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Concept:

The app is Flappy Bird game implementation in jack language. The idea of the game is to move through the pipes without colliding by pressing a button to "flap" and gain height. The game challenges players to achieve the highest score possible by passing through pipes without colliding.

ARCHITECTURE:

1. Main.jack: this file initialises the game and repeatedly calls on the loop in the FlappyBirdGame
2. FlappyBirdGame.jack: this is the main game loop. Initialises a new game by initialising the bird and the pipes. The file is used to display the instructions of the game for the user. The file checks the user input in order to start, pause, reset and quit the game. The score and the highest score in the game session is also tracked and calculated in that file. Tracks the bird collisions with the pipes and screen boundaries. Handles the game over logic and including resetting the screen for the new game
3. FlappyBird.jack: Draws the bird and updates the movement of the bird wings making the game more dynamic. Implements vertical movement of the bird influenced by gravity. The bird falls fast to the ground unless the user presses the key to move up
4. Pipe.jack: the file is responsible for drawing the pipes to the screen and places them to the screen with the fixed gap between them and random gap positions in each pipe. Moves the pipes along the screen and removes them from the screen once they "move" off of the screen
5. Mod.jack: modulo function used by the pipe.jack

MOTIVATION:

Flappy bird is known game that we used to love playing as children. The reason why we chose this game is because it's not a simple program but it is also not the hardest program out there. Programming this game gave us an opportunity to get familiar with jack language. There are further improvements that we want to make:

- make the game more dynamic by changing the speed of the pipe movements as the score gets higher
- Adding different modes of the game, such that scoring as much as possible in the given time with a very quick movement of the pipes
- Adding flying in the air bonuses that user can catch and then enjoy them , such that double score for 15 seconds or pipes with bigger gaps for a period of time

Link to the video:

<https://drive.google.com/file/d/1dQzzPTkgqRJGKTasVyYUss27pwZI2rvG/view>