



CPSC203 – Introduction to Problem Solving and Using Application Software

Winter 2010

Tutorial 8: Mehrdad Nurolahzade

Introduction

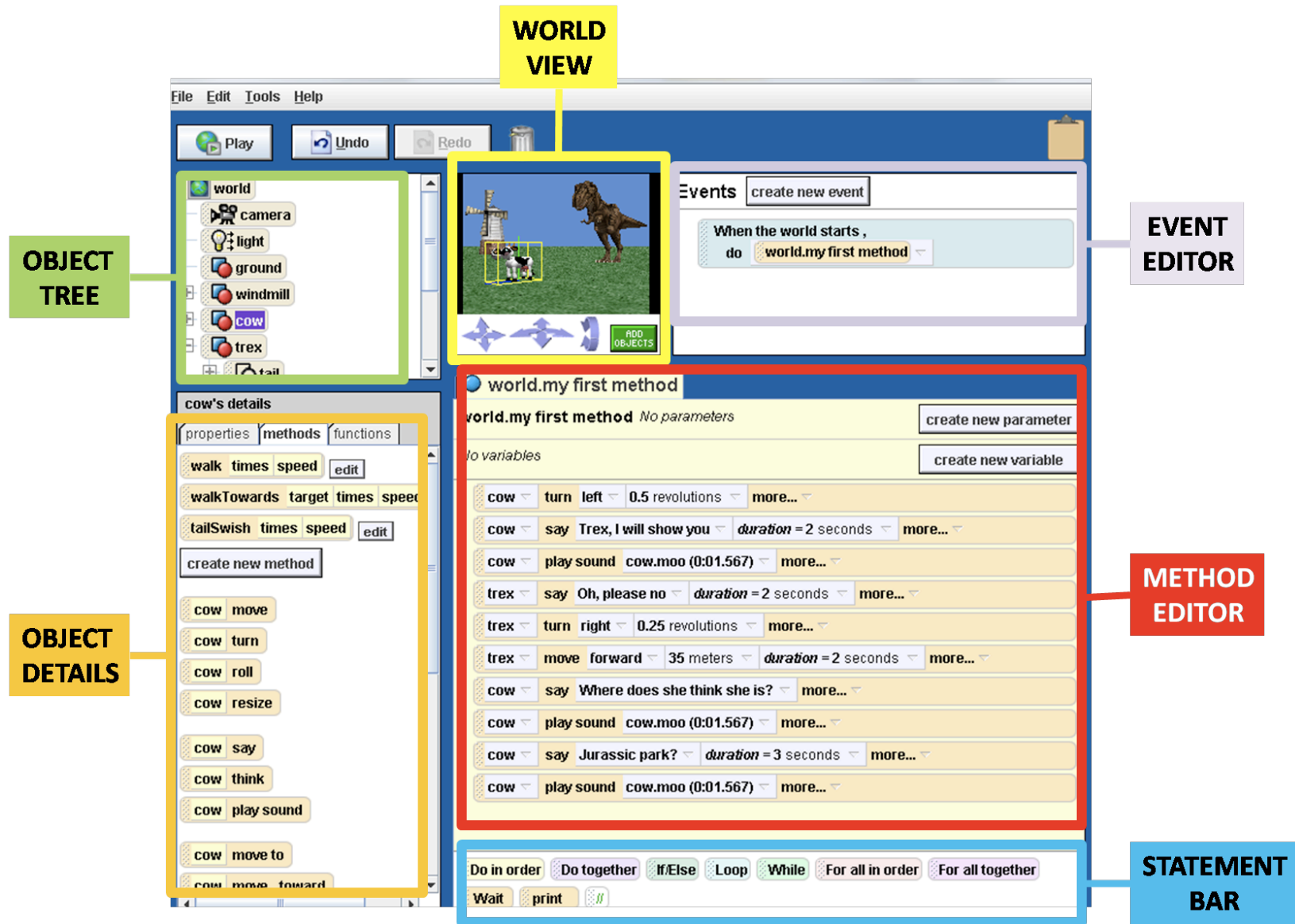
- Download Alice
- Alice Support Material
- Alice Environment
- Objects: Properties, Methods, and Functions
- Action World!

Download Alice

- We are using version 2.2 of Alice, which is available for Windows and Mac platforms.
- Download page: http://www.alice.org/index.php?page=downloads/download_alice2.2
- No installation is required on Windows. Decompress the .zip file and run Alice.exe.

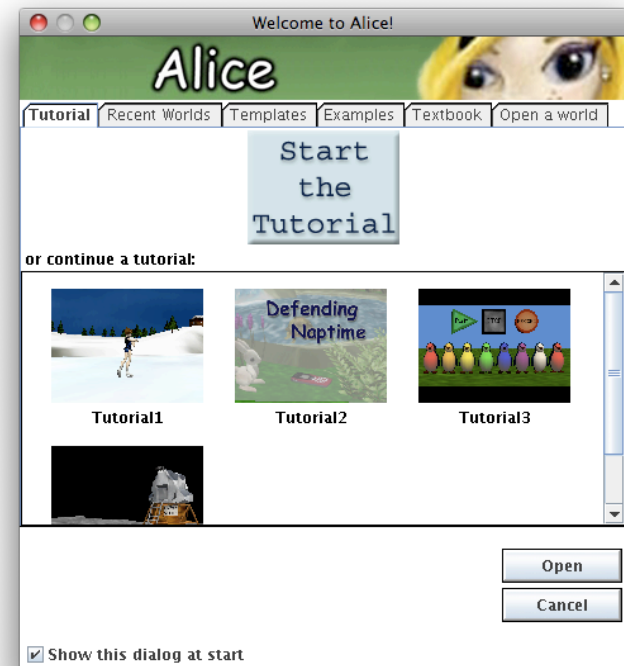
Alice Support Material

- Alice.org
- “Peeking into Computer Science” book chapter (available on the Blackboard).
- Alice Lab Manual (available on the Blackboard).
- [Alice Support Website](#)



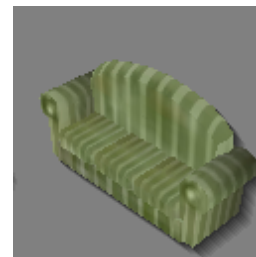
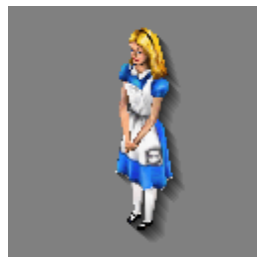
Exercise

- Watch Alice Tutorial
 - Choose Tutorial from the Help menu
 - Click on the Start the Tutorial box on the screen that appears
 - Step through the tutorial till you see all the 40 screens.



Objects (1)

- An Alice program is called a **virtual world** or simply a **world**.



- Object is Alice can move, spin, change color, react to the mouse , and more.

Objects (2)

- Objects have three types of details:
 - Properties: characteristics of an object
 - Methods: actions that an object can do
 - Functions: answer questions asked about an object

Methods

- Some methods, such as skate and move, require *arguments*.
- Arguments determine how an action has to be performed.
- For instance, when asking the IceSkater to skate, Alice needs to know how many steps it needs to skate.

Executing a Method

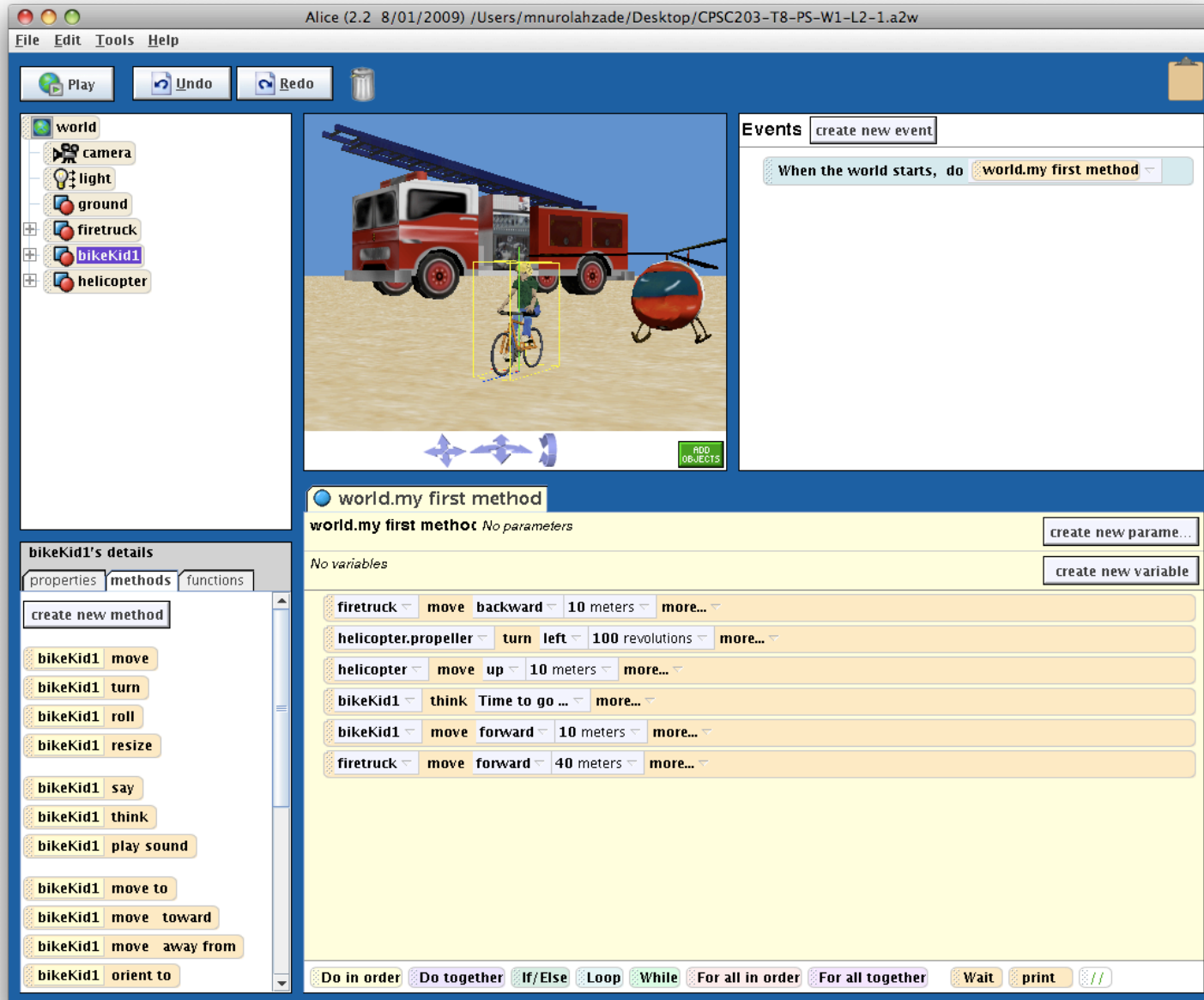
- Select an object from the object tree.
- Select the desired method from methods tab in object details.
- Drag the method to the editor.
- Specify the argument(s) of the method (if any).

Properties


- Changing the value of a property in the properties details tab will take effect before running the world.
- If we want to change a property while an animation is running, we have to add this change to the instruction list.

Functions

- While some object properties can be obtained directly through an object's properties list, others need to be obtained by using functions to ask questions about the object.
- When Alice is asked a question about an object using a function, it returns a value as an answer. This value may be a number, an object, or Boolean (true/false).



Action World – Part I

 world.my first method

world.my first method *No parameters*

No variables

firetruck ▾ move backward ▾ 10 meters ▾ more... ▾

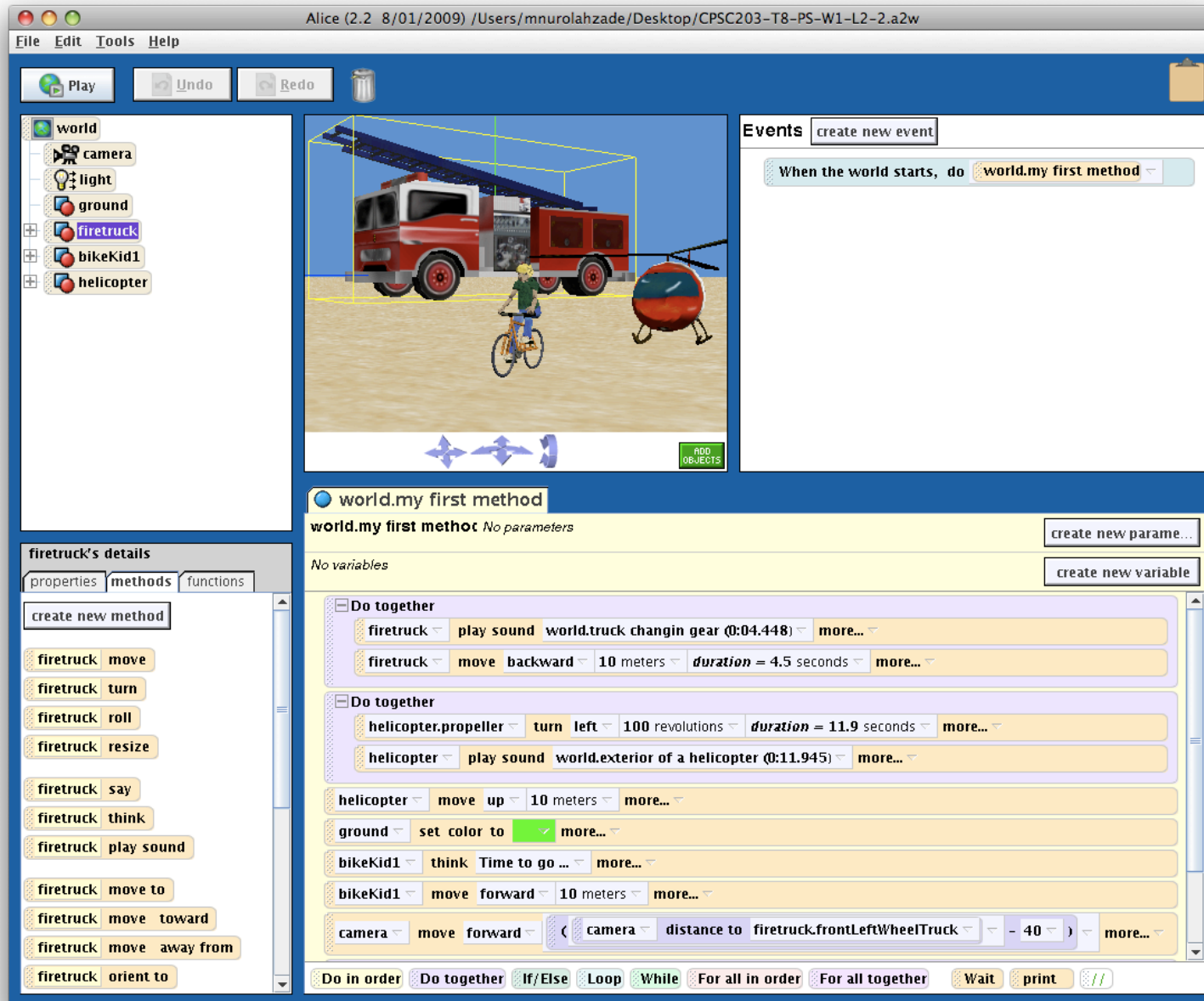
helicopter.propeller ▾ turn left ▾ 100 revolutions ▾ more... ▾

helicopter ▾ move up ▾ 10 meters ▾ more... ▾

bikeKid1 ▾ think Time to go ... ▾ more... ▾

bikeKid1 ▾ move forward ▾ 10 meters ▾ more... ▾

firetruck ▾ move forward ▾ 40 meters ▾ more... ▾



Action World – Part II

The screenshot shows a Scratch script editor for a world named "world.my first method". The script is organized into several "Do together" blocks. The actions are as follows:

- Do together block 1:**
 - firetruck: play sound world.truck changin gear (0:04.448)
 - firetruck: move backward 10 meters, duration = 4.5 seconds
- Do together block 2:**
 - helicopter.propeller: turn left 100 revolutions, duration = 11.9 seconds
 - helicopter: play sound world.exterior of a helicopter (0:11.945)
- helicopter: move up 10 meters
- ground: set color to (green)
- bikeKid1: think Time to go ...
- bikeKid1: move forward 10 meters
- camera: move forward (distance to firetruck.frontLeftWheelTruck - 40)
- Do together block 3:**
 - firetruck: move forward 40 meters
 - firetruck: play sound world.fire Truck Siren (0:09.412)

Exercise

- Download Lab 1 exercise from:
[http://pages.cpsc.ucalgary.ca/~kawash/peeking/tutorials/
lab1.a2w](http://pages.cpsc.ucalgary.ca/~kawash/peeking/tutorials/lab1.a2w)
- Do exercise 2, 3, and 4 using the retrieved world above.