

- **Team Name:** Body Builders

- **Team Members:** Phi Doan
Bradley Johnson
Olivia Pinson

- **Project Title:** Connecting DNA to Physical Appearances

- **Problem:** What problem are we trying to solve?

Understanding DNA data can be overwhelming. Incorporating this data is important in order to create tools that can be used in healthcare and genetics. We will link them by creating an app which can display physical appearance from raw DNA data, and vice versa.

- **Motivation:** Why is this a problem?

Creating physical appearances from DNA is not something done easily without a computer.

Fields of science may seem to be very distant, but this would link the fields of computer science and biology by showing that DNA is just a data set.

May make understanding scientific data and DNA less intimidating for those who might have access to their own DNA and are curious or are trying to learn about it.

- **Features:** When do we know that we have solved the problem? [0.25 point]

The problem will be solved once the program can accurately perform the following functions:

- Construct DNA data based on specified traits (eye color, hair color, etc.). When a user picks traits, the app will go through stored DNA data and extract what DNA sequences would need to be used and display them.
- User inputs DNA data, and the app shows the traits by building the person. Matches DNA sequences to physical traits, and uses SFML to display a person.

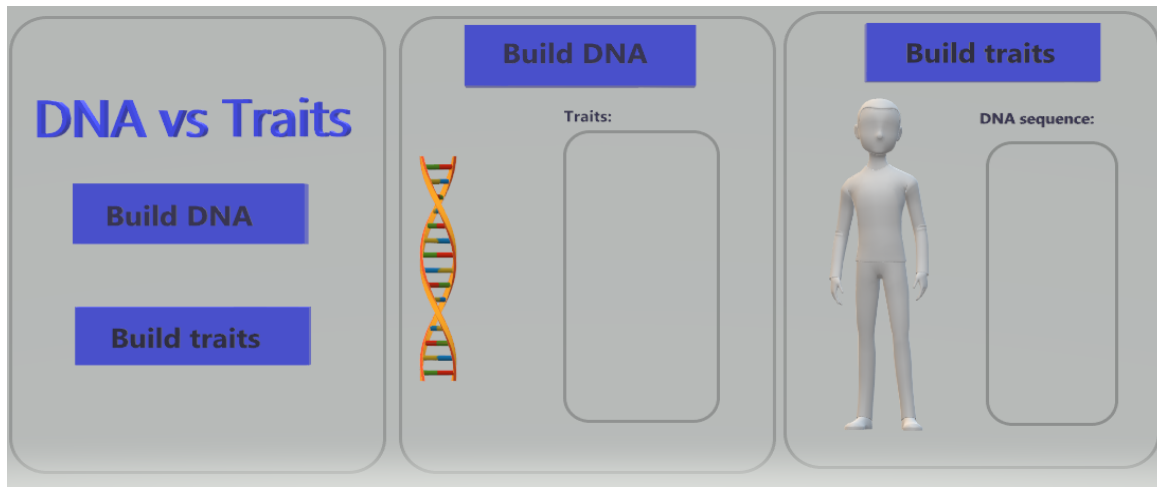
- **Data:**

- The data we will be using is randomly generated DNA data.

- **Tools:** Programming languages or any tools/frameworks we will be using [0.25 point]

- C++
- SFML

- **Visuals:** Wireframes/Sketches of the interface



- **Strategy:** Preliminary Data Structures/Algorithms we may want to implement
 - Red black tree
 - BST
- **Distribution of Responsibility and Roles:** Who is responsible for what? [0.25 points]
 - Phi: making SFML sprites, interface, Red Black Tree, source control
 - Bradley: match DNA sequences to physical traits, and put together a picture with SFML. Using BST, Red Black Tree. Testing.
 - Olivia: creating SFML sprites, BST, Red Black Tree, testing.
- **References**
 - Bradley's DNA data
 - <https://www.sfml-dev.org/>