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Quiz instructions: Answer all questions.

Q.1 [100 POINTS] [Students' average needed time to solve and review is 15 MINUTES]

- a. [60 POINTS] Code the enumeration **Type** that declares three **Type** objects each has the private attributes boolean **borrowable** and integer **count** that is initially **zero**. These objects are **JOURNAL** with **borrowable** value of **false**, **MAGAZINE** with **borrowable** value of **false**, and **BOOK** with **borrowable** value of **true**. The enumeration **Type** has the public methods **isBorrowable** that returns the value of **borrowable**, **init** that returns a string having the first three letters of the name of this object (Hint: use the **enum** method **name** and the **String** method **substring**), **getCount** and **incCount**. The method **incCount** increment the value of the attribute **count** by one.
- b. [40 POINTS] Answer the questions that follow given the class **Item**:

```
package l02Assessment.quiz2v2;
public class Item {
    private String code;
    private String title;
    private int year=2000;
    private Type type;
    private boolean available=true;
    //Assume that all setters and getter are coded and public except setCode
}
```

- i. [10 POINTS] Code the public boolean member method **borrow** that returns true after changing **available** to false only if the item is available and the item **type** is borrowable. Otherwise, it only returns false without any changes.
- ii. [10 POINTS] Code the private member method **setCode** that sets the value of **code** to a string having the combined values of the **year**, the result of calling the method **init** of **type**, and the result of calling the method **getCount** of **type**.
- iii. [10 POINTS] Code a constructor that receives the value of **year** and **type**, and use it to set the **year** and **type**, calls the **incCount** of **type**, and finally calls the private method **setCode** to set **code**.
- iv. [10 POINTS] Code the boolean public member method **sameType** that returns true if the calling **Item** object and the passed **Item** object are having the same value of **type** otherwise, it returns false.

```
package l02Assessment.quiz2v2;
public enum Type {
    JOURNAL(false), MAGAZINE(false), BOOK(true);
    private boolean borrowable;
    private int count = 0;
    Type(boolean borrowable){
        this.borrowable=borrowable;
    }
    public boolean isBorrowable() { return borrowable; }
    public String init() { return this.name().substring(0, 3); }
    public void incCount() { ++count; }
    public int getCount() { return count; }
}
```

```
package l02Assessment.quiz2v2;
public class Item {
    private String code;
    private String title;
    private int year=2000;
    private Type type;
    private boolean available=true;
    //Assume that all setters and getter are coded and public except setCode
    public String getTitle() { return title; }
    public void setTitle(String title) { this.title = title; }
    public int getYear() { return year; }
    public void setYear(int year) { this.year = year; }
    public Type getType() { return type; }
    public void setType(Type type) { this.type = type; }
    public boolean isAvailable() { return available; }
    public void setAvailable(boolean available) { this.available = available; }
    public String getCode() { return code; }

    /* i. [10 POINTS] */
    public boolean borrow() {
        if(available && type.isBorrowable())
            return true;
        return false;
    }
    /* ii. [10 POINTS] */
    private void setCode() {
        code = year+type.init()+type.getCount();
    }
    /*iii. [10 POINTS] */
    public Item(int year, Type type) {
        setYear(year);
        setType(type);
        this.type.incCount();
        setCode();
    }
    /*iv. [10 POINTS] */
    public boolean samType(Item other) {
        return type.name().equals(other.type.name());
    }
}
```