# **ArrayList Library Screenshots**

#### 0 - 0

```
[jalangthinkpad arraylist-library]$ /usr/bin/env /usr/lib/jwm/java-19-openjdk/bin/java —enable-preview —XX:-ShowCodebetailsInExceptionMessages —cp /home/jalan/.config/Code/User/workspaceStorage/967c76db7c4e540e5e31afaldele09d1/redhat.java/jdt_ws/arraylist-library_2ald 898/bin Main  
Title: Book1 | Subject: Programming | Year: 1986 | Pages: 710 | Rating: 4.4  
Title: Book2 | Subject: Programming | Year: 1994 | Pages: 651 | Rating: 8.6  
Title: Book3 | Subject: Programming | Year: 1994 | Pages: 564 | Rating: 0.4  
Title: Book4 | Subject: Programming | Year: 1914 | Pages: 398 | Rating: 2.0  
Title: Book5 | Subject: Data Structures | Year: 2015 | Pages: 377 | Rating: 8.1  
Title: Book5 | Subject: Data Structures | Year: 2015 | Pages: 377 | Rating: 8.1  
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 471 | Rating: 8.3  
Title: Book8 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 3.8  
Title: Book8 | Subject: Algorithms | Year: 1994 | Pages: 99 | Rating: 3.8  
Title: Book10 | Subject: Algorithms | Year: 2008 | Pages: 292 | Rating: 6.6  
Title: Book10 | Subject: Algorithms | Year: 2008 | Pages: 292 | Rating: 8.4  
Title: Book11 | Subject: Algorithms | Year: 2008 | Pages: 293 | Rating: 8.4  
Title: Book12 | Subject: Algorithms | Year: 1992 | Pages: 293 | Rating: 8.4  
Title: Book13 | Subject: Operating Systems | Year: 2012 | Pages: 293 | Rating: 8.1  
Title: Book13 | Subject: Operating Systems | Year: 2018 | Pages: 293 | Rating: 8.1  
Title: Book16 | Subject: Gaming | Year: 1908 | Pages: 291 | Rating: 8.9  
Title: Book17 | Subject: Gaming | Year: 2017 | Pages: 391 | Pages: 391 | Rating: 8.9  
Title: Book16 | Subject: Gaming | Year: 2008 | Pages: 191 | Rating: 8.9  
Title: Book19 | Subject: Gaming | Year: 2009 | Pages: 191 | Rating: 8.9  
Title: Book19 | Subject: Gaming | Year: 2001 | Pages: 301 | P
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Title: Book16 | Subject: Operating Systems | Year: 2013 | Pages: 850 | Rating: 2.3
Title: Book17 | Subject: Gaming | Year: 2009 | Pages: 143 | Rating: 8.9
Title: Book18 | Subject: Gaming | Year: 2099 | Pages: 917 | Rating: 4.5
Title: Book19 | Subject: Gaming | Year: 1998 | Pages: 996 | Rating: 3.2
Title: Book20 | Subject: Gaming | Year: 2012 | Pages: 1911 | Rating: 9.4

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by Length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Face of the abook
7. Seed of the abook
8. Exit
1. Title: Book1 | Subject: Programming | Year: 1986 | Pages: 710 | Rating: 4.4
Title: Book2 | Subject: Programming | Year: 2016 | Pages: 651 | Rating: 8.6
Title: Book3 | Subject: Programming | Year: 2016 | Pages: 651 | Rating: 8.6
Title: Book3 | Subject: Programming | Year: 2018 | Pages: 654 | Rating: 9.4
Title: Book4 | Subject: Programming | Year: 2018 | Pages: 308 | Rating: 2.0
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 309 | Rating: 2.7
Title: Book6 | Subject: Data Structures | Year: 2018 | Pages: 307 | Rating: 8.1
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 307 | Rating: 8.1
Title: Book6 | Subject: Data Structures | Year: 2018 | Pages: 307 | Rating: 8.1
Title: Book8 | Subject: Data Structures | Year: 2018 | Pages: 307 | Rating: 8.1
Title: Book8 | Subject: Algorithms | Year: 1997 | Pages: 377 | Rating: 8.1
Title: Book1 | Subject: Algorithms | Year: 1998 | Pages: 529 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 1997 | Pages: 378 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 1998 | Pages: 529 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 1998 | Pages: 529 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 1998 | Pages: 529 | Rating: 8.4
Title: Book1 | Subject: Gaming | Year: 1998 | Pages: 1991 | Rating: 4.9
Title: Book1 | Subject: Gaming | Year: 1998 | Pages: 1991 | Rating: 4.9
Title: Book1 | Subject: Gaming | Year: 1991 | Pages: 1991
```

```
Title: Book16 | Subject: Operating Systems | Year: 2013 | Pages: 850 | Rating: 2.3
Title: Book17 | Subject: Gaming | Year: 2009 | Pages: 143 | Rating: 8.9
Title: Book18 | Subject: Gaming | Year: 2009 | Pages: 917 | Rating: 4.5
Title: Book19 | Subject: Gaming | Year: 2012 | Pages: 191 | Rating: 4.5
Title: Book20 | Subject: Gaming | Year: 2012 | Pages: 191 | Rating: 9.4

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Failer Book15 | Subject: Operating Systems | Year: 1982 | Pages: 520 | Rating: 1.7
Title: Book15 | Subject: Algorithms | Year: 1984 | Pages: 92 | Rating: 6.6
Title: Book1 | Subject: Algorithms | Year: 1984 | Pages: 92 | Rating: 6.6
Title: Book1 | Subject: Algorithms | Year: 1984 | Pages: 92 | Rating: 4.4
Title: Book1 | Subject: Algorithms | Year: 1986 | Pages: 710 | Rating: 4.4
Title: Book1 | Subject: Algorithms | Year: 1997 | Pages: 471 | Rating: 0.4
Title: Book3 | Subject: Both State Structures | Year: 1997 | Pages: 471 | Rating: 0.3
Title: Book3 | Subject: Bata Structures | Year: 1997 | Pages: 471 | Rating: 3.2
Title: Book1 | Subject: Bata Structures | Year: 1997 | Pages: 471 | Rating: 3.2
Title: Book1 | Subject: Chain my | Year: 1998 | Pages: 96 | Rating: 3.2
Title: Book1 | Subject: Chain my | Year: 1998 | Pages: 98 | Rating: 3.8
Title: Book1 | Subject: Gaming | Year: 2002 | Pages: 78 | Rating: 3.8
Title: Book1 | Subject: Gaming | Year: 2003 | Pages: 89 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 2008 | Pages: 578 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 2001 | Pages: 85 | Rating: 8.4
Title: Book1 | Subject: Algorithms | Year: 2001 | Pages: 85 | Rating: 8.4
Title: Book1 | Subject: Operating Systems | Year: 2017 | Pages: 578 | Rating: 8.4
Title: Book1 | Subject: Operating Systems | Year: 2017 | Pages: 589 | Rating: 8.4
Title: Book5 | Subject: Operating Systems | Year: 2018 | Pages: 578 | Rating: 8.7
Title: Book5 | Subject: Operating Systems | Year: 2018 | Pages
```

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Title: Book16 | Subject: Operating Systems | Year: 2013 | Pages: 850 | Rating: 2.3
Title: Book4 | Subject: Data Structures | Year: 2015 | Pages: 377 | Rating: 8.1
Title: Book2 | Subject: Data Structures | Year: 2016 | Pages: 551 | Rating: 8.6
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 577 | Rating: 8.7

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by learning (ascending)
3. Sort by learning (ascending)
3. Sort by the subject: Data Structures | Year: 2018 | Pages: 599 | Rating: 2.7

Menu
1. List all books
3. Filter by subject: Data Structures | Year: 2018 | Pages: 92 | Rating: 6.6
5. Filter by subject: Data Structures | Year: 2081 | Pages: 92 | Rating: 6.6
Title: Book9 | Subject: Data Structures | Year: 2081 | Pages: 98 | Rating: 3.8
Title: Book9 | Subject: Gaming | Year: 2081 | Pages: 98 | Rating: 3.9
Title: Book17 | Subject: Gaming | Year: 2017 | Pages: 118 | Rating: 9.4
Title: Book20 | Subject: Gaming | Year: 2017 | Pages: 118 | Rating: 9.4
Title: Book30 | Subject: Data Structures | Year: 1992 | Pages: 299 | Rating: 9.7
Title: Book5 | Subject: Data Structures | Year: 2017 | Pages: 377 | Rating: 8.1
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 377 | Rating: 8.1
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 377 | Rating: 8.1
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 520 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.7
Title: Book1 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.7
Title: Book1 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.7
Title: Book1 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.4
Title: Book1 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.4
Title: Book1 | Subject: Operating Systems | Year: 2018 | Pages: 520 | Rating: 1.4
Title: Book1 | Subject: Gaming | Year: 2016 | Pages: 521 | Rating: 3.6
Title: B
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Title: Bookl3 | Subject: Operating Systems | Year: 2002 | Pages: 758 | Rating: 10.0
Title: Bookl0 | Subject: Operating Systems | Year: 2013 | Pages: 850 | Rating: 2.3
Title: Bookl0 | Subject: Algorithms | Year: 2018 | Pages: 956 | Rating: 2.4
Title: Bookl3 | Subject: Gaming | Year: 1998 | Pages: 996 | Rating: 3.2
Title: Bookl3 | Subject: Gaming | Year: 2089 | Pages: 996 | Rating: 3.2

Menu

1. Sort by year (ascending)
3. Sort by rating (descending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Exit
Choose an option: 4
Title: Bookl3 | Subject: Operating Systems | Year: 2002 | Pages: 758 | Rating: 10.0
Title: Bookl2 | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7
Title: Bookl7 | Subject: Gaming | Year: 2016 | Pages: 511 | Rating: 9.4
Title: Bookl7 | Subject: Gaming | Year: 2016 | Pages: 511 | Rating: 8.6
Title: Bookl7 | Subject: Algorithms | Year: 2016 | Pages: 578 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2016 | Pages: 578 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2016 | Pages: 578 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2016 | Pages: 578 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2016 | Pages: 578 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2016 | Pages: 578 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2017 | Pages: 377 | Rating: 8.1
Title: Bookl | Subject: Algorithms | Year: 2018 | Pages: 978 | Rating: 8.6
Title: Bookl | Subject: Algorithms | Year: 2018 | Pages: 978 | Rating: 8.1
Title: Bookl | Subject: Algorithms | Year: 2018 | Pages: 978 | Rating: 8.7
Title: Bookl | Subject: Algorithms | Year: 2018 | Pages: 988 | Rating: 8.7
Title: Bookl | Subject: Algorithms | Year: 2018 | Pages: 988 | Rating: 8.7
Title: Bookl | Subject: Algorithms | Year: 2018 | Pages: 988 | Rating: 8.7
Title: Bookl | Subject: Data Structures | Year: 2018 | Pages: 988 | Rating: 3.8
Title: Bookl | Subject: Data Structures | Year: 2018 | Pages: 988 | Rating: 3.8
Title: Bookl | Subject: Data Structure
```

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Title: Book12 | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7
Title: Book24 | Subject: Gaming | Year: 2081 | Pages: 131 | Rating: 9.4
Title: Book2 | Subject: Gaming | Year: 2081 | Pages: 131 | Rating: 8.6
Title: Book2 | Subject: Algorithms | Year: 2081 | Pages: 501 | Rating: 8.6
Title: Book3 | Subject: Algorithms | Year: 2081 | Pages: 505 | Rating: 8.6
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 377 | Rating: 8.4
Title: Book6 | Subject: Algorithms | Year: 2088 | Pages: 327 | Rating: 8.1
Title: Book8 | Subject: Algorithms | Year: 2084 | Pages: 292 | Rating: 6.6
Title: Book8 | Subject: Algorithms | Year: 2084 | Pages: 292 | Rating: 6.6
Title: Book8 | Subject: Algorithms | Year: 2084 | Pages: 928 | Rating: 4.5
Title: Book8 | Subject: Data Structures | Year: 2087 | Pages: 387 | Rating: 4.5
Title: Book8 | Subject: Gaming | Year: 2089 | Pages: 917 | Rating: 4.5
Title: Book8 | Subject: Data Structures | Year: 2081 | Pages: 388 | Rating: 2.7
Title: Book8 | Subject: Data Structures | Year: 2081 | Pages: 389 | Rating: 2.7
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 389 | Rating: 2.3
Title: Book5 | Subject: Data Structures | Year: 2014 | Pages: 388 | Rating: 2.2
Title: Book5 | Subject: Data Structures | Year: 2014 | Pages: 388 | Rating: 2.0
Title: Book5 | Subject: Data Structures | Year: 1997 | Pages: 471 | Rating: 0.4
Title: Book5 | Subject: Data Structures | Year: 1997 | Pages: 471 | Rating: 0.4
Title: Book5 | Subject: Data Structures | Year: 1997 | Pages: 377 | Rating: 0.1
Title: Book5 | Subject: Data Structures | Year: 2015 | Pages: 377 | Rating: 0.1
Title: Book6 | Subject: Data Structures | Year: 2018 | Pages: 398 | Rating: 2.7
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 371 | Rating: 0.3
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 371 | Rating: 0.3
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 371 | Rating: 0.3
Title: Book7 | Subject: Data Structures | Year: 2015 | Pages: 399 | Rating: 2.7
Title: Book7 | Subject: Da
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Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 509 | Rating: 2.7
Title: Book6 | Subject: Operating Systems | Year: 2013 | Pages: 850 | Rating: 2.0
Title: Book6 | Subject: Operating Systems | Year: 2014 | Pages: 388 | Rating: 2.0
Title: Book5 | Subject: Operating Systems | Year: 1982 | Pages: 520 | Rating: 1.7
Title: Book3 | Subject: Programming | Year: 1984 | Pages: 526 | Rating: 1.7
Title: Book6 | Subject: Data Structures | Year: 1997 | Pages: 471 | Rating: 0.3

Menu

1. List all books
2. Sort by year (ascending)
3. Sort by Hength (ascending)
4. Sort by Fating (descending)
5. Filter book6
5. Saerch for a book
7. And book8
6. Saerch for a book
7. And book8
7. And book8
7. And book8
7. Sort by Subject: Data Structures | Year: 2015 | Pages: 377 | Rating: 8.1
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 98 | Rating: 2.7
Title: Book6 | Subject: Data Structures | Year: 2017 | Pages: 98 | Rating: 3.8
Title: Book6 | Subject: Data Structures | Year: 2017 | Pages: 99 | Rating: 2.7
Title: Book6 | Subject: Data Structures | Year: 1997 | Pages: 99 | Rating: 2.7
Title: Book7 | Subject: Data Structures | Year: 1997 | Pages: 471 | Rating: 0.3

Menu
1. List all books
2. Sort by Year (ascending)
3. Sort by Hength (ascending)
4. Sort by Fating (descending)
5. Filter by subject
6. Search for a book
7. And a book
8. Exit
Choose an option: 6
Enter Litle: book12 | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7

Menu
1. List all books
2. Sort by Year (ascending)
3. Sort by Hength (ascending)
4. Sort by Hength (ascending)
5. Filter by subject
6. Search for a book
7. And a book
8. Exit
Choose an option: 6
Enter Litle: Book8 | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7

Menu
6. Sort by Pages an option: 6
Enter Citle: Book8 | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7

Menu
6. Sort by Pages an option: 6
Enter Citle: Book8 | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7

Menu
6. Sort by Pages an option: 6
Enter Citle: Book8 | Subject: Algorithms |
```

```
4 books found with subject data structures:
Title: Book6 | Subject: Data Structures | Year: 2015 | Pages: 98 | Rating: 3.8
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 99 | Rating: 3.8
Title: Book5 | Subject: Data Structures | Year: 2018 | Pages: 99 | Rating: 2.7
Title: Book7 | Subject: Data Structures | Year: 1997 | Pages: 471 | Rating: 0.3

Menu
1. List all book8
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Rot | Subject | Subject: Algorithms | Year: 1992 | Pages: 299 | Rating: 9.7

Menu
1. List all book2
2. Sort by year (ascending)
3. Sort by tength (ascending)
3. Sort by tength (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Exit
Choose an option: 7
Tenter title: besign Patterns
Enter subject: 00P
Enter year: 1994
Enter pages: 395
Enter rating (double): 10
not enough space, resizing ArrayList
Book added: Title: Design Patterns | Subject: 00P | Year: 1994 | Pages: 395 | Rating: 10.0

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by tength (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Exit
6. Search for a book
7. Add a book
8. Exit
6. Search for a book
7. Add a book
8. Exit
6. Search for a book
7. Add a book
8. Exit
6. Search for a book
7. Add a book
8. Exit
6. Search for a book
7. Add a book
8. Exit
6. Search for a book
7. Add a book
8. Exit
```

## 0-7-1

```
Enter pages: 395
Enter rating (double): 10
not enough space, resizing ArrayList
Book added: Title: Design Patterns | Subject: 00P | Year: 1994 | Pages: 395 | Rating: 10.0

Menu

1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by theight (ascending)
5. Sort by theight (ascending)
6. Search or a book
7. Add a book
8. Exit
Choose an option: 1

Title: Book13 | Subject: Operating Systems | Year: 2002 | Pages: 758 | Rating: 10.0

Title: Book22 | Subject: Gaming | Year: 2012 | Pages: 299 | Rating: 9.7

Title: Book20 | Subject: Gaming | Year: 2012 | Pages: 191 | Rating: 9.4

Title: Book21 | Subject: Gaming | Year: 2012 | Pages: 191 | Rating: 9.4

Title: Book21 | Subject: Gaming | Year: 2008 | Pages: 191 | Rating: 8.6

Title: Book21 | Subject: Topgramming | Year: 2015 | Pages: 777 | Rating: 8.6

Title: Book31 | Subject: Algorithms | Year: 2015 | Pages: 577 | Rating: 8.1

Title: Book30 | Subject: Algorithms | Year: 2016 | Pages: 636 | Rating: 8.1

Title: Book30 | Subject: Algorithms | Year: 2016 | Pages: 92 | Rating: 6.6

Title: Book31 | Subject: Algorithms | Year: 2017 | Pages: 927 | Rating: 4.5

Title: Book31 | Subject: Gaming | Year: 1984 | Pages: 92 | Rating: 4.5

Title: Book31 | Subject: Data Structures | Year: 2011 | Pages: 98 | Rating: 4.5

Title: Book31 | Subject: Data Structures | Year: 2011 | Pages: 98 | Rating: 4.5

Title: Book31 | Subject: Data Structures | Year: 2011 | Pages: 98 | Rating: 4.5

Title: Book31 | Subject: Data Structures | Year: 2011 | Pages: 98 | Rating: 4.5

Title: Book31 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 4.7

Title: Book31 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 4.7

Title: Book31 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 3.2

Title: Book3 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 3.7

Title: Book3 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 3.7

Title: Book3 | Subject: Data Structures | Year: 2019 | Pages: 98 | Rating: 3.0

Title: Book3 | Subject: Da
```

```
Not enough space, resizing ArrayList
Book added: Title: Design Patterns | Subject: OOP | Year: 1994 | Pages: 395 | Rating: 10.0

Menu

1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Add a book
8. Descarch for a book
7. Subject: Operating Systems | Year: 2002 | Pages: 758 | Rating: 10.0

Title: Book12 | Subject: Gaming | Year: 2012 | Pages: 299 | Rating: 9.7

Title: Book20 | Subject: Gaming | Year: 2012 | Pages: 191 | Rating: 9.4

Title: Book17 | Subject: Gaming | Year: 2012 | Pages: 191 | Rating: 9.4

Title: Book17 | Subject: Algorithms | Year: 2008 | Pages: 151 | Rating: 8.6

Title: Book1 | Subject: Algorithms | Year: 2008 | Pages: 529 | Rating: 8.6

Title: Book6 | Subject: Descarting Systems | Year: 2010 | Pages: 977 | Rating: 8.1

Title: Book1 | Subject: Algorithms | Year: 1984 | Pages: 97 | Rating: 6.4

Title: Book18 | Subject: Gaming | Year: 2009 | Pages: 97 | Rating: 4.5

Title: Book1 | Subject: Gaming | Year: 1996 | Pages: 97 | Rating: 4.5

Title: Book1 | Subject: Gaming | Year: 1998 | Pages: 996 | Rating: 3.2

Title: Book1 | Subject: Operating Systems | Year: 2013 | Pages: 996 | Rating: 2.7

Title: Book1 | Subject: Operating Systems | Year: 2013 | Pages: 996 | Rating: 2.7

Title: Book1 | Subject: Operating Systems | Year: 1997 | Pages: 997 | Rating: 3.8

Title: Book1 | Subject: Operating Systems | Year: 1997 | Pages: 998 | Rating: 2.7

Title: Book1 | Subject: Operating Systems | Year: 1997 | Pages: 998 | Rating: 2.7

Title: Book3 | Subject: Operating Systems | Year: 1997 | Pages: 998 | Rating: 2.7

Title: Book1 | Subject: Operating Systems | Year: 1997 | Pages: 398 | Rating: 2.7

Title: Book3 | Subject: Operating Systems | Year: 1997 | Pages: 398
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Title: Book16 | Subject: Operating Systems | Year: 1997 | Pages: 803 | Rating: 6.0 |
Title: Book18 | Subject: Gaming | Year: 1995 | Pages: 719 | Rating: 4.5 |
Title: Book18 | Subject: Gaming | Year: 1998 | Pages: 239 | Rating: 4.5 |
Title: Book19 | Subject: Gaming | Year: 1988 | Pages: 211 | Rating: 7.1 |
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 11 | Rating: 7.1 |
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 11 | Rating: 7.1 |
Henu

1. List all book

2. Sort by rating (descending)
3. Sort by rating (descending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a Book
7. Add a Book
8. Exit
Choose an option: 1
Title: Book1 | Subject: Programming | Year: 2003 | Pages: 429 | Rating: 1.9 |
Title: Book2 | Subject: Programming | Year: 2014 | Pages: 591 | Rating: 8.5 |
Title: Book3 | Subject: Data Structures | Year: 2027 | Pages: 605 | Rating: 1.9 |
Title: Book4 | Subject: Data Structures | Year: 2027 | Pages: 605 | Rating: 1.9 |
Title: Book5 | Subject: Data Structures | Year: 2027 | Pages: 373 | Rating: 3.9 |
Title: Book6 | Subject: Data Structures | Year: 2027 | Pages: 373 | Rating: 3.9 |
Title: Book6 | Subject: Data Structures | Year: 2027 | Pages: 373 | Rating: 3.9 |
Title: Book6 | Subject: Data Structures | Year: 2027 | Pages: 373 | Rating: 8.1 |
Title: Book6 | Subject: Data Structures | Year: 2027 | Pages: 484 | Rating: 8.1 |
Title: Book10 | Subject: Algorithms | Year: 2087 | Pages: 128 | Rating: 8.1 |
Title: Book10 | Subject: Algorithms | Year: 2087 | Pages: 128 | Rating: 8.1 |
Title: Book10 | Subject: Algorithms | Year: 1998 | Pages: 128 | Rating: 8.1 |
Title: Book10 | Subject: Data Structures | Year: 2027 | Pages: 428 | Rating: 8.1 |
Title: Book11 | Subject: Algorithms | Year: 1998 | Pages: 128 | Rating: 8.1 |
Title: Book12 | Subject: Algorithms | Year: 1998 | Pages: 128 | Rating: 8.1 |
Title: Book13 | Subject: Data Structures | Year: 2027 | Pages: 428 | Rating: 4.2 |
Title: Book14 | Subject: Data Structures | Year: 2027 | Pages: 428 | Rating: 4.2 |
Title: Book15 | Subject
```

```
Title: Book16 | Subject: Operating Systems | Year: 1997 | Pages: 803 | Rating: 6.0 |
Title: Book17 | Subject: Gaming | Year: 1995 | Pages: 719 | Rating: 4.5 |
Title: Book18 | Subject: Gaming | Year: 1998 | Pages: 239 | Rating: 4.5 |
Title: Book20 | Subject: Gaming | Year: 1988 | Pages: 371 | Rating: 7.1 |
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 141 | Rating: 7.1 |
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 141 | Rating: 7.1 |
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 141 | Rating: 7.1 |
Title: Book14 | Subject | Gaming | Year: 1982 | Pages: 662 | Rating: 3.2 |
Title: Book14 | Subject: Gaming | Year: 1985 | Pages: 662 | Rating: 3.2 |
Title: Book14 | Subject: Gaming | Year: 1985 | Pages: 719 | Rating: 4.2 |
Title: Book15 | Subject: Gaming | Year: 1988 | Pages: 719 | Rating: 7.1 |
Title: Book19 | Subject: Gaming | Year: 1988 | Pages: 719 | Rating: 7.1 |
Title: Book19 | Subject: Gaming | Year: 1988 | Pages: 719 | Rating: 7.1 |
Title: Book19 | Subject: Gaming | Year: 1988 | Pages: 719 | Rating: 7.1 |
Title: Book19 | Subject: Gaming | Year: 1989 | Pages: 719 | Rating: 7.1 |
Title: Book19 | Subject: Gaming | Year: 1989 | Pages: 719 | Rating: 7.1 |
Title: Book10 | Subject: Algorithms | Year: 1989 | Pages: 351 | Rating: 7.5 |
Title: Book10 | Subject: Gaming | Year: 1989 | Pages: 351 | Rating: 7.5 |
Title: Book10 | Subject: Algorithms | Year: 1999 | Pages: 359 | Rating: 3.9 |
Title: Book11 | Subject: Algorithms | Year: 1992 | Pages: 359 | Rating: 4.5 |
Title: Book10 | Subject: Operating Systems | Year: 1997 | Pages: 803 | Rating: 4.5 |
Title: Book10 | Subject: Departing Systems | Year: 1998 | Pages: 215 | Rating: 4.6 |
Title: Book20 | Subject: Gaming | Year: 2007 | Pages: 379 | Rating: 4.6 |
Title: Book20 | Subject: Gaming | Year: 2007 | Pages: 379 | Rating: 4.6 |
Title: Book20 | Subject: Gaming | Year: 2007 | Pages: 379 | Rating: 4.6 |
Title: Book20 | Subject: Gaming | Year: 2007 | Pages: 379 | Rating: 4.6 |
Title: Book20 | Subject: Data Structures | Year: 2007 | Pages: 379 | Rating:
```

```
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 141 | Rating: 1.4
Title: Book8 | Subject: Data Structures | Year: 2007 | Pages: 281 | Rating: 1.9
Title: Book8 | Subject: Programming | Year: 2018 | Pages: 605 | Rating: 1.9
Title: Book10 | Subject: Algorithms | Year: 2018 | Pages: 615 | Rating: 1.9
Title: Book10 | Subject: Algorithms | Year: 2018 | Pages: 125 | Rating: 8.1

Menu

1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Cooks an option: 3
Title: Book11 | Subject: Algorithms | Year: 1996 | Pages: 115 | Rating: 0.9
Title: Book12 | Subject: Gaming | Year: 2018 | Pages: 126 | Rating: 8.1
Title: Book20 | Subject: Gaming | Year: 2018 | Pages: 126 | Rating: 8.1
Title: Book31 | Subject: Gaming | Year: 2018 | Pages: 126 | Rating: 8.1
Title: Book31 | Subject: Gaming | Year: 2018 | Pages: 127 | Rating: 1.4
Title: Book31 | Subject: Gaming | Year: 1999 | Pages: 219 | Rating: 9.2
Title: Book10 | Subject: Gaming | Year: 1998 | Pages: 229 | Rating: 1.5
Title: Book10 | Subject: Gaming | Year: 1993 | Pages: 239 | Rating: 1.5
Title: Book10 | Subject: Algorithms | Year: 1998 | Pages: 239 | Rating: 1.7
Title: Book10 | Subject: Algorithms | Year: 1998 | Pages: 371 | Rating: 1.7
Title: Book11 | Subject: Algorithms | Year: 1998 | Pages: 371 | Rating: 1.7
Title: Book12 | Subject: Algorithms | Year: 1998 | Pages: 371 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2002 | Pages: 371 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2003 | Pages: 371 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2008 | Pages: 371 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2008 | Pages: 371 | Rating: 1.7
Title: Book15 | Subject: Operating Systems | Year: 2008 | Pages: 371 | Rating: 1.7
Title: Book5 | Subject: Operating Systems | Year: 2008 | Pages: 371 | Rating: 1.7
Title: Book6 | Subject: Operating Systems | Year: 2008 | Pages: 371 | Rating: 1.7
Title: Book
```

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Title: Book6 | Subject: Data Structures | Year: 1992 | Pages: 659 | Rating: 3.9
Title: Book14 | Subject: Operating Systems | Year: 1982 | Pages: 662 | Rating: 3.2
Title: Book5 | Subject: Charles Tructures | Year: 2004 | Pages: 766 | Rating: 4.2
Title: Book5 | Subject: Data Structures | Year: 2004 | Pages: 766 | Rating: 6.0

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by Length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Charles Book6 | Subject: Operating Systems | Year: 1997 | Pages: 219 | Rating: 9.2
Title: Book13 | Subject: Operating Systems | Year: 1999 | Pages: 219 | Rating: 9.2
Title: Book3 | Subject: Operating Systems | Year: 1999 | Pages: 219 | Rating: 8.5
Title: Book3 | Subject: Operating Systems | Year: 2004 | Pages: 331 | Rating: 8.5
Title: Book18 | Subject: Algorithms | Year: 2004 | Pages: 373 | Rating: 8.1
Title: Book19 | Subject: Charles Tructures | Year: 2002 | Pages: 373 | Rating: 8.1
Title: Book19 | Subject: Gaming | Year: 1908 | Pages: 371 | Rating: 7.1
Title: Book19 | Subject: Charles Tructures | Year: 2002 | Pages: 373 | Rating: 8.1
Title: Book19 | Subject: Gaming | Year: 1908 | Pages: 371 | Rating: 7.1
Title: Book10 | Subject: Algorithms | Year: 1908 | Pages: 371 | Rating: 7.1
Title: Book10 | Subject: Algorithms | Year: 1908 | Pages: 371 | Rating: 7.5
Title: Book10 | Subject: Algorithms | Year: 1908 | Pages: 371 | Rating: 7.5
Title: Book10 | Subject: Algorithms | Year: 1908 | Pages: 371 | Rating: 7.5
Title: Book11 | Subject: Operating Systems | Year: 1908 | Pages: 303 | Rating: 5.5
Title: Book11 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 7.6
Title: Book11 | Subject: Operating Systems | Year: 1908 | Pages: 105 | Rating: 7.6
Title: Book11 | Subject: Operating Systems | Year: 1909 | Pages: 105 | Rating: 1.9
Title: Book10 | Subject: Operating Systems | Year: 1909 | Pages: 105 | Rating: 1.9
Title: Book10 | Subject: Operating Systems | Year: 1909 | Pages: 105 | Rating: 1.9
Title: Book10 | Subject: Operating Systems | Year: 1908 | Pages: 1
```

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Title: Bookl | Subject: Programming | Year: 2003 | Pages: 429 | Rating: 1.9
Title: Bookl | Subject: Programming | Year: 2107 | Pages: 665 | Rating: 1.9
Title: Bookl | Subject: Operating Systems | Year: 1918 | Pages: 434 | Rating: 1.7
Title: Book20 | Subject: Gaming | Year: 2005 | Pages: 141 | Rating: 1.4
Title: Book11 | Subject: Algorithms | Year: 2007 | Pages: 148 | Rating: 1.4

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Exit
Title: Bookl3 | Subject: Operating Systems | Year: 1909 | Pages: 219 | Rating: 9.2
Title: Bookl3 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl3 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl4 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl5 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Rating: 6.0
Title: Bookl6 | Subject: Operating Systems | Year: 1907 | Pages: 803 | Ratin
```

```
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. And book
7. And book
8. And book
9. Compare the subject antenna theory
9. books found with subject antenna theory:

Menu
1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Compare the subject subject
7. Social subject
8. Exit
6. Social subject
8. Exit
7. Social subject
8. Exit
8. Sort by length (ascending)
9. Sort by rating (descending)
9. Sort by rating (descending)
9. Sort by length (ascending)
9. Sort by subject ascending)
9. Sort by subject ascending)
9. Sort by subject ascending)
9. Sort by ascending (ascending)
9. Sort by ascending (ascending
```

```
7. Add a book
8. Exit
Choose an option: 6
Enter title: book18 | Subject: Gaming | Year: 1993 | Pages: 239 | Rating: 4.5

Menu
1. List all book
2. Sort by year (ascending)
3. Sort by tength (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Filter by subject
6. Search for a book
7. Add hook
8. Exit
Choose an option: 6
Enter title: nineteen eighty-four
No book found with title nineteen eighty-four
No book found with title nineteen eighty-four
Menu
1. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Sort by rating (descending)
5. Filter by subject
6. Search for a book
7. Add a book
8. Exit
Choose an option: 7
Enter title: implementation Patterns
Enter subject: Programming
Enter year: 2000
Enter pages: 130
Enter rating (double): 10.0
not enough space, resizing ArrayList
Book added: Title: Implementation Patterns | Subject: Programming | Year: 2007 | Pages: 130 | Rating: 10.0

Menu
1. List all books
2. Sort by year (ascending)
4. Sort by rating (descending)
5. Filter by tyear (ascending)
6. Sort by rating (descending)
7. Filter by subject
8. Search for a book
7. Add a book
8. Exit
Choose an option: 6
Exit
Choose an
```

## 1-7-1

```
Enter pages: 130
Enter rating (double): 10.0
Enter rating (double): 10.0
Enter rating (double): 10.0
Enter rating (double): 10.0
Enter pages: 130 | Rating: 10.0

Menu

1. List all books
2. Sort by year (ascending)
3. Sort by Hength (ascending)
4. Sort by Hength (ascending)
5. Sort by Hength (ascending)
6. Search of a book
7. Add a book
8. Exit
Choose an option: 1
Fille: Books | Subject: Operating Systems | Year: 1999 | Pages: 219 | Rating: 9.2
Fille: Books | Subject: Frogramming | Year: 2014 | Pages: 591 | Rating: 8.5
Fille: Books | Subject: Frogramming | Year: 1989 | Pages: 131 | Rating: 8.3
Fille: Books | Subject: Algorithms | Year: 2018 | Pages: 137 | Rating: 8.1
Fille: Books | Subject: Algorithms | Year: 2018 | Pages: 371 | Rating: 7.1
Fille: Books | Subject: Algorithms | Year: 1988 | Pages: 371 | Rating: 7.1
Fille: Books | Subject: Algorithms | Year: 1988 | Pages: 138 | Rating: 6.0
Fille: Books | Subject: Algorithms | Year: 1988 | Pages: 138 | Rating: 6.0
Fille: Books | Subject: Algorithms | Year: 1989 | Pages: 139 | Rating: 4.6
Fille: Books | Subject: Algorithms | Year: 1989 | Pages: 139 | Rating: 4.6
Fille: Books | Subject: Algorithms | Year: 1988 | Pages: 139 | Rating: 4.6
Fille: Books | Subject: Gaming | Year: 1998 | Pages: 139 | Rating: 4.6
Fille: Books | Subject: Gaming | Year: 1998 | Pages: 139 | Rating: 4.6
Fille: Books | Subject: Algorithms | Year: 1998 | Pages: 139 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 69 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 69 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 60 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 60 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 60 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 60 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages: 60 | Rating: 4.6
Fille: Books | Subject: Operating Systems | Year: 1992 | Pages
```

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Nenu
I. List all books
2. Sort by year (ascending)
3. Sort by length (ascending)
4. Siby varing (descending)
4. Siby varing (descending)
5. Sort by year abook
7. Sooks by beingth (ascending)
6. Sort by year abook
7. Sooks by subject: Operating Systems | Year: 1999 | Pages: 219 | Rating: 9.2
Fitle: Books | Subject: Programming | Year: 2014 | Pages: 591 | Rating: 8.5
Fitle: Books | Subject: Programming | Year: 2018 | Pages: 219 | Rating: 8.3
Fitle: Books | Subject: Algorithms | Year: 2018 | Pages: 216 | Rating: 8.1
Fitle: Books | Subject: Data Structures | Year: 2021 | Pages: 373 | Rating: 8.1
Fitle: Books | Subject: Data Structures | Year: 2021 | Pages: 373 | Rating: 8.1
Fitle: Books | Subject: Algorithms | Year: 1998 | Pages: 371 | Rating: 7.1
Fitle: Books | Subject: Data Structures | Year: 2044 | Pages: 683 | Rating: 6.0
Fitle: Books | Subject: Data Structures | Year: 1997 | Pages: 803 | Rating: 6.0
Fitle: Books | Subject: Data Structures | Year: 1997 | Pages: 803 | Rating: 6.0
Fitle: Books | Subject: Data Structures | Year: 1997 | Pages: 803 | Rating: 6.0
Fitle: Books | Subject: Data Structures | Year: 1997 | Pages: 803 | Rating: 4.6
Fitle: Books | Subject: Gaming | Year: 1998 | Pages: 719 | Rating: 4.6
Fitle: Books | Subject: Data Structures | Year: 2097 | Pages: 803 | Rating: 4.6
Fitle: Books | Subject: Data Structures | Year: 1998 | Pages: 209 | Rating: 4.6
Fitle: Books | Subject: Data Structures | Year: 1998 | Pages: 209 | Rating: 4.6
Fitle: Books | Subject: Operating Systems | Year: 1992 | Pages: 509 | Rating: 4.6
Fitle: Books | Subject: Operating Systems | Year: 1992 | Pages: 509 | Rating: 1.9
Fitle: Books | Subject: Operating Systems | Year: 1997 | Pages: 607 | Rating: 1.9
Fitle: Books | Subject: Operating Systems | Year: 2007 | Pages: 607 | Rating: 1.9
Fitle: Books | Subject: Operating Systems | Year: 2007 | Pages: 608 | Rating: 1.7
Fitle: Books | Subject: Departing Systems | Year: 2007 | Pages: 607 | Rating: 1.9
Fitle: Books | Subject: Operating Systems | Year: 2007 | Pages: 608 | Rating: 1.7
Fitle:
```