IOWA STATE UNIVERSITY

AEROSPACE ENGINEERING DEPARTMENT
COMPUTATIONAL TECHNIQUES FOR AEROSPACE DESIGN
AERE 361

PROJECT PROPOSAL
TEAM NAME HERE

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I ABSTRACT

I can cite! **einstein** or this **dirac**.

II INTRODUCTION

Reaction time slowly demises as a person gets older. This can be detrimental as daily life becomes harder and harder. As a way to practice reaction time and test a person's reaction, our team, The Bleacher Creatures from Mars, are developing a fun game. The game known as Bleacher Creatures Destroy Features will be similar to the classical game breakout!

The game will be created and tested on an Adafruit Clue board. Using buttons, sensors, and the display we will recreate a game like Breakout. In the game a person will control a moving platform, which will go back and forth across the screen. There will then be a ball bouncing around which can break blocks at the top. The person must use the platform to bounce the ball to break all the blocks to win. This game will be fun for all ages and will be great practice for a person's reaction time.

III FEATURES

Your Features section must include a listing of at least three key features that makes your project unique. Each item needs to be backed up with a description of what it will do and why. A listing of just three items is not enough, you need to describe what those features are and why your group feels they are needed. For that reason your features should have a paragraph for each key item that describes what that key feature is. A key feature should be something that is significant to your project. For example, a key feature an autopilot system is the ability to be able to set an altitude and the autopilot will automatically set the airspeed. That is a significant feature that has a large impact on that system.

IV PROBLEM STATEMENT

V PROBLEM SOLUTION

One of the most enjoyable ways to increase someones reaction time is games. That is why our solution is a take on a fun and simple game, breakout. The display will be on an Adafruit Clue board and the controller will be a pair of buttons if possible otherwise it will interface with a computer keyboard. Figure 1 shows the screen of the game. As one can see a circle bounces off the walls around the screen and the green paddle at the bottom of the screen. The buttons then allow the user to move the paddle back and forth and try to hit the blocks. When a block is hit, it disappears. The goal of the game is to clear all the blocks from the screen. The parts needed for the game are listed in table 1.
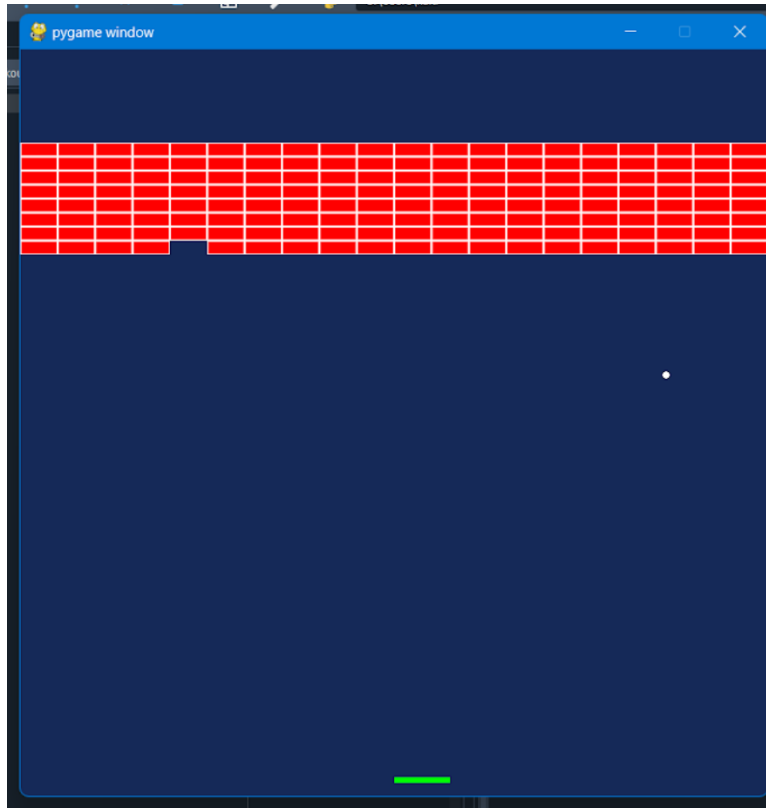
Figure 1: Example breakout game running.

VI CONCLUSION

Testing and practicing reflexes can be very important to those who have seen a decline in that action. To help test and improve reflexes our team decided a game would be a great test, not to mention fun so we have decided to base our game off of one of the classics, breakout. Even more convenient, our game will be portable so our users can improve their reflexes whenever they have a free moment.

Our project will be programmed on the Adafruit Clue board and will utilize the screen and take user input through the buttons on the board. An important thing to ensure is that the game runs at the correct speed so that our main goal of improving and testing reflexes is effective. Overall our game will be an effective way of improving and testing reflexes, and will present challenges for our group in utilizing the screen, button inputs, and ensuring the game runs smoothly using the low power processor.

Part List	
Part Description	Quantity
Adafruit Clue	1
AAA Battery Holder	1
USB Cable	1
Need 1 of the Items Below	
Buttons	2
Keyboard	1

Table 1: The bill of materials for this project.