



ENSE 471 – User Interface Programming (People-Centered Design), Winter 2020

Project Description & Key Deliverables

Instructor: Dr Tim Maciag

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Customer problem narrative

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Regina Fire & Protective Services (RFPS) has provided an interactive activity, delivered by firefighters, designed to lead kindergarten to grade three students through the components of a family fire escape plan. The Department proactively schedules this activity for all of the City of Regina's elementary schools within a three-year cycle. This ensures that every elementary school student receives this life saving information at least once throughout their early school years. While the original intent of this fire education program is still valid and necessary, the original design has now become obsolete and lacks relevance with current technology and communication tools. It is the intent of this project to create unique applications and or programming that will allow children to learn skills such as contacting 9-1-1 and developing their own home fire escape plan, using the latest technology available. The project will be used as a teaching tool within the interactive elementary school programming and encourage/use communication links to their home environment. Saving lives by partnering education and the latest technology and engineering possibilities

Instructor notes

Student teams of 2-3 students (auto generated by the instructor, based on lab section enrollment) will design, develop, and deliver a solution to the RFPS that strives to solve the customer's problem. Teams will utilize a Design Thinking/Fast Feedback Cycle approach to design their solution. Teams will use the technology of their choosing to develop their proposed solution. It is the instructor's recommendation to utilize knowledge and skills gained from previous classes such as CS 215 and ENSE 374.

High-level guidelines, principles, & assumptions

- **License:** [Creative Commons Share & Share Alike \(CC BY-SA 4.0\)](#)
- **Programming language:** Team defined. However, see instructor notes above
- **Process:** Design Thinking/Fast Feedback Cycle, User Story Mapping (USM), Minimum Viable Products (MVP)
- **Project management software:** GitHub, StoriesOnBoard
- **Deliverables & grading:** There are four primary deliverables that comprise the project (for an accumulated grade allocation of 20%). Deliverable due dates signify customer check-in points. Some deliverable expectations are due after deliverable due dates (see each deliverable for more information). For a minimum team grade of "meets expectations," all stated deliverables must be made available in team GitHubs for review by specified due dates. Individual team member grades may be higher or lower based on individual contributions. The customer will choose the best solution(s) for the "best group project" grade allocation
- **IMPORTANT NOTE:** Attendance during team check-point events is mandatory. Failure to attend will result in a 0% grade on the deliverable for the individual that is missing. Tardiness is also subject to individual grade deductions (up to and including the full deliverable allocation). Team's only have to attend their scheduled check-point time, with the exception of the final project delivery where attendance by all students on both days/all times is mandatory/expected. Grades are based on student/team professionalism, work, as well as work and documents uploaded to team GitHubs.



Deliverable 1: Problem, requirements, & framing

Due: February 4 or February 6, 2020

NOTE: Teams only have to attend their scheduled check-point time as listed below. See the “high-level guidelines, principles, & assumptions” section at the beginning of this document for additional information

Date	Check-point time	Team
February 4	11:30 am – 11:45 am	Group A
	11:45 am – 12:00 pm	Group B
	12:00 pm – 12:15 pm	Group C
	12:15 pm – 12:30 pm	Group D
	12:30 pm – 12:45 pm	Group E
February 6	11:30 am – 11:45 am	Group F
	11:45 am – 12:00 pm	Group G
	12:00 pm – 12:15 pm	Group H
	12:15 pm – 12:30 pm	Group I

Pre-check-point and check-point activities

Based on our discussion with the key customer on January 23 students will individually compile insights and construct empathy maps of envisioned stakeholders (an empathy map template is provided in URCourses). In the lab on January 27 and 29, along with (re)learning GitHub and learning StoriesOnBoard USM technology, your team will have time to come together and complete affinity mapping activities based on summarized customer notes and empathy mapping. From crafted summaries teams will create an initial USM/MVPs in StoriesOnBoard (affinity diagramming clusters may help to develop epic scenarios). During your team’s scheduled 15-minute check-point as denoted above Team’s will discuss their problem definition, empathy mapping, affinity diagramming, and USM/MVP vision with our key customer.

Deliverables (in your Team’s GitHub) must include, at a minimum for a “meets expectations” allocation:

- Problem definition document illustrating the problem definition, a project vision, rationale, stakeholders and north star customer, assumptions, constraints, customer eco-system map(s) with illustrated carryover, and high-level customer needs/requirements (2-page maximum)
- Empathy maps and affinity diagramming documents (captured images of activities) of key/target customers (include individual contributions)
- Initial requirements framing via USM/MVP, complete with initial user stories (epics). Remember, focus on experiences, not features/functionality. Export USM to Office/XLSX, Map output upload to GitHub)
- Summarized customer notes and team insights vs needs chart/document that details output from customer check-in meetings (Office (.docx) file) to be uploaded to GitHub within 3 days after due date (2-page maximum)
- Self/Peer review files (submitted in URCourses and not uploaded to GitHub)
- Good (Readable)-Excellent grammar, spelling, professionalism
- All files uploaded to GitHub
- The Instructor reserves the right to have a subjective grading discretion +/- 0.0 – 1.0%

Allocation: 4% (out of 20%)

- Fail: 0-1.9% (not submitted, missing during report-out (individual/group), and/or very weak deliverables)
- Developing: 2-2.9% (weak deliverables)
- Meets expectations: 3-3.5% (satisfactory deliverables)
- Exceeds expectations: 3.6-4% (above and beyond)



Deliverable 2: Brainstorming & picturing architecture (lo-fidelity prototype focus)

Due: February 25 or February 27, 2020

NOTE: Teams only have to attend their scheduled check-point time as listed below. See the “high-level guidelines, principles, & assumptions” section at the beginning of this document for additional information

Date	Check-point time	Team
February 25	11:30 am – 11:45 am	Group A
	11:45 am – 12:00 pm	Group B
	12:00 pm – 12:15 pm	Group C
	12:15 pm – 12:30 pm	Group D
	12:30 pm – 12:45 pm	Group E
February 27	11:30 am – 11:45 am	Group F
	11:45 am – 12:00 pm	Group G
	12:00 pm – 12:15 pm	Group H
	12:15 pm – 12:30 pm	Group I

Check-point activities

Based on customer knowledge gained from the previous deliverable as summarized in the team’s customer notes and team insights document, and brainstorming and lo-fidelity prototyping activities completed (started) in your lab time on February 10 and 12, during your team’s scheduled 15-minute check-point as denoted above Team’s will discuss their various lo-fidelity prototypes with our key customer. Team’s will collect customer notes to be documented and used to further solidify solution design ideas (towards a single prototype proposal). Teams will also quickly go over their updated USM/MVP envisioning with the key customer and confirm/verify MVP activities.

Deliverables (in your Team’s GitHub) must include, at a minimum for a “meets expectations” allocation:

- Lo-fidelity graphical user interface sketches (low-tech, paper and pencil, image uploads)
- Ensure you link your design ideas back to a minimum of three topics discussed in class relating to people centered design (affordances, gestalt, constraints, etc.)
- Updated USM/MVP with evolved and new user stories, focus on the activities and narrative flow (features and functionality as per the user experiences spawned from the epics (Export to Office/XLSX, Map output upload to GitHub)
- Updated problem definition document from Deliverable #1 (if applicable)
- Summarized customer notes and team insights vs needs chart/document that details output from customer check-in meetings (Office (.docx) file) to be uploaded to GitHub within 3 days after due date (2-page maximum)
- Self/Peer review files (submitted in URCourses and not uploaded to GitHub)
- Good (Readable)-Excellent grammar, spelling, professionalism
- All files uploaded to GitHub
- The Instructor reserves the right to have a subjective grading discretion +/- 0.0 – 1.0%

Allocation: 4% (out of 20%)

- Fail: 0-1.9% (not submitted, missing during report-out (individual/group), and/or very weak deliverables)
- Developing: 2-2.9% (weak deliverables)
- Meets expectations: 3-3.5% (satisfactory deliverables)
- Exceeds expectations: 3.6-4% (above and beyond)



Deliverable 3: Hi-Fidelity/Balsamiq prototype, testing, & evaluation

Due: March 10 or March 12, 2020

NOTE: Teams only have to attend their scheduled check-point time as listed below. See the “high-level guidelines, principles, & assumptions” section at the beginning of this document for additional information

Date	Check-point time	Team
March 10	11:30 am – 11:45 am	Group E
	11:45 am – 12:00 pm	Group D
	12:00 pm – 12:15 pm	Group C
	12:15 pm – 12:30 pm	Group B
	12:30 pm – 12:45 pm	Group A
March 12	11:30 am – 11:45 am	Group I
	11:45 am – 12:00 pm	Group H
	12:00 pm – 12:15 pm	Group G
	12:15 pm – 12:30 pm	Group F

Check-point activities

Based on customer knowledge gained from the previous deliverables as summarized in the team’s customer notes and team insights document, and hi-fidelity prototyping activities using Balsamiq completed (started) in your lab time on February 24 and 26, during your team’s scheduled 15-minute check-point as denoted above Team’s will discuss your proposed hi-fidelity prototype with our key customer. Team’s will collect customer notes to be documented and used to further solidify solution design ideas (towards a single MVP development). Teams will also quickly go over their updated USM/MVP envisioning with the key customer and confirm/verify MVP activities. NOTE: Development of your design idea is the next deliverable so ensure you have customer sign-off on your hi-fidelity prototype and other ideas generated from your team’s discussion with our key customer

Deliverables (in your Team’s GitHub) must include, at a minimum for a “meets expectations” allocation:

- Hi-fidelity graphical user interface Balsamiq mockup (PDF file)
- Again, ensure you link your design ideas back to a minimum of three topics discussed in class relating to people centered design (affordances, gestalt, constraints, etc.)
- Updated USM with evolved user stories (Export to Office/XLSX, Map output upload to GitHub)
- Updated problem definition document from Deliverable #1 (if applicable)
- Summarized customer notes and team insights vs needs chart/document that details output from customer check-in meetings (Office (.docx) file) to be uploaded to GitHub within 3 days after due date (2-page maximum)
- Self/Peer review files (submitted in URCourses and not uploaded to GitHub)
- Good (Readable)-Excellent grammar, spelling, professionalism
- All files uploaded to GitHub
- The Instructor reserves the right to have a subjective grading discretion +/- 0.0 – 1.0%

Allocation: 4% (out of 20%)

- Fail: 0-1.9% (not submitted, missing during report-out (individual/group), and/or very weak deliverables)
- Developing: 2-2.9% (weak deliverables)
- Meets expectations: 3-3.5% (satisfactory deliverables)
- Exceeds expectations: 3.6-4% (above and beyond)



Deliverable 4: MVP/Project delivery (1-month development sprint)

Due: April 7 or April 9, 2020

NOTE: Students must attend both project delivery sessions. See the “high-level guidelines, principles, & assumptions” section at the beginning of this document for additional information

Date	Project delivery time	Team
April 7	11:30 am – 11:45 am	Group A
	11:45 am – 12:00 pm	Group B
	12:00 pm – 12:15 pm	Group C
	12:15 pm – 12:30 pm	Group D
	12:30 pm – 12:45 pm	Group E
April 9	11:30 am – 11:45 am	Group F
	11:45 am – 12:00 pm	Group G
	12:00 pm – 12:15 pm	Group H
	12:15 pm – 12:30 pm	Group I

Project delivery in-class activities

Team's will present and discuss their design progression and demo their created MVP solution to the entire class and to our key customer (PPT template is provided in URCourses)

Deliverables (in your Team's GitHub) must include, at a minimum for a “meets expectations” allocation:

- Complete and user friendly/highly readable GitHub complete with readme/installation files, user documentation (how-to documents), up-to-date (updated) and complete and updated projects documents as required by all previous deliverables
- Again, ensure you link your design ideas back to a minimum of three topics discussed in class relating to people centered design (affordances, gestalt, constraints, etc.)
- Project presentation file (PPT). Your slides should illustrate your team's progress throughout the project. See the PPT template in URCourses as a guide for creating your team's presentation
- Solution link/executable (link/executable file that opens a working/functional solution)
- MVP/Sprint code (in GitHub)
- Self/Peer review files (submitted in URCourses and not uploaded to GitHub)
- Good (Readable)-Excellent grammar, spelling, professionalism
- All files uploaded to GitHub
- The Instructor reserves the right to have a subjective grading discretion +/- 0.0 – 2.0%

Allocation: 8% (out of 20%)

- Fail: 0-3.9% (not submitted, missing during report-out (individual/group), and/or very weak deliverables)
- Developing: 4-5.5% (weak deliverables)
- Meets expectations: 5.6-6.9% (satisfactory deliverables)
- Exceeds expectations: 7-8% (above and beyond)
- Remember: The customer will choose the best solution(s) for the “best group project” grade allocation