

# Biology Learning Games and Animation

## CSCE 606 Software Engineering

### Team Report : Iteration 4

#### 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 22nd April, 2022 to discuss progress for iteration 3, and user stories to implement for iteration 4.

#### Important Links:

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

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

**Slack:**

[https://join.slack.com/t/seoproject-1oc6126/shared\\_invite/zt-141c9mqw1-YZvyPf\\_VxICrw8ThiZ63Vg](https://join.slack.com/t/seoproject-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/10NGrOZEGldePJ\\_KSnpPO\\_ENLpEQdU\\_VA3r1yopvTpGY/edit#gid=0](https://docs.google.com/spreadsheets/d/10NGrOZEGldePJ_KSnpPO_ENLpEQdU_VA3r1yopvTpGY/edit#gid=0)

**Inventory Sheet: SpreadSheet:**

[https://docs.google.com/spreadsheets/d/10NGrOZEGldePJ\\_KSnpPO\\_ENLpEQdU\\_VA3r1yopvTpGY/edit#gid=0](https://docs.google.com/spreadsheets/d/10NGrOZEGldePJ_KSnpPO_ENLpEQdU_VA3r1yopvTpGY/edit#gid=0)

**Getting Started Documentation:**

[https://docs.google.com/document/d/17tNf0YmwX\\_yatwP03p86XzC0Kv1Ulpx/edit#heading=h.4u3pp3kdat73](https://docs.google.com/document/d/17tNf0YmwX_yatwP03p86XzC0Kv1Ulpx/edit#heading=h.4u3pp3kdat73)

### Summary:

**Deployment:** We obtained the email address of Daniel Shuta's supervisor ([nritter@cvm.tamu.edu](mailto: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 Details of Clinical Trial Phases	<b>Developed</b>
10. Clinical Trial module - Think about it	<b>Developed</b>
11. Clinical Trial module - Did you grasp the concepts?	<b>Developed</b>
12. Clinical Trial module - Can you count the costs?	<b>Developed</b>
13. Ecology module - Ecological Succession Knowledge Check	<b>Developed</b>
14. Ecology module - Producers Knowledge Check	<b>Developed</b>
15. Ecology module - Living or Non-Living Knowledge Check	<b>Developed</b>
16. Stress module - Label the Neuron	<b>Developed</b>
17. Stress module - Keep it in Balance	<b>Developed</b>
18. Stress module - Can You Sense the Answers	<b>Developed</b>
19. Inventory Check : Mapping existing animations which have bugs and needs to be fixed	<b>Completed</b>
20. Inventory Check : Mapping new animations to be developed	<b>Completed</b>
21. Infectious Diseases module : Knowledge Check: Infectious diseases	<b>Completed</b>
22. Infectious Diseases module : Knowledge Check: Virus	<b>Completed</b>

For this iteration 4, we picked the following user stories:

*UserStory No. 16: “ Improve Stress module - Label the Neuron”*

*UserStory No. 17: “Develop Stress module - Keep it in Balance”*

*UserStory No. 18: “Develop Stress module - Can You Sense the Answers”*

*UserStory No. 21: “Develop Infectious Diseases module : Knowledge Check: Infectious diseases”*

UserStory No. 22: "Develop Infectious Diseases module- Knowledge Check: Virus"

In this iteration, we have focused on developing new animations for the "Stress" and "Infectious Diseases" modules. With that, all the animations for these modules will be developed to work on Wordpress and Stepstone.

**User Stories:**

1. [Shubham: 3 pts] Feature - UserStory No. 16: Improve Stress module - Label the Neuron

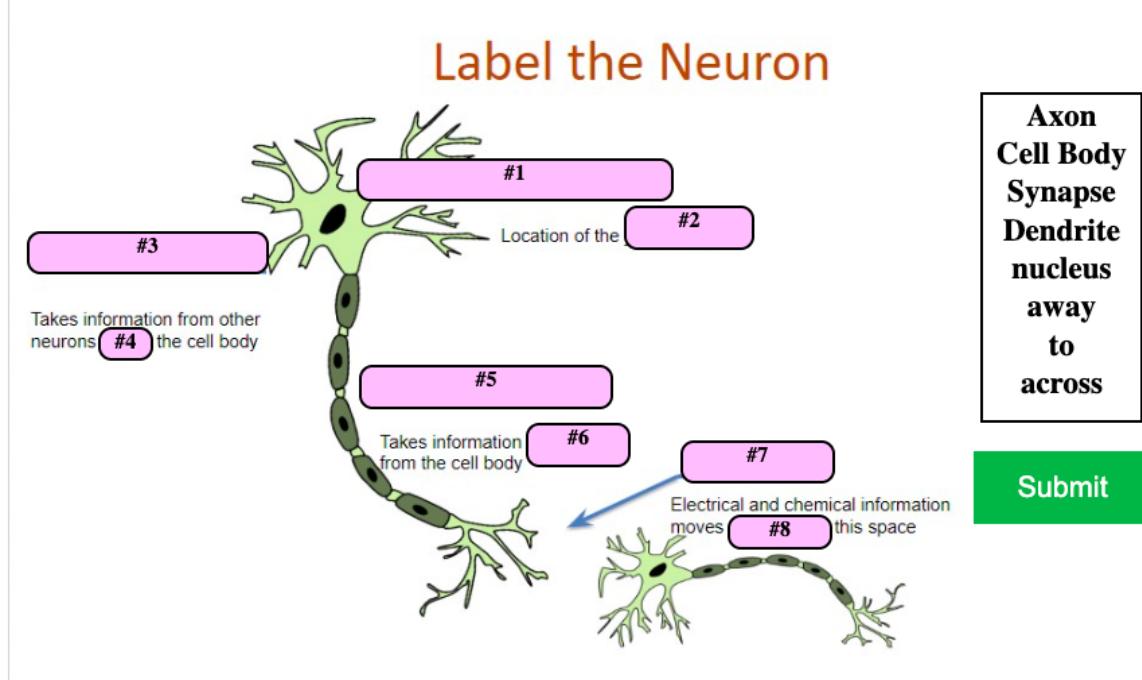
*As an student*

*I want the to reset the game*

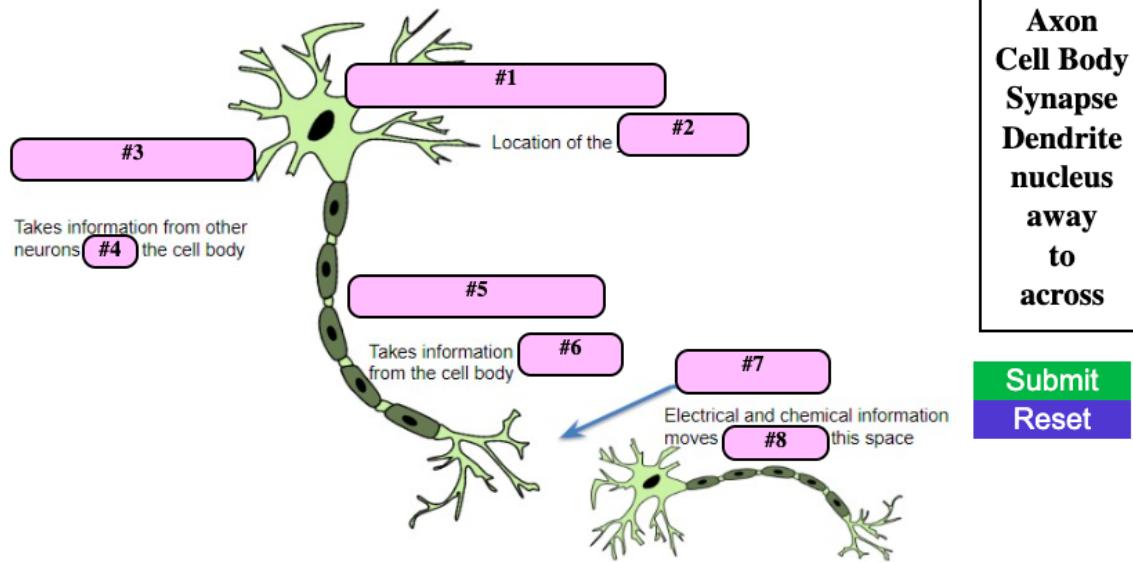
*So that I can recheck my understanding of the concepts better.*

**Progress: Developed**

Design diagram:



## Label the Neuron



### Explanation:

We have developed a drag and drop animation for the slide "Label the Neuron" from the Stress module. The Student has to drag the answers from the "Answers" box and place them onto the correct boxes corresponding. The student should also able to reset the 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.

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

## 2. [Apurva: 3 pts] Bug Fix - UserStory No. 17: Develop Stress module - Keep it in Balance

*As an Instructor*

*I want the students to use interactive animations for the Stress module - Keep it in Balance*

*So that the students can understand the concepts better.*

### Progress: Developed

### Design diagram:

□ Keep it in Balance

Please place the correct answers in the blank below questions

What is the term which means maintaining a constant internal environment despite changes in the external environment?

Answer: \_\_\_\_\_

Which two body systems help regulate the internal environment?

Answer: \_\_\_\_\_

Balance  
Muscular system  
Homeostasis  
Endocrine system  
Stimulus  
Nervous system  
Reflex arc  
Cardiovascular system

Submit

BACK MENU CONTINUE



□ Step Title Here

Text content goes here, above the mini-app area.

Please place the correct answers in the blank below questions

What is the term which means maintaining a constant internal environment despite changes in the external environment?

Answer: \_\_\_\_\_ Homeostasis

Which two body systems help regulate the internal environment?

Answer: \_\_\_\_\_ Endocrine system  
\_\_\_\_\_ Nervous system

Balance  
Muscular system  
Stimulus  
Reflex arc  
Cardiovascular system

Submit

You matched 3/3 options correctly!

BACK MENU CONTINUE

### Explanation:

We have fixed the existing bugs to make the drag and drop animation for the slide “Keep it in Balance” from the Stress module. The existing code did not have the functionality required for the submit button and it was not compatible with touch devices. The answers 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.

3. [Sai Harini Voruganti: 3 pts] Feature - UserStory No.21: Develop Infectious Diseases module :

Knowledge Check: Infectious diseases

*As an Instructor*

*I want the students to use interactive animations for the Infectious Diseases module - Knowledge Check : Infectious Diseases*

*So that the students can understand the concepts better.*

**Progress: Developed**

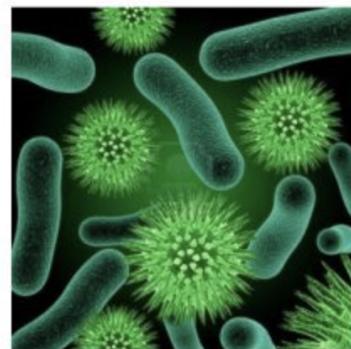
Design diagram:

## Knowledge Check: Infectious Diseases

Choose the correct answer choice for the following question.

1. Which of the following are examples of microorganisms that can be pathogenic and cause diseases?

- a. fungi
- b. viruses
- c. bacteria
- d. all of the above



**Choose the correct answer choice for the following question.**

**Which of the following are examples of microorganisms that can be pathogenic and cause diseases?**



- Fungi
- Viruses
- Bacteria
- All of the above

**Submit**

**Explanation:**

We developed a MCQ animation for the slide “Knowledge Check : Infectious Diseases?” from the Infectious Diseases module. The Student has to select the answer from the available options 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. 18: Develop Stress module - Can You Sense the Answers*

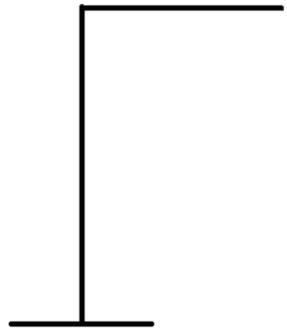
*As an Instructor*

*I want the students to use interactive animations for the Stress module - Can You Sense the Answers*

*So that the students can understand the concepts better.*

**Progress: Developed**

Design diagram:

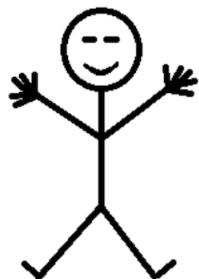


The peripheral nervous system is made up of \_\_\_\_\_ and has two divisions: the \_\_\_\_\_ and \_\_\_\_\_.

Wrong Guesses: 0 of 8



Thanks for  
saving me!



The peripheral nervous system is made up of **nerves** and has two divisions: the **autonomic** and **somatic**.

Wrong Guesses: 7 of 8

Reset

**You win! Hope you enjoyed playing.**

**Explanation:**

We have added a fill in the blank animation for the slide “Can You Sense the Answers” from the Stress module. The Student has to guess the correct letters for the blanks. They have only 8 incorrect attempts to make after which the hangman game is completed.

There is a reset button to restart the game.

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

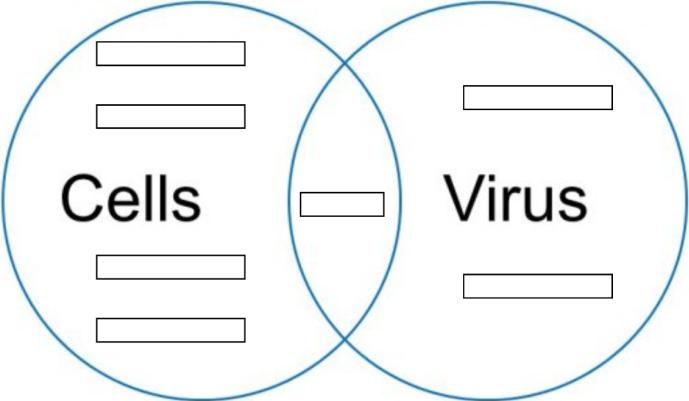
5. [Prajwal: 3 pts] Feature - *UserStory No. 22: Develop Infectious Diseases module- Knowledge Check: Virus*

*As an Instructor*

*I want the students to use Venn diagram interactive animations for the Infectious Diseases module - Knowledge Check: Virus*

*So that the students can understand the concepts better.*

### Knowledge Check: Virus



A Venn diagram consisting of two overlapping circles. The left circle is labeled "Cells" and the right circle is labeled "Virus". Each circle contains four empty rectangular boxes for dragging words. The intersection area of the two circles also contains four empty rectangular boxes.

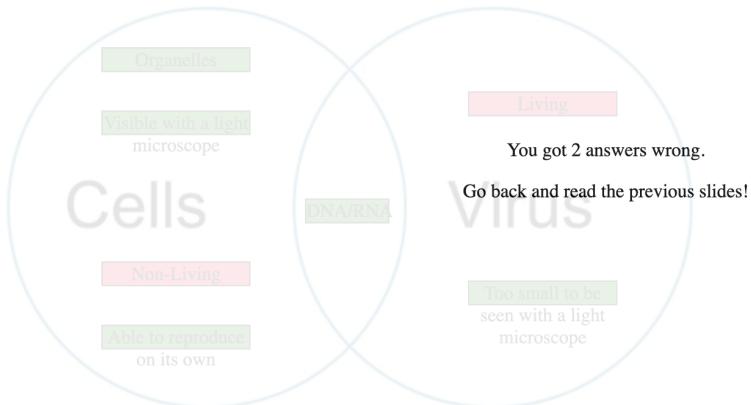
**Word Bank - Drag and place it in Venn Diagram**

- Too small to be seen with a light microscope
- DNA/RNA
- Able to reproduce on its own
- Living
- Visible with a light microscope
- Non-Living
- Organelles

Submit



## Knowledge Check: Virus



Word Bank - Drag and place it in Venn Diagram

### Progress: Developed

Design diagram:

Explanation:

We have developed a Venn diagram animation from the Infectious diseases module. The students have to drag and drop the answers from the answers box to the correct place/portion in the Venn diagram.

Respective prompts are shown depending on the answers 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](#).