Package beans;

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| Class Person;  Private String userName; (20)  Private String password; (15)  Private String email; (50)  Private String firstName; (50)  Private String lastName; (50)  Private String imagePath; (100)  Person(username, password, email, firstName, lastName, imagePath){  //initialise all  }  Public String getUserName();  Public String getPassword();  Public String getEmail();  Public String getFirstName();  Public String getLastName();  Public String getImagePath();  Public void setUserName(userName);  Public void setPassword(password);  Public void setEmail(email);  Public void setFirstName(firstname);  Public void setLastName(lastName);  Public void setImagePath(ImagePath); |
| Class Admin extends Person  // Nothing here |
| Class User extends Person  Private String[] booksIssued; (will store bookid’s)  Public String[] getBooksIssued();  Public void setBooksIssued(booksissued); |
| Class Book  Private String bookId; 10  Private String bookName; 50  Private String category; 20  Private String author; 50  Private String publisher; 50  Private String description; 150  Private String imagePath; 100  Private String available; (Stores username else null) 20  Public String getBookId();  Public String getBookName();  Public String getCategory;  Public String getAuthor();  Public String getPublisher();  Public String getDescription();  Public String getImagePath();  Public String setBookId(bookId);  Public string setBookName(bookName);  Public String setCategory(Category);  Public String setAuthor(author);  Public String setPublisher(publisher);  Public String setDescription(description);  Public String setImagePath(imagePath);  Public String setAvailable(username); |

Package database;

//use below class methods without worrying about database

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| Class UseDB;  Private static Connection connect;    UseDB(){  //don’t use this functions  <Boolean> createBookTable();  <Boolean> createUserTable();  <Boolean> createAdminTable();  }  //**below static classes only**  //they are all public  //  <Connection> getConnection();  <User> getUser(username, password); //returns null if username not present  <Admin> getAdmin(username, password);  <Book> getBook(bookId);  <Boolean> addUser(User);  <Boolean> addAdmin(Admin);  <Boolean> addBook(book);  <Boolean> removeBook(bookid);  <Boolean> removeUser(username);  <Boolean> removeAdmin(username);  <Boolean> setAvailable(bookId , username);  //pass those books which are issued  <Boolean> setAvailableList(username,Arraylist<String> bookId);  <Boolean> setNotAvailable(bookid)  ArrayList<Book> getBooks();  ArrayList<Book> getAvailableBooks();  ArrayList<Book> getIssuedBooks()  ArrayList<User> getUsers();  ArrayList<Admin> getAdmins();  //adds and removes books in user table  //also updates availability of book  <Boolean> addIssueBooks(username, ArrayList<String> Bookid)  //returns all books in 1 go  <Boolean> removeIssueBooks(username, ArrayList<String> Bookid) |

Package validate;

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| Class Validator;  //all methods are static  public static boolean validateEmail(String email);  public static boolean validateUsername(String username) throws NullPointerException;  public static boolean validatePassword(String password) throws NullPointerException;  public static boolean validateName(String name) throws NullPointerException; |