UMass Boston CS 410
Homework 2
Posted Wednesday, September 23, 2026
Due Wednesday, September 30, 2026 at 11:59 pm

0 General

Homework must be typed and converted to Portable Document Format (PDF), see `https://en.wikipedia.org/wiki/PDF`. To submit your homework, prepare one PDF file called `hw2.pdf` Upload the file to the `cs410` folder linked to your home directory on the CS Linux server. If you have trouble with uploading, email `operator@cs.umb.edu` for help.

The questions in this homework are based on the reading in Essential Scrum (ES) by Kenneth S. Rubin and other references. For this homework, the reading is ES, Chapters 5-6, the chapters on Requirements and User Stories and Product Backlog Items. The projects in class are based on html (and to some extent javascript) so please refer to https://www.w3schools.com/html for concrete illustrations of code to support your thinking.

1 ssh passwordless login - show your public key - 20 points

We did passwordless login on various machine types in class on Tue Sep 22. The website show an AI prompt that can give latest information by machine type. Use the directions to create your passwordless login if you do not have one yet. Please access the server and copy your public key to this document for credit on this task.

2 ES Chapter 5 Requirements and User Stories for Celtic Knot - 20 points

See Essential Scrum, Chapter 5 for the agile concept of requirements that follows the Scrum approach. The concept is closely linked to Chapter 6, Product Backlog, which describes the items being considered for the project. In Chapter 5, we learn how to write a user story as a requirement. See the card in Figure 5.2. See the levels of abstraction in Figure 5.5. Finally, consider the non-functional requirements section, especially the example of Web Browser Support.

In this homework, we are starting an initial project. Please see the photos of a painting called Celtic Knot by J.P. Ware, my neighbor, which are posted on class website. The first photo is her painting. The second photo has a sketch of how to name the sections of the figure. There are numbers 1-17 and letters A-R.

We have 20 students. Team up by laptop type. Team 1 Linux. Team 2 Mac. Team 3 Windows (split into 3a and 3b by lastnames: first half 3a, second half 3b).

Team 1 does parts in upper left. Team 2 does parts in upper right. Team 3a does parts in lower left. Team 3b does parts in lower right. **Divide the parts in each team area among the team members.**

Then write a user story card about **each of your parts in your team's area**. Imagine that the business value is artistic: we keep the shape (pixel locations) precise and allow some freedom in how the colors are rendered. Start each card with the part number or letter. Put each card in a part-csusername.txt file. Make your subdirectory /courses/cs410/f26/hdeblois/GROUP2/CKi/csusername and upload your cards.

Limit what you write for each card to the amount shown in Figure 5.2.

3 Integration cards - 20 points

Then, each team member writes 3-5 cards (numbered using step j, j = 1, 2, 3 etc.) for a **superstructure (SS)** of user stories integrating all team parts. Include some non-functional requirements. For sure, include Web Browser Support. Expect to locate items amongst the pixels of a rendered website. Plan to use `https://www.cs.umb.edu/cs410/CKi` where i is 1, 2, 3a or 3b. Consult w3schools website.

Again, limit what you write for each card to the amount shown. Name each card SS-CKi-csusername-stepj.txt. Make a handwritten sketch of your Figure 5.5, take a photo and include it in your hw2.pdf. Upload cards to subdir /courses/cs410/f26/hdeblois/GROUP2/Cki/csusername.

4 ES Chapter 6 Product Backlog Items - 20 points

See Essential Scrum, Chapter 6 for the discussion of Product Backlog. In particular, Table 6.1 describes the types of items: feature, change, defect, technical improvement and knowledge acquisition. Product Backlog includes ALL the teams cards. But there are many ideas for the superstructure! Each team made a directory in /courses/cs410/f26/hdeblois/GROUP2/ named CK1 or CK2 or CK3a or CK3b. Now each team makes a subdirectory named team - whoever gets there first will do mkdir team. Check it by typing ls -la to be sure permissions are set so the group cs410-2 can access it. Type man chgrp to see syntax for changing group.

(Once the default propagation of permissions is set to umask 0022, the group cs410-2 will always appear in place of the individual's default group ugrad. In ls -la look for the top 2 directories, which will have the sticky bit set for the next higher up directory. Contact operator@cs.umb.edu with further questions and copy the instructor.)

Also, each student made their own subdirectory in their team directory. Each student put their cards there. **The team selects the best of the superstructure plans by voting.** Put those cards in the team subdirectory of the CK dir for the team.

5 Getting a software project to Done or DoneDone - 20 points

Again, please look at Essential Scrum, Glossary items including definition of done, definition of ready and development team and the Example Definition-of-Done Checklist, p74 and the text in that section. Each day, as I explained, the end of class marks what has been done.

Build one or more parts using html. State your test. List your code here. How long did it take? How done is it? Create R05 in your course directory for this out-of-class individual work. If you also would like to build the SS, coordinate first with your teammates.

Note: Report R04 was given time until midnight, but in general reports must be written before the end of class. This is to keep you from spending too much time talking. The agile way is build and show. Comments on what is shown on a screen are quick and precise.