CS 5150, Software Engineering
Test 1

Monday, September 12, 2011
45 minutes

Instructions

1) Answer both questions.

*2) Write your answers in an examination book. WRITE YOUR NETID ON THE
FRONT OF EACH BOOK.*

3) This is an open book test. You may use any books or notes.

*4) Laptop computers may be used to store copies of the course materials and notes,
but not for email, to search the web, or any activity that involves networking. NO
CELL PHONES OR OTHER ELECTRONIC DEVICES MAY BE USED.*

The Collection System for Academic Papers

Both questions are about the following proposed system:

Academic researchers often mount the journal papers that they write on
departmental web servers. The goal of the Collection System is to collect all the
papers for a large university and load them into a central repository. This will be a
record of research at the university, to be preserved for the long-term.

The system will look at each departmental server, identify research papers, index
them, and copy them to the central repository. Here are some of the challenges
that are expected:

(a) As far as possible, the identification of research papers will be automated. The
algorithm for identifying papers is not perfect and errors can be expected.

(b) The system will attempt to identify the author of each paper automatically, and
send an email message requesting permission to load the paper into the repository.

(c) The algorithm for indexing the papers will attempt to extract information such
as author, title, and date.

(d) Because of errors in (a), (b), and (c), each paper will need human review before
loading into the repository. It is important to provide a user interface that
minimizes the human effort required.

Question 1

You are leading a feasibility study of the proposed Collection System.

(a) Who (if anybody) are:
      i   the client?
      ii the customers?
      iii the users?

(b) What are:
      i   the expected benefits of the proposed system?
      ii the risks if the project is not done?

(c) Complete the following sentence:
      "The client will consider this system a success if ..."

(d) List the <u>three</u> main risks that you see in developing this system.

Question 2

You are asked to recommend a software development process for the Collection System.

(a)   i Is the modified waterfall model a good choice for developing this system?
      ii Give <u>two</u> reasons for your answer.

(b)   i Is iterative refinement leading to a single release of the system a good choice
        for developing this system?
      ii Give <u>two</u> reasons for your answer.

(c)   i Is incremental releases of small increments of software a good choice for
        developing this system?
      ii Give <u>two</u> reasons for your answer.

(d)   What software development process would you recommend?