

Concepts Assignment

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CART 353

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1. A physics simulator that allows the user to build a structure of different materials, then set the structure on fire and see how the fire would spread.
2. A sculpting program that allows the user to create 3D sculptures out of sand, but the sculptures disintegrate and collapse as the sand dries.
3. A build-your-own-pinball-machine game that allows the user to drag and drop components onto a pinball surface, then play with the resulting table.
4. A flight simulator seen through the eyes of a fly.
5. A game where the user plays as a spider building webs to capture insects.
6. A farming simulator where the user chooses what crops to plant based on crop values, growing conditions, and (crucially) the long-term health of the soil to stay financially solvent.
7. A visual experience that employs a questionnaire to estimate the user's life expectancy, then simulates the user's aging, death, and decomposition process with image processing on a photo of the user's face.
8. An online multiplayer board game that simulates the boom and bust of the subprime mortgage market.
9. A 2D drag-and drop sandbox Rube Goldberg device builder.
10. A Contra-style 2D shooter where the main character is a unicorn who shoots rainbows that turn vicious monsters into friendly woodland critters.
11. A puzzle game where the object is to transmit and reflect beams of colored light from one location to another.
12. A science-fiction-themed tower defense game.
13. A series of animations that use recursive functions to create fractal imagery.
14. A Pacman-like maze chase game where the main character eats junk food and grows larger and larger until it gets stuck in the maze.
15. A reflex-based "drinking" game that becomes harder to play as the user progresses because the game simulates the player getting drunk with dizzying movements and blurring.
16. A modern version of the "love tester" that uses an Arduino and sensors to measure hand temperature and sweatiness.
17. A poker game played versus AI opponents.
18. A turn-based combat game where teams of turtles navigate varying terrain and use an arsenal of weapons to eliminate each other.
19. A mini-golf game with an 18-hole course.
20. An interactive virtual aquarium that the user can stock with different ocean creatures and plants that will eat each other, procreate, fight, and otherwise interact.

21. A procedural image generator that takes tweets as input.
22. A collection of data visualizations for various measures of wealth across the globe.
23. A visual experience that presents the user with a grid filled with words, uses eye-tracking to detect which words the user is looking at, and display pictures and videos relating to those words.
24. A two-player curling video game.
25. An Android app that changes the user's phone background to a different Polish film poster each day (Polish film posters are often very interesting and disturbing).
26. A 360° map of the night sky viewed from Earth that displays major constellations and provides information about significant stars when the user clicks on them.
27. An application that provides a catalogue and map of zoo camera feeds that can be searched by location, species, and habitat.
28. A digital clock with a variety of nonstandard (e.g. geometric, abstract) faces.
29. A visual experience where procedurally-generated critters chase a user-controlled ball.
30. An Android sleep-aid app that uses white-noise to help the user sleep and increasing screen brightness to wake the user up gently.
31. A 3D Lego-style block-building program.
32. A program for practicing the Heimlich maneuver and CPR chest compressions using a dummy with pressure sensors to compare placement, timing, and pressure of compressions against recommendations.
33. An interior-design program where the user can recreate their floorplan and enter the dimensions of their pieces of furniture to plan their furniture placement.
34. A royalty-breeding simulator where the user chooses marital pairings based on wealth, power, influence, and the threat of genetic disorders from rampant inbreeding.
35. An Android exercise-tracking app with step-counter.
36. A digital wardrobe that takes pictures of the user's clothing as input and can be used to dress the player's avatar.
37. A martial-arts fighting game where all the fighters are grumpy but feeble old men.
38. A virtual pet-style simulator in which the user tries to keep a man from leaving his couch by fulfilling his desires without him exerting any effort.
39. A digital plant that changes species depending on temperature, humidity, and light sensor data from a connected Arduino.
40. A gesture-recognition game in which the user peels fruits and vegetables by using gestures to manipulate their placement and orientation against a stationary peeler.
41. A first-person spaceflight simulator controlled using the analog joysticks on an Xbox gamepad.
42. A turn-based strategy game that pits robots versus dinosaurs versus aliens.
43. An interactive map of human anatomy in multiple layers (i.e. skin, muscle, organs, skeletal).

44. A design-your-own-sneaker program where the user can select different designs, shapes, colors, laces, etc.
45. A Katamari-Damacy-style game where the user rolls a snowball around snowy terrain to grow the ball as large as possible in a limited time.
46. An Android DJ app that allows the user to spin, scratch, and mix two mp3s by manipulating virtual turntables with the phone's touchscreen.
47. A customizable virtual garden that can be set to specified dimensions and be used to plan optimal use of space and mix of plants in a real garden
48. A virtual chemistry lab where the user can mix different chemicals and observe the reactions.
49. A cat makeover application, where the user can choose a digital cat and deck it out with different haircuts, cat clothes, and even makeup.
50. A Mr. Potato Head-style application where the users build their own monsters.