

User Stories and Personas - Version 0

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Personas:

Dr. Jane Jonah

- 40 years old, female
- Statistic Professor at a large university
- Speaks English natively
- Not proficient in programming languages, but can get around using a computer without problems
- Really cares about teaching, wants to modify and customize the learning experience to suit students and her needs
- Willing to put in the effort to learn new software, but often simply doesn't have the time (busy person)
- Mostly teaches first year courses
- Student engagement is typically low in her courses, and wants to improve it
- Knows LaTeX, and would like to use math notation in the software she uses
- Currently uses WebWork, but finds it unintuitive at times and finds it too rigid
- Courses she teaches have weekly graded assignments with very strict and consistent deadlines (e.g. every Monday at 1:00 pm)
- Usually gives short multiple choice assignments which do not vary significantly in format

Dr. George Gina

- 68 years old, male
- Math Professor at a large university
- Knows LaTeX, and knows how to use a computer proficiently
- Speaks Greek fluently, knows English as a second language
- Doesn't have time to learn new software – prefers simpler intuitive programs to complex but powerful ones
- Teaches all levels of students (from 1st year to Master students)

- Has no issues with student engagement in his courses but would like something which eases the assignment distribution and marking process
- Wants software to take care of deadline related matters
- Currently doesn't use WebWork, but would like an easier solution than paper-graded assignments
- Spends 2 hours every day commuting without internet access
- Is colorblind (monochromatic)
- Wants to spend minimal time grading assignments
- Would like to see analytics on students at a glance
- Courses taught by him typically have few assignments, and not all are graded
- Likes to give assignments containing complex multi-part questions with open ended answers

Amal

- 24 years old, female
- Graduate Math student at UTSC
- Exchange student from Syria.
- Does not speak English Fluently, but knows Arabic well
- No knowledge of programming languages
- Has tight schedule due to studies, would like to complete assignments early but often ends up doing them piece by piece throughout the week
- Very concerned with academic standing and would like to know what grade she got as soon as possible
- Only uses default settings of programs to stay safe and not mess anything up
- Prefers paper and pen assignments, but will use software if required by course
- Very busy with graduate studies, not much time for hobbies
- Likes receiving prompt feedback on assignments to know what she did right or wrong

Eric

- 20 years old, male
- Statistics student at UTSC
- Speaks English Fluently, but not native language
- Decent knowledge of programming languages
- Very punctual and dedicated, usually completes assignments long before the deadline and often completes them all at once
- Currently taking a full course load
- Really cares about technical aspects of software. Modifies and customizes default settings to enhance his experience with the program
- Willing to put in the effort to learn new software, but also a busy person. Learns software mostly by experimenting with the options
- Also is a TA for first year statistics courses
- Does not know LaTeX
- Prefers in-person feedback on assignments as opposed to automated ones

Johnson

- 19 years old, male
- History student at UTSC who is taking statistics electives
- Speaks English fluently as a native language
- No knowledge of programming
- Procrastinator; tends not to start an assignment until nearly the day it is due
- Part time student, currently only taking two courses and works at a local store most weekdays
- Easygoing person; is likely to give up or avoid using programs which he finds too unintuitive or tedious to use
- Prefers courses which allow/require students to submit their work online rather than in person
- Not too concerned with academic standing in his electives and in general seeks to do only the minimum required work for those courses
- Wants to know 'at-a-glance' what he did right and wrong on an assignment
- Tends to ignore feedback if it is too long or technical

User Stories:

As Peter, a professor, I would like to create a Homework question set comprised of a sequence of questions containing only simple text

As Johnny, a student, I would like to be presented with a list of all homework question sets and see whether or not I have taken a Homework set along with my previous and highest % mark

As Johnny, a student, I want to be able to select a Homework question set from a list, and then be presented with the sequence of questions created for that set, one-by-one

As Johnny, a student, I want to be able to answer a Homework question I have been presented with by selecting one of many pre selected answers given to me and then submitting this answer

As Peter, a professor, I want to be able to create a Homework question set comprised of a sequence of questions containing only simple text

As Johnny, a student, I want to be prompted to retake an entire Homework question set upon completing it so that I can practice more and improve my grade

As Johnny, a student, I want to be able to save my progress in a question set so that I can later on resume the question set from the same state as when it was saved

As Amal, a student, I want to be able to receive textual feedback from the application if I answer a question incorrectly which concisely explains why my answer was wrong and what the correct answer was

As Johnny, a student, I want to be able to see how many questions there are in a question set so that I can plan my time accordingly

As Peter, a professor, I would like to be able to use the application to specify a deadline date and time for a Homework question set which prevents students from taking or resuming a question set on dates past the deadline

As Peter, a professor, I would like to be able to randomize certain numerical values within a range on an individual Homework question through a simple parameter taking tool in the app so that students doing the Homework questions receive randomized values in their questions

As Peter, a professor, I want to be able to give an existing Homework question set a customized name which I can type in and specify myself

As Peter, a professor, I would like be able to use the LaTeX system when writing Homework questions so that I can properly and easily represent mathematical symbols and notation

As Joey, a student, I would like to insert mathematical symbols without using LaTeX, so that I don't need extra software or background knowledge for the homework.

As Joey, a student, I would like to be able to save changes automatically during the time I write my homework, so that I don't need to worry about power loss.

As Peter, a professor, I would like the ability to set certain questions within a question set to take textual input instead of presenting preselected answers so that I can simulate more open ended questions

As Peter, a professor, I would like to be able to set certain question sets to be ungraded, meaning they still provide feedback on incorrect answers but have no deadline so that I can have question sets which are purely for students to practice

As Peter, a professor, I would like to be able to view statistics about class participation which tell me what percentage of the class has taken a question set at a given time, along with the amount of times the set has been attempted again by individual students

As Peter, a professor, I would like to be able to view statistics about class participation which tell me how long a student has spent on an assignment. It should tell the start time and date, the lasted date and time the student had it open, and the amount of time spent on it. Do not count breaks, only when the student had the assignment open for attempt.

Appendix: Client Interview log

Here is a log of the client interview that occurred on October 4th, 2017 which we used as a starting point for the Personas and User Stories.

Q: In what way would the questions be randomized?

- parameterized questions, for a simple example:

Find x in $n + 34 = x$

and the instructor would have the option to specify a range that n is allowed to be in for the randomization.

- potentially, we'd have to generate answers on the fly as well
- current webwork interface requires perl skills the client doesn't have, better interface would be through the UI and involve text boxes or dropdown elements
- So Q1 -> Q2 -> Q3, every Q1 is similar in layout but with a range of possible numbers. Afterwards Q2 and Q3 would have totally different question styles but still with certain randomized elements.
- essential feature to have; very important that we do the question randomization feature well

Q: How does retaking a problem set work ?

- Students CANNOT retake an individual problem, but CAN retake an entire problem set.
- Only the maximum of all scores on an individual problem SET they have taken is actually saved, BUT they are shown their %score each time they complete the set, along with a prompt to retry to try to motivate them to do the problems again.
- Unlimited problem SET tries until deadline i.e. they can refuse the prompt, but come back later as long as deadline is not yet reached.
(Do we kick them out if the deadline is reached in the middle?)

Q: Role of TA's

- Not essential, nice to have, but no real immediate use for them in this system

Q: Intended instructor usage?

- Most likely compsci/math/stats: very likely they all know and would like to use LaTeX but not all may know perl, so the system required for question randomization should be simpler and done through UI.
- End goal is to increase student engagement with 'gamified' homework practices

Q: Additional student-side features?

- hints on questions or explanations of why an answer is wrong - far future: leaderboards, high scores, etc.

Q: Features missing from webwork which would be nice?

- Ability to specify topic or name of a problem set
- CLEAR and intuitive way to modify a problem set from within the app itself (webwork requires a system of file uploading that supposes knowledge of perl)
- CLEAR way to collect student engagement/usership statistics – Feedback, Attempts, Answers