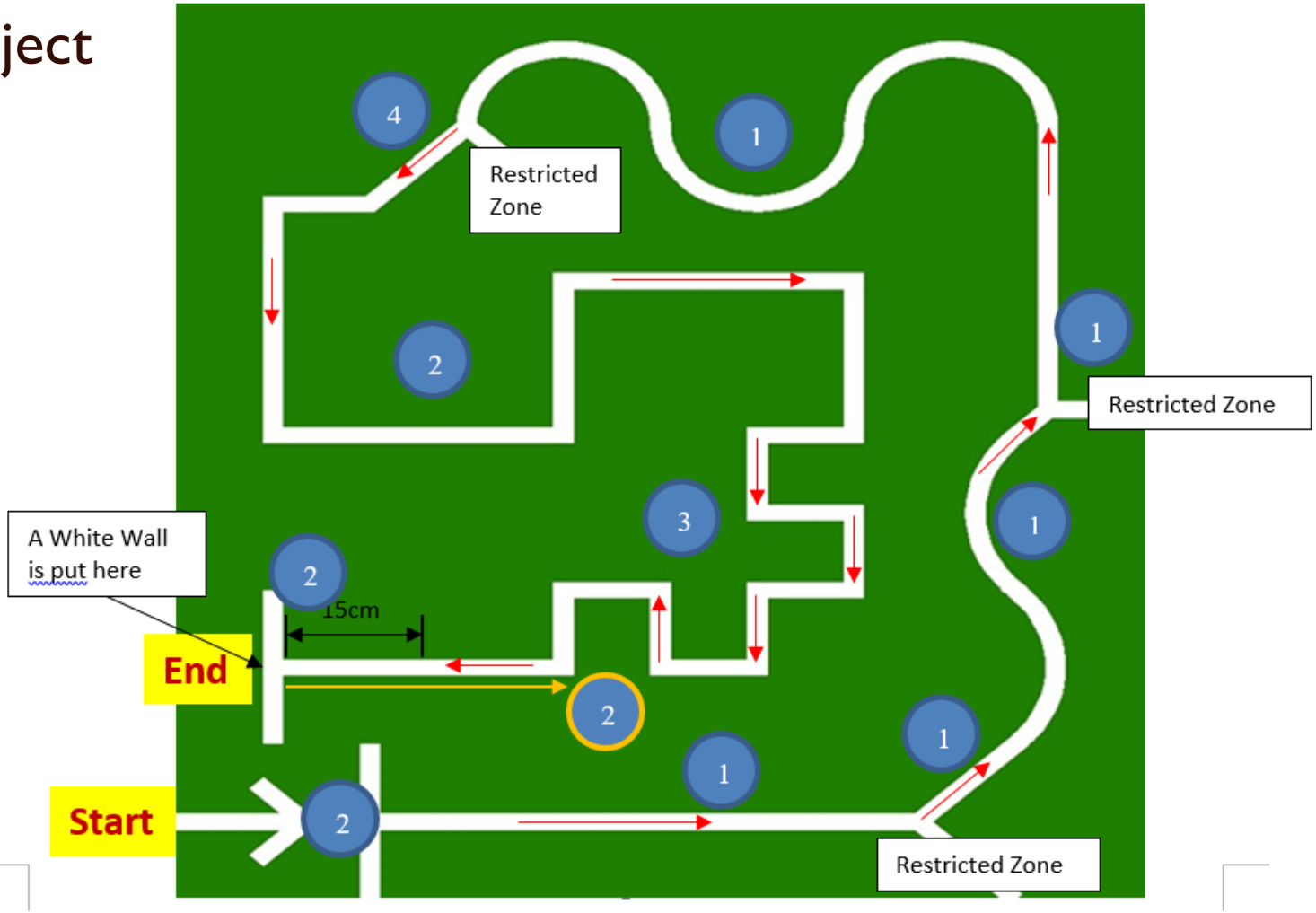
Final Demo: 01 Aug (Wed)
15:00-15:50, Rm2134

Tutorial 9

Project



Preliminary Scoring Scheme

Task No.	Task	Points
i	Start running after the wall sensor is triggered	2
ii	Straight Line	1
iii	Navigate the 1st Left Split	1
iv	Gentle Curves I	1
v	Navigate the 2nd Left Split	1
vi	Gentle Curves II	1
vii	Navigate Right Split	4
viii	Right angle Curves I (finish all 6 right angles)	2
ix	Right angle Curves II (finish all 10 right angles)	3
x	Move Backward from the wall	2
xi	Stop after move backward to the right angle corner	2
xii	Perfect Run (all above, no failed tasks)	3
xiii	Time (finish each trial within 35 seconds)	2
	Total	25

Supplementary documents

- Canvas → Files → Project
  - Project Guide
  - Supplementary

Your car

- You have 2 trials.
- Your task is to gather as many points as possible.
- Touching the Restricted Zones or going out of the track → FAILURE
  - Restart from the point where you failed at the cost of (failed) task score & perfect run score.
  - Restart from the very beginning as the 2nd trial

Basic Rules

- Project Rules:
  - Rule 1: 4 sensors max
  - Rule 2: Use provided Arduino Nano-board;
  - Rule 3: All projects only use 1 given breadboard
- Demo Rules:
  - Show clearly the group number on the breadboard to your TA.
- After Demo:
  - Post-demo Interview

Other Rules

- Both members MUST show up during the demo.
  - No marks will be given to the one being absent.
  - Show up at 15:00-15:50 on Aug 01 (Wed).

    Being late may result in a mark penalty

Project Report

- Deadline: 12:00noon on Aug 03 (Fri)
  - Upload to Canvas Assignment "Project Report"
  - Each group: ONE Report + one Arduino sketch
  - rename the files to your Group number

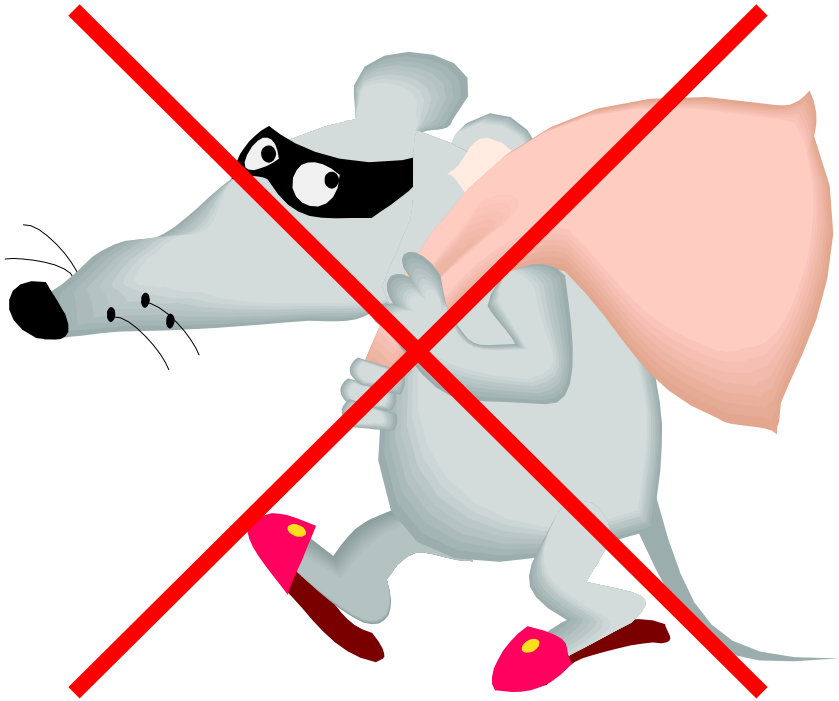
Warning: Your Arduino code will be examined by a similarity detecting software. Copying code from others may result in zero mark in your **demo & report** scores.

Administrative matters

- You will be able to access the lab room using your student ID card from Jul 20 – Aug 01

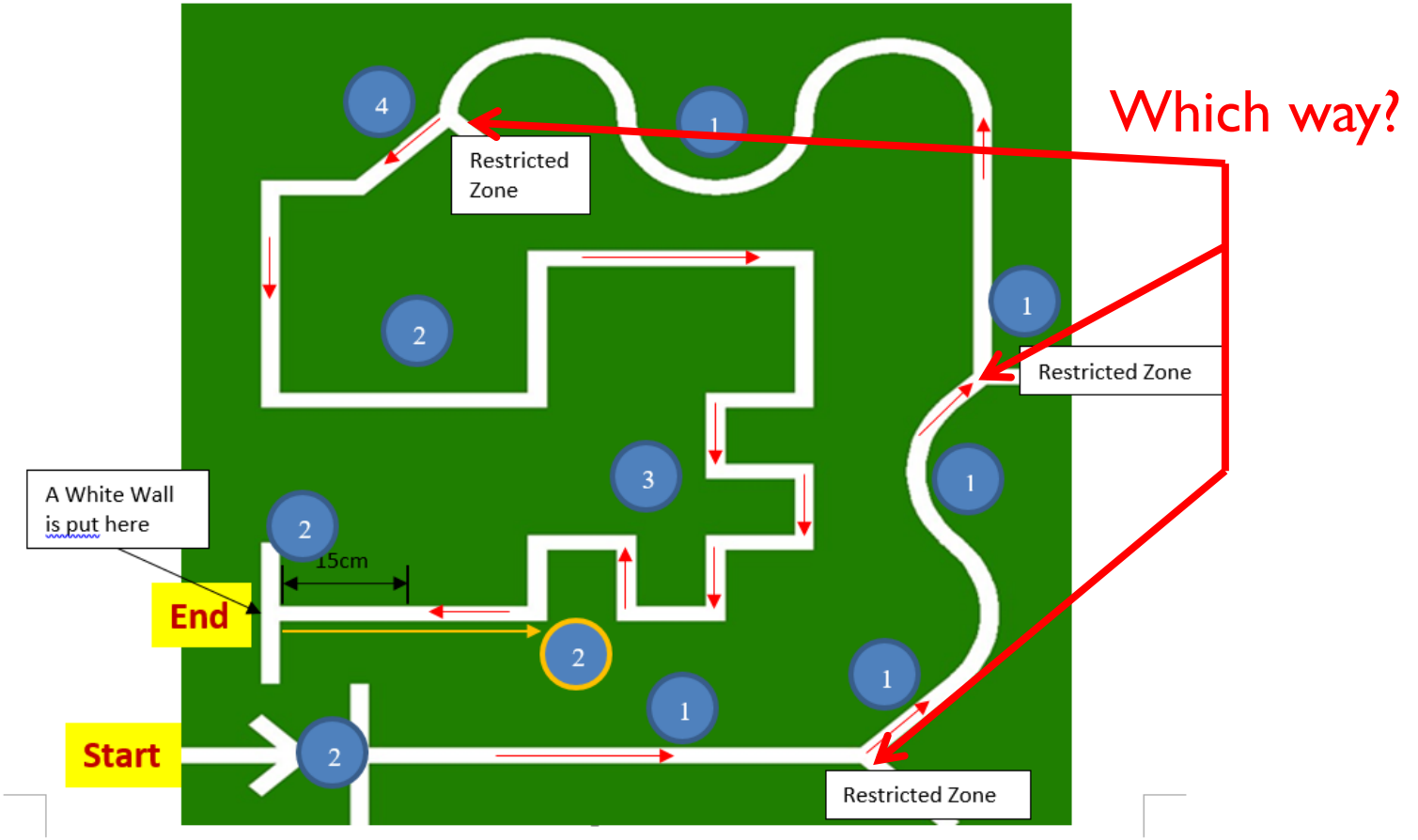
- For equipment, ask the TO
  - Allen, eeallen@ust.hk
  - Tel 2358 8535, Extension 8535

NO STEALING



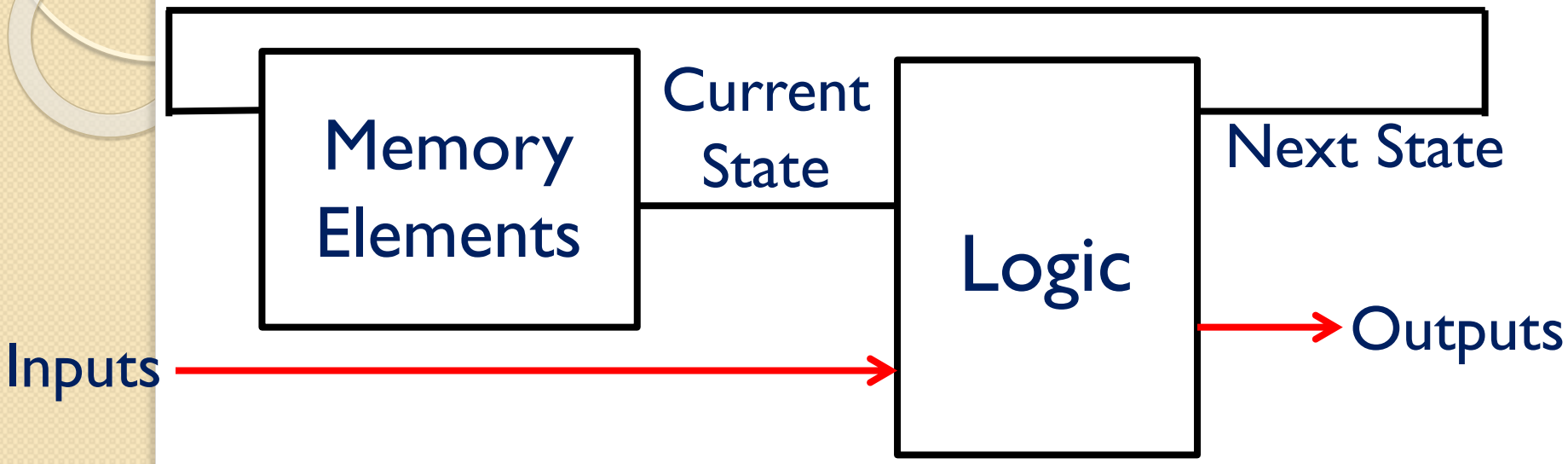
Sequential Logic

- Combinational: Output = f(Inputs)
- Sequential: Output = f(Inputs, Current State)



Typical Flow

For reference ONLY



- The Logic decides the Next State based on the Inputs.
- The Logic decides the Outputs based on Input and Current State; it also decides the Next State.
- The cycle goes on and on.

Conditional Execution

Review Lecture 07, pages 5-12

- if … else …
- for
- while
- switch
- break

Coding Environment

- You may choose to use the online IDE (Arduino Web Editor) or download the latest version of the Arduino IDE and set up on your laptop.

  https://www.arduino.cc/
- You can also use the Arduino IDE on the desktop of your lab (Rm2134) computer.