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//Book class, Client class, Library class
// Yashas Ravi

package Library;

public class Book {

	//Instance Variables

	private String title;
	private String author;

	//Constructor

	public Book (String t, String a) {
		title = t;
		author = a;
	}

	//Mutators

	public void setTitle (String Newt) {
		title = Newt;
	}

	public void setAuthor (String Newa) {
		author = Newa;
	}

	//Accessors

	public String getTitle () {
		return title;
	}

	public String getAuthor () {
		return author;
	}

	public String toString () {
		return "Title is " + title + "\nAuthor is " + author;
	}

}
```

```
package Library;

public class Client {

       //Instance Variables

       private String name;
       private Book B1;
       private Book B2;
       private Book B3;

       //Constructor

    public Client (String n) {
       name = n;
       B1 = null;
       B2 = null;
       B3 = null;
    }

    public Client (String n, Book a) {
       name = n;
       B1 = a;
       B2 = null;
       B3 = null;
    }

    public Client (String n, Book a, Book b) {
       name = n;
       B1 = a;
       B2 = b;
       B3 = null;
    }

    public Client (String n, Book a, Book b, Book c) {
       name = n;
       B1 = a;
       B2 = b;
       B3 = c;
    }

    public boolean canBorrow () {
```

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   if (B1 == null || B2 == null || B3 == null) {

          return true;
   }

   else {

          return false;
   }

}

public boolean returnBook (Book T) {
   if (T == B1 || T == B2 || T == B3) {
          System.out.print("\nThank you for returning " + T.getTitle() + " by " + T.getAuthor());


          if (T == B1) {
                 B1 = null;
          }

          if (T == B2) {
                 B2 = null;
          }

          if (T == B3) {
                 B3 = null;
          }

          return true;

   }

   else {
          return false;
   }
}

public boolean borrowBook (Book N) {


   if (B1 == null) {
          B1 = N;
          return true;
   }
```

```
   else if (B2 == null) {
          B2 = N;
          return true;
   }

   else if (B3 == null) {
          B3 = N;
          return true;
   }

   else {
          return false;
   }
}


public boolean hasBook (Book t) {
   if (t == B1 || t == B2 || t == B3) {

          System.out.print("\n" + name + " has " + t.getTitle() + " by " + t.getAuthor());
          return true;
   }

   else {
          return false;
   }

}

public String toString () {
   String str = "\n The Client's name is " + name;

   if (B1 != null) {
          str += "\nBook info: " + B1;
   }

   if (B2 != null) {
          str += "\nBook info: " + B2;
   }

   if (B3 != null) {
          str += "\nBook info: " + B3;
   }
```

```
        return str;
    }

}

package Library;

public class Library {

        public static void main(String[] args) {
                // TODO Auto-generated method stub

                Book b1 = new Book ("Fundementals of Java", "Mrs. Quan");
                Book b2 = new Book ("Harry Potter", "J.K Rowling");
                Book b3 = new Book ("Physics", "Halliday");
                Book b4 = new Book ("Biology", "Campbells");
                Book b5 = new Book ("The Cat in the Hat", "Dr.Suess");

                Client c11 = new Client ("Yashas", b1, b2, b3);



                c11.returnBook(b2);
                System.out.print(c11);

                if (c11.hasBook(b3)) {

                }
                else {
                        System.out.print("\n Client does not have \"Physics\"");
                }

                if (c11.hasBook(b2)) {

                }

                else {
                        System.out.print("\n Client does not have \"Harry Potter\"");
                }


                c11.borrowBook(b4);

                if (c11.canBorrow()) {
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            }
            else {
                  System.out.print("\n Client cannot borrow any more books");
            }



      }

}
```