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Course: ICS 4U
Program: Final Project Proposal

i) DESCRIPTION

The program that I will be creating is called "Stack". The rules for the game are that there will be moving cubes coming from two sides(left and right). Both of them will be moving at an angle back and force within the frame. There will be a base at the bottom of the frame. When the players press the Space button, the cube will fall and the computer will identify either the cube matches the base or not. If it matches, the cube will overlay on the base perfectly. If not, the part that the cube overlay will stay on the base and become part of the base, the rest of the parts will be gone and the surface area for the base that intercepts with the next cube will become smaller. Then the next cube will automatically generate and starts to move. The game ends when the cube doesn't match the base at all. The points that the player will get are the cubes that successfully lay on the base.

ii) DETAILS

I am going to draw the 3-D polygon that I learned in my grade 11 Computer Science course. I am going to use 10 points for the formation of the base and 7 points for each cube. Each cube will have three colors to form a 3D object. After the player has pressed the Space Button, the part that stays on the cube will be part of the base. Then both of the base and the cube will increase 20 units on the y-axis to give room for the next cube. The equation for the first cube is $y=7/10x+271.5$. The ratio for the cube coming from the right will be $7/10$. The ratio for the cube coming from the left will be $-7/10$. After the basic program has finish, I will try to improve the player's game experience by gradually changing the colors of the cubes to make the game become more attractive. I will also use several nice background pictures so that it will randomly switch after the player has start.

iii) IPO CHART

INPUT	PROCESSING	OUTPUT
1. Users names(To create the leaderboard)	1. Each of the names will be followed by a score that the player has played in the game. If the player has played more than once(same name), it will automatically refresh and choose the highest one.	1. At the end of the game, there will be a leaderboard section(Text Area) appears on the screen that displays all the people that have played(their names and scores). It will be sorted from the highest score to lowest score.
2. Keyboard- Space Button	2. After Space Button has being pressed, the computer will get the 7 coordinates for this cube and form another two cubes. One stay on the base and the other not on the base blink several times then disappears. If the cube doesn't match the base at all, the game finishes.	2. Either the next cube comes out or the game ends.