CMSC 220 Software Construction
Quiz 2
04/12/2016

Name ___________

1. Name two non-functional requirements, and describe a quantitative metric that you can use to measure each of them.

___availability___ metric ___the percentage of time the service is available___

___usability___ metric ___time taken by a user to learn how to use the app________

2. Please draw a use-case diagram based on the software description below.

   Librarian can use the software to add books, delete books, and edit the information for each book. Library users can use the software to borrow books, return books, and pay overdue fees.

   ![Use-case Diagram]

   *There should be a rectangle that contain all the use case ovals.*
3. Provide an activity diagram for the following use case

**Borrow Books**
*(precondition: the user has already logged in as a valid library member)*

1. Specify the book to borrow
2. Make sure this book is available to be lent out
3. Make sure the user is eligible to borrow a book
4. Update the status of the record of the book
5. Update the profile of the user
6. Calculate the return date
7. Print out a receipt

**Extensions**
2.a The book cannot be lent out
   Tell the user why the book cannot be borrowed; go to Step 1
3.a The user is not eligible
   Tell the user why he/she is not eligible to borrow books; go to Step 7
7.a The user wants to check out another book
   Save this book’s borrow information; go to Step 1