Project 2 – Boingy Bouncer
Taking You Through the Applied Design Stages

As you design and program your Boingy Bouncer project, you are going to complete some of the Applied Design stages.

By following the steps below and answering the questions, your Boingy Bouncer project will be better planned, better designed and better implemented.

You will revisit these Applied Design stages throughout the course.

Your task is to create a program, similar to Pong, for an end-user (a friend, classmate, teacher, relative, etc). You can create a program just like Pong (same rules, same game play, etc) and simply alter the sprites if you would like (like replace the ball with a cupcake, or something similar) or you can reinvent the game with slightly different rules, etc. It will be up to you, and your end-user.

UNDERSTANDING CONTEXT:
Before beginning your program, select an individual and interview them to understand their likes/dislikes, needs/wants and interests.
Below you will find a series of questions. As you interview your selected individual, write down their responses these questions. Their responses will help you design and plan an animated story that they will enjoy.

What are your favourite sports or physical activities?

What are your favourite video games or computer activities?

Explain to the end-user how the game of Pong works (the setup, the rules, etc). Ask them the following and record their response:
How would you alter this game to make it more enjoyable for you? What rules would you change? What graphic components (sprite, background) would you change?

DEFINING:

Based on the interview responses above, write down any and all projectiles, "paddles", backgrounds or rules that you think might be interesting to include in a Boingy Bouncer game for this individual.

Identify the characters or components in the brainstorming above that might be difficult to program based on your current knowledge. What can you do to solve this problem before starting to program?

IDEATING:

Based on the interview responses and brainstorming above, provide a brief description of the components that you are going to include in your version of Boingy Bouncer.

Explain why you chose these changes based on the interview responses, brainstorming and after identifying possible difficulties that you might encounter.

IDEATING/PROTOTYPING:
Part of programming is breaking down a problem into smaller pieces that you can solve separately. You then combine these smaller pieces into larger components until you have the whole program put together.

For the Boingy Bouncer game, use this planning worksheet to help design your code BEFORE you start writing. Read over **all** the requirements in the left column. Take a few minutes to think before filling out the rest of the worksheet. The first row is an example.

Game component	What's going on?	What owns the logic?	What triggers the change?	What could be tricky?	Pseudocode

Players can control "paddles" with required keys	Paddle moves up or down	Paddle sprite	Press **up** or **down arrow** Press **w** or **s** keys	When paddle gets to the top or bottom it can't move anymore	Left paddle variable: *left speed*
					
					if sprite is hitting top edge of canvas **OR** hitting bottom edge of canvas **then** reverse paddle movement
					
					When up arrow is pressed
					  If paddle is moving down
					    stop paddle
					  else
					    change direction to up

Projectile begins play at a certain location at start of game and after each point					
Projectile rebounds off borders and "paddles"					
Projectile increases speed at some point in the game					

A point can be scored after a certain event					
Game ends when one player reaches a given score					
Winning and losing player is shown when the game ends					
Players can begin a new game					

Begin work programming your Boingy Bouncer. Make sure that you program in small parts and that you continually run and debug your code.

TESTING:

Find a friend or classmate and have them test your Boingy Bouncer game. Ask them to comment on projectile, the "paddle", the sprites, the programming and the overall appeal of the story. Write down some of their comments below.

Considering the observations from your friend or classmate above, indicate any changes you might make to the program. If you are no going to make any changes, indicate why.

It's now time to have your end-user test your Boingy Bouncer game. Ask them to comment on projectile, the "paddle", the sprites, the programming and the overall appeal of the story. Write down some of their comments below.

Considering the observations from the end-user above, indicate any changes that you might make to the program. If you are no going to make any changes, indicate why.

SHARING:
When you have completed your Boingy Bouncer game, and made all final changes, share it with your end-user and your friends and classmates. Indicate some of the feedback that you receive on your game in the space below.

Based on the feedback you have noted above, are there any people or groups (other than your end-user) that might enjoy this game?