Lecture 9: Final Project Concepts

Topics:

1) Concepts

   - Generate concepts

   - Explore concepts

   - Select concepts

2) Plan & Begin Design

Concepts:

  I. Temperature-controlled fan, w/ readout

   a. Sense temperature

   i. Thermistor

   b. Display temperature

   i. LEDs

   ii. Comparator

   c. Control speed of motor w/ PWM

   i. Transistor

   ii. 555

  II. "Color Organ"

   a. Pick up sound

   i. Microphone

   ii. Amplifier

   iii. Filter

   b. Sense volume (Extract envelope)

   i. Rectifier

   ii. Low-pass Filter

   c. Sense freq. band & volume in that band

   d. Light LED bar

III. Sunflower

    a. Sense light

        i. Photocells

    b. Compare intensity

        i. Comparator

    c. Actuator

        i. Solenoids

        ii. Motor

    d. Motor needs to stop! (Implement "dead-band")

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