```
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:3
                                                                                                                                                                PUBLISH YEAR
                                                                                            AUTHOR
Total
AUTHOR
Weiss, Mark
Mailer, Norman
Mailer, Norman
Rosen, Kenneth
Twain, Mark
Twain, Mark
Gaiman, Neil
Pratchett, Terry
War and Peace
Data Structures & Problem Solving Using Java
The Naked & The Dead
                                                                                                                                    978-0199232765
                                                                                                                                                                1869
                                                                                                                                                                                           151
9
72
69
21
144
135
18
                                                                                                                                   0-321-54140-5
978-0312265052
                                                                                                                                                                2011
                                                                                                                                                                 1948
Barbary Shore
Discrete Mathematics and Its Applications
                                                                                                                                    0375700390
                                                                                                                                                                 1951
                                                                                                                                    9780073229720
                                                                                                                                                                 1998
 The Adventures of Tom Sawyer
Adventures of Huckleberry Finn
American Gods
                                                                                                                                                                1876
1885
                                                                                                                                    9780143039563
                                                                                                                                                                2002
                                                                                                                                   0-380-97365-0
                                                                                                                                   0-86140-324-X
0-575-04171-4
 The Colour of Magic
                                                                                                                                                                 1983
                                                                                                                                                                                           33
41
33
 Mort
                                                                                             Pratchett, Terry
                                                                                                                                                                1987
The Hitchhiker's Guide to the Galaxy
Dirk Gently's Holistic Detective Agency
                                                                                                                                    978-0345391803
                                                                                             Adams, Douglas
                                                                                                                                                                1979
                                                                                             Adams, Douglas
                                                                                                                                    0-671-69267-4
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:1
Please enter the details of the book you want to add to the library
Enter the title of the book:
Thinking in Java
Enter the first name of the author:
 Bruce
 Enter the last name of the author:
 Eckel
 Enter the ISBN of the book:
 978-0131872486
Enter the publication date (YYYY-MM-DD) 2006-02-20
Welcome to the Arcadia Library.

Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:3
 TITLE
                                                                                             AUTHOR
                                                                                                                                    ISBN
                                                                                                                                                                PUBLISH YEAR
                                                                                            AUTHOR
Tolstoy, Leo
Weiss, Mark
Mailer, Norman
Mailer, Norman
Rosen, Kenneth
Twain, Mark
Twain, Mark
Gaiman, Neil
Pratchett, Terry
Adams, Douqlas
 War and Peace
                                                                                                                                    978-0199232765
                                                                                                                                                                1869
Data Structures & Problem Solving Using Java
The Naked & The Dead
Barbary Shore
Discrete Mathematics and Its Applications
                                                                                                                                   0-321-54140-5
978-0312265052
0375700390
                                                                                                                                                                2011
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72
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135
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                                                                                                                                                                 1951
                                                                                                                                    9780073229720
                                                                                                                                                                 1998
The Adventures of Tom Sawyer
Adventures of Huckleberry Finn
American Gods
The Colour of Magic
                                                                                                                                    9780143039563
                                                                                                                                                                1876
                                                                                                                                                                 1885
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37
33
                                                                                                                                                                2002
                                                                                                                                   0-380-97365-0
                                                                                                                                    0-86140-324-X
                                                                                                                                                                 1983
Mort
The Hitchhiker's Guide to the Galaxy
Dirk Gently's Holistic Detective Agency
Thinking in Java
                                                                                                                                   0-575-04171-4
978-0345391803
                                                                                                                                                                 1987
                                                                                             Adams, Douglas
Adams, Douglas
Eckel, Bruce
                                                                                                                                                                                            41
                                                                                                                                                                1979
                                                                                                                                    0-671-69267-4
                                                                                                                                                                 1987
                                                                                                                                                                                            33
                                                                                                                                    978-0131872486
```

Figure 1: Expected outputs (1) for running the library program.

```
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:2
Please enter a Search Option:
(1) Search By Title (2) Search By Author (3) Keyword Search
Enter your search term: Mort
TITLE
                                                                                      AUTHOR
                                                                                                                         ISBN
                                                                                                                                                    PUBLISH YEAR
                                                                                                                                                                             AGE
Mort
                                                                                      Pratchett, Terry
                                                                                                                         0-575-04171-4
                                                                                                                                                    1987
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:2
Please enter a Search Option:
(1) Search By Title (2) Search By Author (3) Keyword Search
Enter your search term: Mark
                                                                                      AUTHOR
                                                                                                                                                    PUBLISH YEAR
                                                                                                                                                                             AGE
                                                                                                                         ISBN
                                                                                      Weiss, Mark
Twain, Mark
Data Structures & Problem Solving Using Java
The Adventures of Tom Sawyer
Adventures of Huckleberry Finn
                                                                                                                         0-321-54140-5
                                                                                                                                                    2011
                                                                                                                                                                              144
                                                                                                                         9780143039563
                                                                                                                                                    1876
                                                                                      Twain, Mark
                                                                                                                                                    1885
                                                                                                                                                                             135
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:2
Please enter a Search Option:
(1) Search By Title (2) Search By Author (3) Keyword Search
Enter your search term: Java
                                                                                                                                                    PUBLISH YEAR
                                                                                                                                                                             AGE
Data Structures & Problem Solving Using Java
                                                                                      Weiss, Mark
                                                                                                                         0-321-54140-5
                                                                                                                                                    2011
                                                                                                                                                                             9
14
Thinking in Java
                                                                                      Eckel, Bruce
                                                                                                                         978-0131872486
                                                                                                                                                    2006
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:4
Books Sorted!
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:3
                                                                                      AUTHOR
                                                                                                                                                    PUBLISH YEAR
                                                                                                                                                                            135
18
69
9
Adventures of Huckleberry Finn
                                                                                      Twain, Mark
                                                                                                                                                    1885
                                                                                     Iwain, Mark
Gaiman, Neil
Mailer, Norman
Weiss, Mark
Adams, Douglas
Rosen, Kenneth
Pratchett, Terry
Twain, Mark
Pratchett, Terry
Adams, Douglas
                                                                                                                         0-380-97365-0
                                                                                                                                                    2002
1951
American Gods
Barbary Shore
Data Structures & Problem Solving Using Java
Dirk Gently's Holistic Detective Agency
Discrete Mathematics and Its Applications
                                                                                                                         0375700390
                                                                                                                         0-321-54140-5
                                                                                                                                                    2011
                                                                                                                         0-671-69267-4
                                                                                                                                                                             33
21
33
144
37
41
72
14
                                                                                                                                                    1987
                                                                                                                         9780073229720
                                                                                                                                                    1998
1987
                                                                                                                         0-575-04171-4
Mort
                                                                                                                         9780143039563
                                                                                                                                                    1876
 The Adventures of Tom Sawyer
The Colour of Magic
The Hitchhiker's Guide to the Galaxy
The Naked & The Dead
Thinking in Java
War and Peace
                                                                                                                         0-86140-324-X
978-0345391803
978-0312265052
                                                                                                                                                    1983
                                                                                      Adams, Douglas
                                                                                                                                                    1979
                                                                                      Mailer, Norman
Eckel, Bruce
                                                                                                                                                    1948
                                                                                                                          978-0131872486
                                                                                                                                                                              151
                                                                                      Tolstoy, Leo
                                                                                                                         978-0199232765
                                                                                                                                                    1869
Welcome to the Arcadia Library.
Please enter a choice: (1) Add a book, (2) Find a book, (3) Print Collection (4) Sort (5) Exit:5
Thank You for Using Arcadia Library!
```

Figure 2: Expected outputs (2) for running the library program.

```
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Single Deck:
Dealing: DIAMONDS 12
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Multiple Deck:
Multi-Deck Dealing: DIAMONDS 4
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Shuffling multiple decks.
Deck shuffled!
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Multiple Deck:
Multi-Deck Dealing: CLUBS 10
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Single Deck:
Dealing: HEARTS 1
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Single Deck:
Dealing: CLUBS 2
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Single Deck:
Dealing: HEARTS 4
Please make a choose: (1) Deal from Single Deck, (2) Deal from Multiple Deck, (3) Shuffle Single Deck, (4) Shuffle Multiple Decks, (5) Exit:
Dealing from Single Deck:
Dealing: SPADES 3
```

Figure 3: Expected outputs (3) for running the deck program.