CS 3321 and INFO 3307/5307
Homework 1 – Process and Requirements

Solution Key

Assigned: September 02, 2019
Due: September 13 @ 2300h

1 Questions (50 points)

1. Provide a number of examples (positive or negative) that indicate the impact of software on our society. (10 points)

   Software has led to the development of tools such as online news services, streaming videos (YouTube), and Social Media which has allowed for the rapid creation and distribution of information across the globe. This has increased our understanding of other cultures and our ability to connect to others. But, it has also led to the polarization of different viewpoints and subsets of populations. Furthermore, these applications which have spread to a variety of desktop and handheld devices has led to a form of screen addiction. Thus, as software has improved our ability to learn, gain information, and connect, it has also led to a constant need for instant gratification, a need to constantly check for updates, and consequentially an interesting disconnect to those in our immediate vicinity. Furthermore, software has led to an unprecedented creation of new fields while simultaneously creating automated processes which make existing jobs unnecessary.

   Basically, any seemingly logical or thought out argument for the impact of software on society will earn full points.

   - -5 Points, if the statement is unreadable (serious grammatical issues, spelling errors, or is logically inconsistent).
     - -5 Points, if only a single sentence or does not present an argument
     - -10 Points, if not attempted

2. As software becomes more pervasive, risk to the public become an increasingly significant concern. Develop a doomsday but realistic scenario in which the failure of a computer program could do great harm, either economic or human. (10 points)

   Basically, any seemingly plausible worst case scenario either human or economic.

   - -5 Points, if the statement is unreadable (serious grammatical issues, spelling errors, or is logically inconsistent).
   - -5 Points, if only a single sentence or does not present an argument
   - -10 Points, if not attempted

3. Write a User Story that describes the “favorite places” or “favorites” feature available on most web browsers. (10 points)

   As a user, I want a place in which my commonly used websites can be stored so that I can quickly access those sites.

   Acceptance Criteria: I expect to see a feature marked as “Favorites” or “Favorite Places” which displays a list of items I have previously marked. If I click on one of these items, it will open the associated URL in the current tab.

   Grading Criteria:

   - 5 Points - follows the user story format and describes the favorites feature (2.5 points) and the value of that feature (2.5 points). If it does not follow the User Story format -5 points
   - 5 Points - Acceptance Criteria. Should describe in one or two sentences a means by which the user will know the feature is implemented and works. Something similar to above. -5 points no acceptance criteria, -2.5 points if it does not indicate the criteria that the favorites will be in some sort of list, and -2.5 points if it does not indicate the use of a favorite to open a new URL. -5 points if missing.

4. You have been asked to develop a small application that analyzes each course offered by a university and reports the average grade obtained in the course (for a given term). Write a statement of scope that bounds the problem. (10 points)

- **Justification:** The university needs the ability to evaluate the overall average grades of students enrolled in each course offered during each term. The purpose of this report is to summarize the student results at the level of college, department, and program for use by the administration in decision making for future directions of the university.
- **Product Scope Definition:** A small program is to be written which collects all the individual final grades for each course offered by the university during each term. These final grades are then averaged for each course, and a report is generated for review.
- **Acceptance Criteria:** A report is generated containing the average grades for each course offered by the university for the given term.
- **Deliverables:** A working program that meets the acceptance criteria
- **Project Exclusions:**
  - Individual grades reports for each student at the university.
  - Information regarding the instructors, administrators, and other staff.
  - Calculations of GPA
- **Constraints:**
  - Having limited knowledge of the course information (such as instructors) the ability to provide deeper analysis can not be achieved. If we had this information, in addition to information regarding instructor evaluations more insight could be gained.
  - Having limited knowledge regarding student information limits the ability to provide deeper analysis. Furthermore, having more student information would require more security and a higher cost of development along with greater liability risk.
- **Assumptions:**
  - It is assumed that the final individual grades for any given course are stored in a central location, such as a database. The program will need access to this in order to complete its function.
  - It is assumed that the list of courses and their identifiers used in the grade database is stored somewhere which can be made available to the program.

- It is assumed that the report is to be generated as either an HTML file or PDF file for easy viewing and searching.
- The report is to include graphical displays summarizing the results at the level of college, department, and program for use in decision making for future directions of the university.
- The report will be viewed by individuals at the higher levels of administration (Deans and above).

Grading Criteria:

- Should have something similar to the Justification, Scope Definition, Acceptance Criteria, Deliverable, and Assumptions (2 points each). Please note that the headers may be different.
- In general if they capture the gist of the above I would give them full credit.

5. Can the agile models XP and Scrum be described using the generic framework activities? Build a table that maps the generic activities into the activities defined for each agile process. (10 points)

Generic Activity	**XP**	**Scrum**
Communication	Planning	Planning,Daily Scrum,Sprint Review
Planning	Planning	Planning
Modeling	Design	Staging
Construction	Coding	Sprint
Deployment	Release	Delivery

Grading Criteria: - They need a table as shown, they should have something similar to the one shown. If they are missing information take a .5 points off for each missing item. If they did not use a table as required, take off 5 points (if they have all the necessary information), if they are missing take off the requisite .5 points until 0 points are left. - If they wrote a nice paragraph about the differences between scrum and xp, but did not put it into the context of the generic framework, take off a max of 5 points.