ECSE-211

Lecture 2

8 January 2016

Course org?

Labs?

Lecture?

Project?

Lab Safety

Design F, M

"Software"
Java + Lejos W, F
+ Eclipse

Lecture M
Lab M, W.

Design Principles and Methodologies

Laboratory Safety and Operating Rules

Rules

- Conduct yourself in a responsible manner at all times in the laboratory. The laboratory (as with all laboratories) contains equipment that has the potential to cause serious injury or death. It is not an entertainment center. Horseplay will not be tolerated.
- Be familiar with your lab assignment before you come to the lab. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ask an instructor or teaching assistant before proceeding.
- You may not work alone in the laboratory – there must always be at least one other person present (preferably your laboratory partner)
- Do not eat food, drink beverages, etc., in the laboratory – keep the laboratory clean at all times.

Rules

- Make sure you always return all your equipment to its storage location when you finish. Remember – you are responsible for looking after the Mindstorms kits you have been given.
- Know the locations and operating procedures of all safety equipment. In particular, make sure you know how to turn off the main power to the laboratory.
- Know the evacuation procedures – you may be called on to implement them.
- Do not block exits with equipment and maintain an unobstructed access to all electrical panels.

Rules

- Treat electrical equipment with respect – remember that it is current levels and not voltage directly that can cause serious injury (of course a high voltage leads to high current). Whenever possible work with high voltage equipment with only one hand (keep the other behind your back) – this prevents the possibility of an accidental circuit through your body.
- Always make sure all capacitors are discharged. Capacitors can hold charge for many hours after the equipment has been turned off.

What is Design?

finding an efficient solution to a problem

fitting a solution within specified constraints

putting together a process to solve a problem

trying to find a solution to a problem

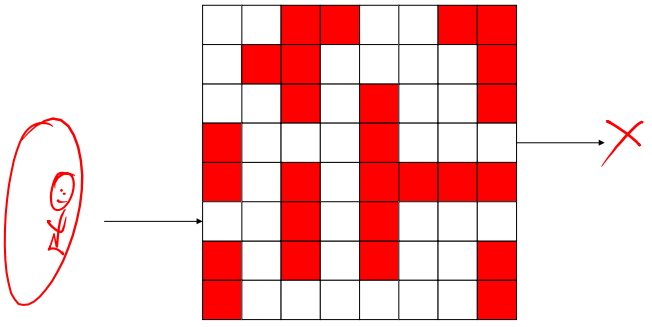
Problem Solving

- Design is a problem solving exercise..
- How do you solve problems?

1. understand the problem *
2. setting a goal
3. Provide possible solns and compare *
4. What resources are available *
5. Recognizing constraints

Design

- Getting to the solution of a design problem is like solving a maze…



Design

- Getting to the solution of a design problem is like solving a maze…
- But it is a maze with several entrances and several exits…