

**CPT120 Introduction to Programming**  
**Period 3, Assignment 1**  
**‘Roogle’**  
**Due before 9pm, 25/9/2011**

**Description and Requirements**

You are to implement an Alice game where a kangaroo is competing with a ghost, to search for a baby kangaroo named Joeby. You are given a start up file which you must use.

The following is a game character summary:

Name	Controlled by	Description
Kangaroo	User	Arrow-key controlled (restrictions apply)
Ghost	Computer	Randomly moves toward Joeby
Joeby	N/A	Lost but stays in one place

**Kangaroo**

The Kangaroo should be allowed to move back/forward and turn left/right when the user presses the relevant arrow keys. There is a tree object in the world and you must prevent the kangaroo from walking through it. The kangaroo movement code should be implemented in the ‘goForward’, ‘goBackward’, ‘turnLeft’ and ‘turnRight’ methods and nowhere else. (For example, you cannot use the ‘let arrow keys move the kangaroo’ event, etc.)

**Ghost**

The ghost first orients itself (badly and almost randomly) towards Joeby. This feature is already implemented in a method called ‘turnToARandomDirection’ which is in the ghost object. After calling this method, you only need to move the ghost forward by 0.5 meters. When these two steps are done correctly, eventually, the ghost will get to Joeby. You must not modify anything in the ‘turnToARandomDirection’ method. Also, you must not prevent the ghost from moving through other objects.

**Joeby**

When the get kangaroo is less than 1 meter from Joeby, Joeby should say “Thank you for rescuing me” which means the kangaroo won. For this to happen, first, the kangaroo must be closer to Joeby than the ghost. Similarly, if it is the ghost that is less than 1 meter from Joeby, the ghost wins and Joeby should say “Oh, the horror!”. Again, the ghost has to be closer to Joeby than the kangaroo.

**World**

The world contains a method called ‘playGame’ which is called when the World starts. You will be implementing most of the game code in here. There is no need to detect the completion of the game or stop the game after Joeby is found or

spooked (i.e. if Joeby continues to get spooked and found after the first announcement, it is fine).

## **Constraints**

You are required to follow these constraints but consider them as guidance:

- You must use the start up Alice file provided on the Blackboard. Do not recreate the entire game from scratch in a new Alice file.
- The only events you can create are ‘when a key is typed’ events. Do not remove the events in the start up file.
- Do not create any more methods, functions. Your code should be only in the following methods:
  - Kangaroo.goForward
  - Kangaroo.goBackward
  - Kangaroo.turnLeft
  - Kangaroo.turnRight
  - World.playGame

## **Submission Details**

This is an individual assignment and all submitted work must be your own. Please do not use other people’s code or allow others to use your code.

Students are not allowed to make further assumptions; obtaining clarifications from Gayan on the assignment 1 discussion forum is a must, whenever in doubt.

Changes to this document may be made at a later date. Again, please keep an eye on the assignment 1 discussion forum on the Blackboard.

You must submit two files for this assignment:

1. Assignment1.a2w (Alice file)
2. Assignment1.html (web browser viewable version of the .a2w file)

To obtain the second file, in Alice, go to *File -> Export Code for Printing*. Please ensure that the code that you have written is included in the HTML version.

The two files can be submitted via WebLearn. You can submit multiple times but only the last submitted copy is retained on the system.

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