Practice Activity – Class Diagrams

Question 1

A book has a title, an author, and a call number. A library patron has a name and an ID number and may or may not have a book checked out. Draw a class diagram for Patron where only a single book may be checked out at any given time. Include the methods necessary to check out a book and print which book (if any) the patron has.

|  |
| --- |
| Patron |
| String name  int iDNum  boolean bookCheckedOut |
| void CheckOneOut(Book book)  String getCurrentBook() |

|  |
| --- |
| Book |
| String bookTitle  String bookAuthor  int callNum |
| void getBook(String title, String author, String callNum) |

Question 2

Draw a class diagram including a Library object. A library, of course, has many patrons and many books. Include the methods required to check out a book to a patron, given the patron’s ID number and the book’s call number. Also include the methods required to list which books a patron has, given the patron’s ID number.

|  |
| --- |
| Library |
| ArrayList<Patron>  ArrayList<Book> |
| void checkout(int idNum, Book book)  void checkIn(int idNum, Book book)  String patronData(int idNum) |

|  |
| --- |
| Book |
| String bookTitle  String bookAuthor  int callNum |
| void getBook(String title, String author, String callNum) |

|  |
| --- |
| Patron |
| String name  int iDNum  boolean bookCheckedOut |
| void CheckOneOut(Book book)  String getCurrentBook() |

Question 3

Draw a Class Diagram for Lesson 5 – Question 1 -Car Icon.

|  |
| --- |
| Icon |
| Icon icon |
| setIcon(Icon icon) |

|  |
| --- |
| CarIcon |
|  |
| CarIcon()  paintIcon(Graphics g) |

|  |
| --- |
| CarIconTest |
| CarIcon carIcon |
| main method |

Solutions

### Q1 Patron can check out one book



Q2 Library with Books & Patrons

