1. Create an array of product objects with sample data as given below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Product ID** | **Brand Name** | **Description** | **Price** |
| 200 | Dell | 15 inch Monitor | 3400.44 |
| 120 | Dell | Laptop | 45000.00 |
| 150 | Microsoft | Windows 7 | 7000.50 |
| 100 | Logitech | Optical Mouse | 540.00 |

Write a program to perform the following operations

1. Create a constructor function named **product**
2. Call the function to create the objects (use sample data)
3. Put the data in an array
4. A function to display all the products in a sorted order by default based on their product id.
5. Option for sorting based on Brand name or price based on input provided at runtime.
   1. If two products contain same brand name, description should be considered.
   2. Similarly if products have same price, product id’s should be considered while displaying them in order
6. Create a constructor function to create objects containing the following information in every object: (value properties)
7. Account number,
8. Name of account holder and
9. Balance.

Each object should allow the following operations: (functional properties)

1. Deposit functionality:
   1. User should not try to deposit amount less than or equal to zero.
   2. The deposit amount is not negative
   3. The balance should get updated if user enters a valid amount
2. Withdrawal functionality:
   1. Should update the balance if an valid amount is entered
   2. User should not try to withdraw amount less than or equal to zero.
   3. User should not try to withdraw an amount which is greater than existing balance.
3. Balance inquiry functionality:
   1. Should return the existing balance in the account

Create the following functionalities in your code:

1. Create an Account
   1. On successful creation, every account object should be stored into an array.
   2. Account object should not be created (fail) because of the following reasons:
      1. Initial amount for account creation is less than 500.
      2. Account Number already exists
      3. Name not provided
2. Transfer funds between two accounts
   1. On successful transfer of funds the balance should get updated in both the accounts.
   2. Transaction might fail because of the following reasons
      1. Invalid amount has been entered
      2. Insufficient balance in accounts
3. Need to log all the transaction attempts (i.e, Debit from account, Credit to account and the amount) irrespective of successful transaction or even for failure cases also.
4. Create a book management system:
   1. Create a function constructor to create Book objects with following attributes:
      1. Title
      2. Author
      3. Price
      4. Isbn (unique value)
   2. Create an array where the books can be stored
   3. Operations against the array of books
      1. Add a new book to the array
         1. Should not add the book with the same isbn number
      2. Delete a book from the array (using ISBN value of the book)
         1. Should check whether the array contains the book with the given ISBN number and then only delete the book
      3. Update a book in the array (ask user to enter the ISBN value of the book to update)
         1. Should check whether the array contains the book with the given ISBN number and then only update the book
      4. Show all the books in front of the user
         1. Books by default should be displayed in the alphabetical order of the title of the book
         2. If two books have identical title, then ISBN should be used to sort the books
      5. Filter books through the title
         1. User can enter complete title or partial value of the title. In case user enters partial title, then display all the books that contain that substring in the title