PyBlocks

Milestone 6 Evaluation

Team Members

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Faculty Advisor

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Client

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Progress of Current Milestone (Progress Matrix)

Task	Completion Percentage	Michael	Bailey	Xinjie	Olisemeka	Todo
1. Add a lock to the execute button so it can't be pressed while an animation is playing and a cancel animation button.	95%	100%	0%	0%	0%	Glitches out sometimes, figure out why it's inconsistent.
2. Continue to improve the tutorial and try-it sections	100%	0%	100%	100%	100%	-
3. Go to a Middle School and have the students try our application.	100%	100%	0%	100%	100%	While we weren't able to go to a middle school we did have people evaluate the system.
4. Implement changes from our evaluation results.	100%	100%	100%	100%	100%	-
5. Change the saving and loading system so that any file can be loaded into the block editor or text editor.	50%	100%	0%	100%	100%	Block programs could be loaded in text but not vise-versa. Changed Scope.
6. Implement highlighting in the text only editor to make it easier to understand what is going on when coding in text only.	100%	100%	0%	0%	0%	-
7. Grid World Improvements: Map Switch functionality, Reset Map Button, Bigger Maps.	80%	100%	0%	0%	0%	Didn't get around to implementing different map sizes.
8. User and/or Developer Manual	100%	0%	100%	100%	100%	-
9. Demo Video	100%	100%	0%	100%	100%	-
10. Implement the discussed changes to the poster and e-book page.	100%	0%	0%	100%	100%	-

Discussion (at least a few sentences, ie a paragraph) of each accomplished task (and obstacles) for the current Milestone:

Tasks:

- 1. Add a lock to the execute button so it can't be pressed while an animation is playing and a cancel animation button.
    - The reset and cancel buttons work most of the time but encounter the most issues when you run a really short program, like one or two blocks. It is supposed to either reset the map to what it was before the program was run or reset to the starting layout but sometimes it doesn't reset correctly and just stops the character in between grid squares. It shouldn't be too hard to fix unless the issue is with the async nature of the grid world animations and then it might be a very annoying issue to fix.

- 2. Continue to improve the tutorial and try-it sections
    - While the tutorials and try-its will probably never be perfect and can always be improved on as new coding methods come out and we get better at writing these lower leveled instructions we didn't get any big complaints during our evaluation so we are considering them acceptable for now.

- 3. Go to a Middle School and have the students try our application.
    - We were unable to schedule going to an actual middle school but we were able to have an evaluation server up for about 8 hours over two days. We had about eleven people take part anonymously. Some of them were likely relatives of our classmates and some were likely some of our friends with little to no coding skills. We recorded about a 10% increase in speed during the second task for the group that used the Hybrid block which was what we were hoping for. 10% isn't a very big speed increase however so more testing should be done on a more reliable group.

- 4. Implement changes from our evaluation results.
    - Because we got the results we wanted and no one sent in any extra qualitative feedback we didn't have any changes to implement.

- 5. Change the saving and loading system so that any file can be loaded into the block editor or text editor.
    - There was a big issue with the loading of text code into the block editor part of this task. To do this would require a lot of research into how blockly generates the xml code for its blocks and how to parse out the text code and generate blocks in such a way that blockly can read and load it as well. We didn't have the time to implement this and it felt out of the scope of our project. Because of this I changed the task to making it easier to tell apart block and text codes in the saving and loading menus.

- 6. Implement highlighting in the text only editor to make it easier to understand what is going on when coding in text only.
    - This task wasn't very hard to implement. We used the codemirror library and it handles a lot of the work. The hard part was getting the text editor to work when it was hidden on the page load and then shown with a button click.

- 7. Grid World Improvements: Map Switch functionality, Reset Map Button, Bigger Maps.
    - We were able to complete the map switcher and reset button but didn't have time to implement different map sizes. This task wasn't crazy and nothing really went wrong with it. As we are getting closer to the end of the semester everything gets busier. If we had planned for it at the beginning of the project it would have been amazing to have a map editor so the user can make their own maps but when we realized that would be a great feature it was too late to implement it.

- 8. User and/or Developer Manual
    - We were able to complete this task with no issues. We focused on the User Manual side because that would be more useful to our audience.

- 9. Demo Video
    - We were able to complete this task and make a decent ~2min video.

- 10. Implement the discussed changes to the poster and e-book page.
    - This task was also completed on time with no big issues.

Discussion of contribution of each team member to the current Milestone: **(Paragraph/few sentences)**

- Michael Bardin:
    - Michael did a lot of work on implementing the changes to the main coding area, fixing up the poster and e-book page, filming the demo video, and working on the progress evaluation and presentation.

- Bailey Smith:
    - Bailey did some minor changes to the tutorials and the try-it sections, they also wrote the user manual and helped with the presentation.

- Xinjie Zhuang:
    - Worked on finishing the poster.

- Olisemeka Adugwo:
    - Worked on finishing the e-book page.

Lessons Learned

There are a couple of really good lessons that I learned throughout the past year working on Senior Design. The first one would be to have tried out more tools than we did. We did a lot of research into tools that we could use but we didn't test them all out. This was a problem as there are definitely libraries and such that would have been a better fit for our project.

One of the reasons why we struggled with finding the right tools was because we had basically no experience with writing web applications at the start of the project. It's a very overwhelming subject to start in as you need to learn at least three different coding languages. One of my biggest wishes for this project was to have taken the Web Applications class before starting the project, or at least talked to Dr. Fitzroy Nembhard who taught the class in Spring 2022 for his recommendations about the project.

Another lesson I learned was that who you pick to be on your team is a really important step of the project as if their skills aren't up to par with the project or they procrastinate their work too much it just creates a lot of stress for the team leader who has to make sure everything gets done.

Lastly, I learned the importance of designing well written Design, Requirements, and testing documents. Our documents that we wrote for milestone one were pretty weak and not very helpful to us. This made it a lot harder to organize the project and keep it in hand. An analogy I would use would be that the code grew like an unkempt field when it should have been like a nice manicured garden. This made the code get more and more complex and harder to work on as time went on. It wasn't so detrimental that it caused problems delivering on our milestones but it made it a lot more stressful.

Dates of meeting(s) with Client during the Current Milestone:

- See Faculty Advisor Meeting Dates Below.

Client Feedback on Current Milestone:

- See Faculty Advisor Feedback Below.

Dates of meeting(s) with Faculty Advisor for the Current Milestone:

- 04/04/22 12pm
- 04/18/22 12pm

Faculty Advisor feedback on each task for the current Milestone:

04/04/22 12pm

1. For Try-It sections, for example in the If Statement chapter, focus on the key idea to be practiced
    a. For If Statements, the condition / comparison is the important idea to be practiced.
    b. Exercise: print whether the basket is empty or not given a basket variable assigned to the number of flowers.
    c. If (blank1 > blank2): // expect basket > 0
    d. If blank1 has a number, suggest a variable; If blank1 has a name but not “basket”, suggest a different variable name. Similar suggestions for blank2.
2. Move the buttons (execute, save, load, etc.) to the top of the page.
    a. Organize into groups of buttons
    b. Look at interfaces of IDEs
3. Add some templates for if statements, for loops, and while loops to the left of the text editor.
4. Evaluation
    a. Send a message to Dr. Chan on recruiting highschool or middle school students to evaluate the project.
    b. If we don’t get a lot of responses, look towards our friends that are not computer science majors.
5. User Manual / Developer Manual
    a. Add screenshots of user interface to the user manual
        i. Add numbered circles to certain areas in the screen to highlight where to click.
    b. Add section numbers and sub-section numbers to each manual

    c. For the developer manual, include the source code repository, the organization of files, compilation instructions, and installation instructions.

04/18/22 12pm

1. Perform type checking for the try-it sections, like if a name is expected and the user enters an error the try-it should inform the user that It needs to be a string and not a number.
2. User Manual
    a. Replace the letters with numbers
    b. Add a block programming section, hybrid programming sections, and text programming section.
    c. Add a section about what you can do in the grid world, move the character, interaction blocks etc.
    d. Move the diagram for block editor into 1.c.
3. Developer Manual
    a. Add file names and short descriptions for each file. Under the different sections for each file.
    b. Add a dependency diagram for our files. (which files call each other).

Faculty Advisor Signature: _____ Date: _____

Evaluation by Faculty Advisor

- Faculty Advisor: detach and return this page to Dr. Chan (HC 214) or email the scores to pkc@cs.fit.edu
- Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Michael Bardin	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Bailey Smith	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Xinjie Zhuang	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Olisemeka Adugwo	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

Faculty Advisor Signature: _____ Date: _____