

Biology Learning Games and Animation

CSCE 606 Software Engineering

Team Report : Iteration 3

Team Roles:

Product Owner: Prajwal Das

Scrum Master: FNU Nimisha

Developers: Shubham Gupta, Sai Harini Voruganti, Apurva Purushotama

Customer meeting date/time/place: [Link to Minutes of Meetings](#)

We had a meeting over Zoom with Dr. Walker on 11th March, 2022 to discuss progress for iteration 1, and user stories to implement for iteration 2. Further updates and discussions about the iteration were addressed over email as the meeting on April 1st, 2022 was canceled.

Important Links:

GitHub repo: <https://github.com/prajwaldas95/BiologyLearningGamesAndAnimations>

Pivotal Tracker: <https://www.pivotaltracker.com/n/projects/2556976>

Slack:

https://join.slack.com/t/seproject-1oc6126/shared_invite/zt-141c9mqw1-YZvyPf_VxICrw8ThiZ63Vg

VetMed Website: <https://vetmed.tamu.edu/peer/one-health/>

SpreadSheet(Deployment Status):

https://docs.google.com/spreadsheets/d/10NGrOZEGIdePJ_KSnpPO_ENLpEQdU_VA3r1yopvTpGY/edit#gid=0

Inventory Sheet: SpreadSheet:

https://docs.google.com/spreadsheets/d/10NGrOZEGIdePJ_KSnpPO_ENLpEQdU_VA3r1yopvTpGY/edit#gid=0

Summary:

Deployment: We obtained the email address of Daniel Shuta's supervisor- (nritter@cvm.tamu.edu) and for deployment we will contact them in further iterations. We know that the deployment on Stepstone and Peer website has dependency on Daniel and Samiksha respectively. We've gone through the previous team's documentation regarding deployment tutorials and deployment will be done in the next iteration since it has dependency on people outside the team.

Testing:

As discussed with Prof. Walker, the testing would be done manually.

There is no need for a design diagram as the biology animation games are small animations of their own.

Status:

User Story	Status (Not started/Started/Developed/Deployed/Completed)
1. Infectious diseases module - Knowledge Check: What are the data?	Developed
2. Infectious diseases module - Knowledge Check: Which axis is the right?	Developed
3. Infectious diseases module - Knowledge Check: Name that variable	Developed
4. Infectious diseases module - Knowledge Check : Calculate the Value	Developed
5. Testing of Sprint 1 user stories locally and on Stepstone testing environment	Completed
6. Clinical Trial module - Hypothesize Knowledge Check	Developed
7. Clinical Trial module - Identify the Variables	Developed
8. Clinical Trial module - Prove that you are a scientific method expert!	Developed
9. Clinical Trial module - Organize the	Developed

Details of Clinical Trial Phases	
10. Clinical Trial module - Think about it	Developed
11. Clinical Trial module - Did you grasp the concepts?	Developed
12. Clinical Trial module - Can you count the costs?	Developed
13. Ecology module - Ecological Succession Knowledge Check	Developed
14. Ecology module - Producers Knowledge Check	Developed
15. Ecology module - Living or Non-Living Knowledge Check	Developed
16. Stress module - Label the Neuron	Not started
17. Stress module - Keep it in Balance	Not started
18. Stress module - Can You Sense the Answers	Not started
19. Inventory Check : Mapping existing animations which have bugs and needs to be fixed	Completed
20. Inventory Check : Mapping new animations to be developed	Completed

For this iteration 2, we picked the following user stories:

UserStory No. 6: “Develop Clinical Trial module - Hypothesize Knowledge Check”

UserStory No. 7: “Develop Clinical Trial module -Identify the Variables”

UserStory No. 8: “Develop Clinical Trial module - Prove that you are a scientific method expert!”

UserStory No. 10: “Develop Clinical Trial module - Think about it”

UserStory No. 11: “Develop Clinical Trial module - Did you grasp the concepts?”

In this iteration, we have focused on developing new animations for the “Clinical Trial module”. With that, all the animations for that module will be developed to work on Wordpress and Stepstone.

User Stories:

1. **[Prajwal: 3 pts] Feature - UserStory No. 6:** Develop Clinical Trial module - Hypothesize Knowledge Check

As an Instructor

I want the students to use interactive animations for the Clinical Trial module - Hypothesize Knowledge Check

So that the students can understand the concepts better.

Progress: Developed

Design diagram:

Place the words into the correct category

Abiotic	Biotic

Bacteria
Worm
Deer
Grass
Sun
Oxygen
Fire
Rabbit
Fungi
Soil
Temperature
Water

Submit



Place the words into the correct category

Abiotic	Biotic
Rabbit	Bacteria
Sun	Deer
Oxygen	Fire
	Temperature

Worm
Grass
Fungi
Soil
Water

Submit

Explanation:

We have developed a drag and drag animation for the slide "Living or Non-Living Knowledge Check?" from the Ecology module. The Student has to drag the answers from the "Answers" box and place them onto the correct boxes corresponding to Biotic and Abiotic.

Respective prompts are shown depending on the questions that the students get right.

The answers and the background photos are parametrized so that the code is easy to maintain and modify in the future. The animation has been developed such that resizing the window doesn't affect the working of the animation and it is also compatible with touch devices.

The color combinations, fonts and image sizes are chosen keeping accessibility in mind.

2. **[Apurva: 3 pts] Feature - UserStory No. 8:** Develop Clinical Trial module - Prove that you are a scientific method expert!

As an Instructor

I want the students to use interactive animations for the Clinical Trial module - Prove that you are a scientific method expert!

So that the students can understand the concepts better.

Progress: Developed

Design diagram:

Prove You Are a Scientific Method Expert!

Correctly order these research steps according to the scientific method.

1. Send your complete laboratory report to a national magazine for peer review.
2. Place an equal number of alligator eggs in incubators set at 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36 degrees Celsius.
3. What incubation temperatures will produce a female alligator to hatch from an alligator egg?
4. Plot alligator gender versus temperature results in a graphic format.
5. Conduct research on alligator reproduction and development.

- A. 3, 5, 2, 4, 1
- B. 2, 3, 1, 5, 4
- C. 5, 3, 4, 2, 1
- D. 3, 2, 1, 4, 5



Prove You Are a Scientific Method Expert!

Correctly order these research steps according to the scientific method.

1. Send your complete laboratory report to a national magazine for peer review.
2. Place an equal number of alligator eggs in incubators set at 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36 degrees Celsius.
3. What incubation temperatures will produce a female alligator to hatch from an alligator egg?
4. Plot alligator gender versus temperature results in a graphic format.
5. Conduct research on alligator reproduction and development.

- ☒ 3,5,2,4,1
- ☐ 2,3,1,5,4
- ☐ 5,3,4,2,1
- ☐ 3,2,1,4,5



Submit

Explanation:

We have developed a drag and drag animation for the slide “Prove that you are a scientific method expert!” from the Clinical Trials module. The Student has to select the correct answer which represents the order of research steps. Radio buttons are used for selecting the answer. Respective prompts are shown depending on the questions that the students get right.

The answers and the background photos are parametrized so that the code is easy to maintain and modify in the future. The animation has been developed such that resizing the window doesn’t affect the working of the animation and it is also compatible with touch devices.

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3. [Sai Harini Voruganti: 3 pts] Feature - UserStory No. 7: Develop Clinical Trial module - Identify the variables?

As an Instructor

I want the students to use interactive animations for the Clinical Trial module - Identify the variables?

So that the students can understand the concepts better.

Progress: Developed

Design diagram:

Identify The Variables

An experiment is performed to determine how different liquids affect plant height. Each plant is given a different liquid; water, apple juice, or milk. Each plant has the same amount and type of soil, amount of sunlight, and amount of liquid. Drag and drop the experiment's variables into the correct column.

Independent	Dependent	Control

Variables

- Soil
- Water
- Plant height
- Sunlight
- Apple juice
- Amount of liquid
- Milk



Identify the variables

An experiment is performed to determine how different liquids affect plant height. Each plant is given a different liquid; water, apple juice, or milk. Each plant has the same amount and type of soil, amount of sunlight, and amount of liquid.

Independent	Dependent	Control
Amount of Liquid	Plant Height	Soil
Milk		Water
Sunlight		Apple Juice

Submit

Explanation:

We have developed a drag and drop animation for the slide “Identify the variables?” from the Clinical Trial module. The Student has to drag the answers from the “Answers” box and place them onto the correct boxes and click on the submit button to check their answers.

Respective prompts are shown depending on the questions that the students get right.

The answers and the background photos are parametrized so that the code is easy to maintain and modify in the future. The animation has been developed such that resizing the window doesn’t affect the working of the animation and it is also compatible with touch devices.

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4. **[Nimisha: 3 pts] Feature - UserStory No. 10:** Develop Clinical Trial module - Think about it

As an Instructor

I want the students to use interactive animations for the Clinical Trial module - Think about it

So that the students can understand the concepts better.

Progress: Developed

Design diagram:

What is the benefit to using animal subjects in testing drugs, treatments and devices?

Choose all correct answers.

- ☐ Animals are inexpensive.
- ☐ Animals don't experience side effects to medications.
- ☐ Animal organ systems are similar to humans
- ☐ Animals have many of the same diseases as humans.

Submit



What is the benefit to using animal subjects in testing drugs, treatments and devices?

Choose all correct answers.

- ☒ Animals have many of the same diseases as humans.
- ☒ Animal organ systems are similar to humans
- ☐ Animals are inexpensive.
- ☐ Animals don't experience side effects to medications.

Submit

You Selected right option!

Explanation:

We have developed a checkbox select animation for the slide “Think about it” from the Clinical Trial module. The Student has to select the checkboxes for the correct answers from the various options listed. The student has to click on the submit button to check their answers. The answer options are shuffled on each page refresh so that the students don’t memorize the correct answer sequence.

Respective prompts are shown depending on the questions that the students get right.

The answers and the background photos are parametrized so that the code is easy to maintain and modify in the future. The animation has been developed such that resizing the window doesn’t affect the working of the animation and it is also compatible with touch devices.

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5. **[Shubham: 3 pts] Feature - UserStory No. 9:** Develop Clinical Trial module - Hypothesize Knowledge Check

As an Instructor

I want the students to use interactive animations for the Clinical Trial module - Hypothesize Knowledge Check

So that the students can understand the concepts better.

I hypothesize that if you have been paying attention then you'll make the right choice!

Choose the hypothesis stated most correctly.

- ☐ Wounds should be covered with bandages to prevent scarring.
- ☐ All fish eat meat.
- ☐ Six hours of sleep improves test scores.
- ☒ Elementary aged children who eat dessert after lunch are more hyperactive than those who don't.

Submit



I hypothesize that if you have been paying attention then you'll make the right choice!

Choose the hypothesis stated most correctly.

- ☐ Wounds should be covered with bandages to prevent scarring.
- ☐ All fish eat meat.
- ☐ Six hours of sleep improves test scores.
- ☒ Elementary aged children who eat dessert after lunch are more hyperactive than those who don't.

Submit

You Selected right option!

Progress: Developed

Design diagram:

Explanation:

We have developed a checkbox select animation for the slide "Hypothesize Knowledge Check" from the Clinical Trial module. The Student has to select the checkboxes for the correct answers from the various options listed. The student has to click on the submit button to check their answers. The answer options are shuffled on each page refresh so that the students don't memorize the correct answer sequence.

Respective prompts are shown depending on the questions that the students get right.

The answers and the background photos are parametrized so that the code is easy to maintain and modify in the future. The animation has been developed such that resizing the window doesn't affect the working of the animation and it is also compatible with touch devices.

The color combinations, fonts and image sizes are chosen keeping accessibility in mind.

Code Quality Report:

(1) **Entire Project** :The detailed report is also available [here](#)

(2) **User Stories picked up in this iteration:** The detailed reports for user stories picked up by each developer can be found [here](#).