**Requirements for the core game**

* Core backend to support a small card game. (Including support for different resolutions and aspect ratios).
* Allow the player to be asked whether they want ‘higher’ or ‘lower’, then proceed to showcase the outcome of this, keep track of the new score and repeat until all cards were played.
* Transition to the end diagnosis screen should all the cards be played and show the correct outcome depending on how the player did.
* Allow the different genetics and environmental cards to be viewed throughout and once the diagnosis screen comes up.
* A functional main menu, which allows the game to begin, (perhaps after the player has selected a gender, to showcase the correct cards.) This menu also has credits, help and quit game buttons / screens.
* Ability to show off all cards from a deck of cards and have nice graphical transitions when showing off these cards and others.

**Ideas that expand on the core game concept**

**Score Keeping System**

A score keeping system which persists beyond individual games, this could be used to compare the scores of a class of students and perhaps generate a graph based off that information.

If each person is playing on one computer, they will need to take turns and to differentiate the different people, names should be taken before each person begins.

**Multiple Playing sessions occurring at once**

Ability to have multiple games occurring at once and have their results sent to a single computer. This could be useful, should a class have a computer room or a selection of laptops where each student can play and have their result sent to a central PC that would be running in ‘Teacher mode’ which collects these results for comparison.

This may prove to be a fairly time-consuming task to complete from a coding perspective but certainly doable. On the main-menu there could be an option to run the game in ‘Teacher Mode’ and they receive a code which can be used which each of the other computers, which run the game normally. Using the network and this code, they can each connect to the teacher’s computer and send the output automatically and in real-time.

**Database storage and internet connection**

It may be possible have the results of each game stored in a database on the internet which you can access and view the results of anyone who submitted their result. This would be a somewhat small task to implement but may require a small ongoing cost to maintain a database.

**iOS and Android versions**

Allowing support for mobile could be quite nice but is time consuming, I could see it being quite good in classrooms or other places where iPads are used. An iOS and Android development licence would be required in order to have the game hosted on their respective app stores. The iOS one in particular requires an annual fee of $99 a year. It’s quite possible the University already has an account they could use.

**Web build**

When I developed the security card game for South Wales Police one of the requirements was to allow the game to be played on the internet. This proved quite nice as it allows the game to be played by anyone from anywhere. We hosted the game on [https://itch.io](https://itch.io/) which allows for free hosting and has quite a large audience when to comes to playing online games.

**Allow genetic and environmental cards to be edited or added from a file**

It would be possible to allow the cards to be edited and even new cards added yourself without having to touch the code at all. This can be done with an excel spreadsheet which the game reads and then updates appropriately.

**Improved Graphics with characters and animations**

Rather than simply picking higher or lower there could be a character which move around the screen and presses a button for higher and another for lower, bringing a bit of life to the scene.

Additionally, should this occur when the player chooses male or female at the beginning which would normally only affect the type of cards shown, it could also change the gender of the character.

**Music and sound effects**

I don’t believe sounds effects would be essential by any means but could pose a nice addition, particularly if kids will be playing.