User Story and Iteration Plan

Product backlog:

1. As a student, I want to view the instructions before I run the algorithm so that I can have a clear idea of what part of the system can be customized by user.
2. As a student, I want to view the animation of Brute Force String Search algorithm so that I can understand the algorithm in a better way.
3. As a student, I want to view the animation of Horspool's String Search algorithm so that I can understand the algorithm in a better way.
4. As a student, I want to see the animation and pseudo code to be sychronized while the algorithm is running step by step.
5. As a student, I need the animation and pseudo code to be synchronized while collapse and expansion.
6. As a student, I need the animation to be crystal clear to explain the algorithm to me.
7. As a student, I want the string to be shown as arrays in squares.
8. As a student, I want there to be i and j pointers telling me where the algorithm is going.
9. As a student, I want a message at the end of the algorithm to tell me whether the string is successfully found or not.
10. As a student, I want there to be colors in animation helping me understand the algorithm.
11. As a student with color-blindness, I want the colors to be visible for me or I can choose my own color.
12. As a student, I want the use of explain box to be easy and clear.
13. As a student, I want the buttons to be buttons to be correctly put in a user-friendly pattern.
14. As a student, I want the messages pop out in the correct timing. e.g.once the data are loaded, there is a rather silly "Success!" message that comes up – before anything has happened.
15. As a student, I want the pseudo code to be fully shown on the screen.
16. As a student, I want the font size to be adjustable.
17. As a student, I want the REAL specification to be implemented correctly.

Story points

User story id	Story points	justification
1	2	Modifying the instruction is relatively simple documentation work. However, this needs to be done after all the user interface changes are finished.
2	0	We already have a basic implementation for brute force algorithm's animation from the previous work. There should not be much to do with the basic implementation.
3	50	Implementation of a new algorithm's animation is relatively time consuming.
4	20	Ensuring synchronicity between animation and code might require a change in structure.
5	10	This could be taken as an extension from user story 4.
6	5	This user story requires a good design of the animation together with the other user stories that enhance animation legibility.
7	10	Usually, shape changing should not be a big problem. However, the previous group working on AIA said this requires using another library. So 10 story points is assigned to this user story just in case.
8	15	Adding two pointers to the existing animation architecture while considering synchronicity.
9	5	Printing messages in the end of the animation should be relative simple.
10	25	Introducing colors into the current architecture is a new attempt. More story points should be assigned to this part.
11	10 /40	If we set an alternative choice for color-blind users, it won't be a lot of work. However, if we need a feature for users to set colors themselves, we need another extension on the user-interface. Based on the progress, one of the solutions will be chosen.
12	10	Requires redesign and changes on user interface.
13	5	Requires redesign and changes on user interface.
14	10	We could do preloading or change the output message.
15	5	Requires redesign and changes on user interface.
16	15	Requires a new user interface and a dynamic control of the fonts.
17	10	Requires a review on the specification and implementation of REAL.

207/237 story points in total.

Sprint plan

We will have two sprints for this project. Both sprints will have 4 weeks for development. The first sprint will start from Aug 23 to Sep 19 and the second sprint will start from Sep 19 to Oct 10.

In sprint 1, we will focus on the features that enhance the user experiences. It will also enable the team to quickly get familiar with the existing structure. This sprint includes the user story 4~10, which contains 105 story points.

In sprint 2, we will implement the animation for Horspool's string searching algorithm, try improving the user interface and fix possible bugs from sprint 1. It contains the user story 1~3 and 11~17 which contains 102/132 story points.

We assume each story point would need 1 man-hour. There are 5 team members in the team. And all of the team members are full-time master students. Considering other courses and assignments, we assume each of us would have 6 hours per week for this project. Thus, we would have 150 man-hours for each sprint. It is enough for finishing each sprint and would have spare time to handle changes in the development.

Plan for sprint 1

For sprint 1, the task breakdown is as follows. Our group members would follow this breakdown to finish the sprint 1.

Task breakdown:

As a student, I want to see the animation and pseudo code to be synchronized while the algorithm is running step by step.

As a student, I need the animation and pseudo code to be synchronized while collapsing and expanding.

As a student, I need the animation to be crystal clear to explain the algorithm to me.

As a student, I want the string to be shown as arrays in squares.

As a student, I want there to be i and j pointers telling me where the algorithm is going.

As a student, I want a message at the end of the algorithm to tell me whether the string is successfully found or not.

As a student, I want there to be colors in animation helping me understand the algorithm.

Plan for sprint 2

For sprint 2, the task breakdown is given below. Our group members would follow this breakdown to finish the sprint 2.

Task breakdown:

As a student, I want to view the instructions before I run the algorithm so that I can have a clear idea of what part of the system can be customized by user.

As a student, I want to view the animation of Brute Force String Search algorithm so that I can understand the algorithm in a better way.

As a student, I want to view the animation of Horspool's String Search algorithm so that I can understand the algorithm in a better way.

As a student with color-blindness, I want the colors to be visible for me or I can choose my own color.

As a student, I want the use of explain box to be easy and clear.

As a student, I want the buttons to be buttons to be correctly put in a user-friendly pattern.

As a student, I want the messages pop out in the correct timing. e.g.once the data are loaded, there is a rather silly "Success!" message that comes up – before anything has happened.

As a student, I want the peucedo code to be fully shown on the screen.

As a student, I want the font size to be adjustable.

As a student, I want the REAL specification to be implemented correctly.