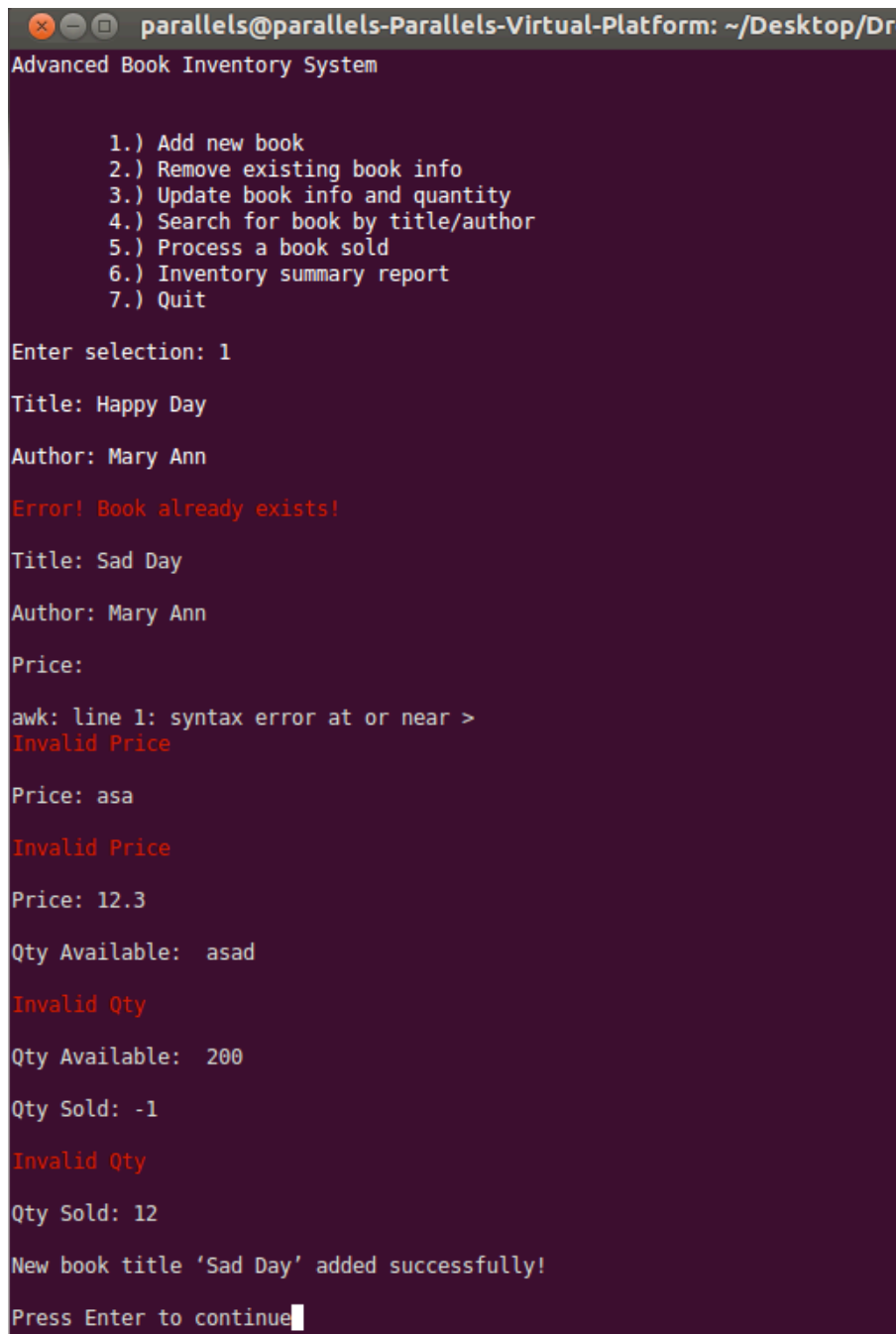


(Interpreted) requirements of the program

- Create a program using shell script
- Read data from a file "BookDB.txt" and process the data
- Write processed data on to the file
- Processing data includes addition, updating and removal of records

Diagram / Illustrations of program design

Main features



```
parallels@parallels-Parallels-Virtual-Platform: ~/Desktop/Dro
Advanced Book Inventory System

    1.) Add new book
    2.) Remove existing book info
    3.) Update book info and quantity
    4.) Search for book by title/author
    5.) Process a book sold
    6.) Inventory summary report
    7.) Quit

Enter selection: 1
Title: Happy Day
Author: Mary Ann
Error! Book already exists!
Title: Sad Day
Author: Mary Ann
Price:
awk: line 1: syntax error at or near >
Invalid Price
Price: asa
Invalid Price
Price: 12.3
Qty Available: asad
Invalid Qty
Qty Available: 200
Qty Sold: -1
Invalid Qty
Qty Sold: 12
New book title 'Sad Day' added successfully!
Press Enter to continue
```

- Main menu + Option 1: Add new book. Includes error checking of input and checks if book already exists

```
parallels@parallels-Parallels-Virtual-Platform: ~/D
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 2

Title: Green Day
Author: Mary Ann
Error! Book does not exists!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Platform: ~/D
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 2

Title:
Empty Input
Title: Sad Day
Author:
Empty Input
Author: Mary Ann
Book Title 'Sad Day' removed successfully!

Press Enter to continue
```

- Option 2: Removal of existing book. Checks if book exists and checks for empty input

```
parallels@parallels-Parallels-Virtual-Pla
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 3

Title: Sad Day

Author: Mary Ann

Error! Book does not exists!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-P
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 3

Title: Happy Day

Author: Mary Ann

Book found!

a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: a
New Title: Catch Me If You Can
Error! Book already exists!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Pla
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: a
New Title: Sad Day
Book's Title has been updated successfully!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Platfor
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: b
New Author: Mary Ann
Error! Book already exists!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-P
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: b
New Author: Mary Anne
Book's Author has been updated successfully!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtua
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: c
New Price:
awk: line 1: syntax error at or near >
Invalid Price

Press Enter to continue
```

```
parallels@parallels-Parallels-V
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: c
New Price: asqw
Invalid Price
Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: c
New Price: 15
Book's Price has been updated successfully!
Press Enter to continue
```

```
parallels@parallels-Parallels-Vi
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: d
New Qty Available: asd
Invalid Qty
Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Platf
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: d
New Qty Available: 120
Book's Qty Available has been updated successfully!
Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Pla
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: e
New Qty Sold: 12
Book's Qty Sold has been updated successfully!
Press Enter to continue
```

```
parallels@parallels-Parallels
a) Update Title
b) Update Author
c) Update Price
d) Update Qty Available
e) Update Qty Sold
f) Back to main menu

Please enter your choice: e
New Qty Sold: asda
Invalid Qty
Press Enter to continue
```

- Option 3: Update book info and quantity. Brings up submenu after finding book. Submenu contains info to be updated. Each attribute to be updated has error checking. Upon changing Title or Author, existing books are checked to see whether new title or author change has an existing record.

```
parallels@parallels-Parallels-Virtual-Pl parallels@parallels-Parallels-Virtual-P
Advanced Book Inventory System
1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit
Enter selection: 4
Title: Sad Day
Author: Mary Anne
Found 1 records:
Sad Day, Mary Anne, 15, 120, 12
Press Enter to continue

Advanced Book Inventory System
1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit
Enter selection: 4
Title:
Author: Mary
Found 2 records:
Catch Me If You Can, Mary Ann, 23.60, 20, 14
Sad Day, Mary Anne, 15, 120, 12
Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Platform: ~/Desk
Advanced Book Inventory System
1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit
Enter selection: 4
Title: Harry
Author:
Found 3 records:
Harry Potter - The Half Blood Prince, J.K Rowling, 40.30, 10, 50
Harry Potter - The Phoniex, J.K Rowling, 50.00, 30, 20
Harry Potter - The Deathly Hollow, Dan Lin, 55.00, 33, 790
Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Platform: ~/Desktop/Dropbox/SIM/212 Interac

Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 4

Title:
Author:

Found 11 records:
Harry Potter - The Half Blood Prince, J.K Rowling, 40.30, 10, 50
The little Red Riding Hood, Dan Lin, 40.80, 20, 10
Harry Potter - The Phoniex, J.K Rowling, 50.00, 30, 20
Harry Potter - The Deathly Hollow, Dan Lin, 55.00, 33, 790
Little Prince, The Prince, 15.00, 188, 9
Lord of The Ring, Johnny Dept, 56.80, 100, 38
Three Little Pig, Andrew Lim, 89.10, 290, 189
All About Ubuntu, Ubuntu Team, 76.00, 55, 133
Catch Me If You Can, Mary Ann, 23.60, 20, 14
Sad Day, Mary Anne, 15, 120, 12
Hello There, James B Kennedy, 12, 30, 1

Press Enter to continue
```

- Option 4: Search book info by title/author. Searches for book with specific Title and Author. Searches for author only and title only. Searches for part of author or title. If no input for both, all books are shown.

```
parallels@parallels-Parallels-Virtual-Box:~$ ./book_inventory_system.py
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 5

Title: Sad Day

Author:
Empty Input
Author: Mary Ann

Error! Book does not exists!

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Box:~$ ./book_inventory_system.py
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 5

Title:
Empty Input
Title: Sad Day

Author: Mary Anne

No. of copies sold: 12

Current book info:
Sad Day, Mary Anne, 15, 120, 12

New book info:
Sad Day, Mary Anne, 15, 108, 24

Press Enter to continue
```

```
parallels@parallels-Parallels-Virtual-Box:~$ ./book_inventory_system.py
Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 5

Title: Sad Day

Author: Mary Anne

No. of copies sold: 200

No. of copies sold exceeds qty available

No. of copies sold: asd

Invalid Input

No. of copies sold: 12

Current book info:
Sad Day, Mary Anne, 15, 84, 48

New book info:
Sad Day, Mary Anne, 15, 72, 60

Press Enter to continue
```

- Option 5: Process a book sold. Checks whether book and author exists. Updates quantity sold and quantity available.


```
parallels@parallels-Parallels-Virtual-Platform: ~/Desktop/Dropbox/SIM/212 Interacting Systems/02 - Assignments/

Advanced Book Inventory System

1.) Add new book
2.) Remove existing book info
3.) Update book info and quantity
4.) Search for book by title/author
5.) Process a book sold
6.) Inventory summary report
7.) Quit

Enter selection: 6

Title Author $Price Qty Avail. Qty Sold Total Sales
-----
Harry Potter - The Half Blood Prince J.K Rowling $40.30 10 50 $2015.00
The little Red Riding Hood Dan Lin $40.80 20 10 $408.00
Harry Potter - The Phoniex J.K Rowling $50.00 30 20 $1000.00
Harry Potter - The Deathly Hollow Dan Lin $55.00 33 790 $43450.00
Little Prince The Prince $15.00 188 9 $135.00
Lord of The Ring Johnny Dept $56.80 100 38 $2158.40
Three Little Pig Andrew Lim $89.10 290 189 $16839.90
All About Ubuntu Ubuntu Team $76.00 55 133 $10108.00
Catch Me If You Can Mary Ann $23.60 20 14 $330.40
Sad Day Mary Anne $15.00 108 24 $360.00
Hello There James B Kennedy $12.00 30 1 $12.00

Press Enter to continue
```

➤ Option 6: Show inventory summary report

```
BookDB.txt (~/Desktop/Dropbox/SIM/212 Interacting Systems/02 - Assignments/Assignment 1) - gedit

1 Harry Potter - The Half Blood Prince:J.K Rowling:40.30:10:50
2 The little Red Riding Hood:Dan Lin:40.80:20:10
3 Harry Potter - The Phoniex:J.K Rowling:50.00:30:20
4 Harry Potter - The Deathly Hollow:Dan Lin:55.00:33:790
5 Little Prince:The Prince:15.00:188:9
6 Lord of The Ring:Johnny Dept:56.80:100:38
7 Three Little Pig:Andrew Lim:89.10:290:189
8 All About Ubuntu:Ubuntu Team:76.00:55:133
9 Catch Me If You Can:Mary Ann:23.60:20:14
10 Sad Day:Mary Anne:15:108:24
11 Hello There:James B Kennedy:12:30:1
```

➤ BookDB.txt after some data processing

Summary of implementation of each module in your program

readTextFile – read data from “BookDB.txt” to arrays of attributes.

writeTextFile – write data to “BookDB.txt” from arrays of attributes.

book_exist() – Traverse through to arrays of attributes to check if a specific title with a specific author exists in the arrays. Boolean global attribute is changed and global attribute position stores the location of attribute found in the array.

add_new_book – Adds new record in the array. Checks if book author and title already exists.

remove_existing_book – Removes existing book record.

update_book_info – Updates a book record. Allows updating of all attributes of a book record. Checks whether a specific author and title exists upon changing values of either attribute.

search_book – Searches the array for a books with a specific title or author or both.

process_book_sold – Processes the number of book sold and updates the record of the book.

inventory_summary_report – Shows a complete detailed report of all book records.

press_enter – Clears screen upon pressing enter.

Reflections on program development

- Assumptions made
 - BookDB.txt given data has a ':' delimiter
 - File name is specifically "BookDB.txt"
- Difficulties faced
 - Finding commands for a specific function
 - Ensuring syntax for code is correct
 - Doing input check functions
- What could have been done better
 - Filename could be changed
- Possible enhancements in future
 - Additional options of displaying of records
 - Additional book record attributes
- What have I learnt
 - Usage of shell script language
 - Syntax and basic logical functions of shell script