Using Game Maker 8: Introduction

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What is Game Maker?

• **YoYo Games** produced *Game Maker* so that many people could experience the thrill of making a computer do what you ask it to do, under the guise of producing a game.

• Game Maker creates an event-driven, object-oriented simulation with a visual drag-and-drop interface.

• Game Maker program executables can be run standalone or can be run from within a web page (after loading a plug-in)

• The “Lite” Edition can be downloaded for free! There is also a “Pro Edition” that costs money. ($20)

Student Learning Objectives

1. Learn the basics of simulation software
2. Learn the step-by-step thinking that characterizes writing computer programs
3. Learn the ideas behind incremental program enhancement
4. Learn the ideas behind event-based computer programming
5. Learn the ideas behind object-oriented programming
6. If you want a head start on learning Java or C++, you can learn to use the Game Maker scripting language

Getting Game Maker for Free

Go to:

http://www.yoyogames.com/gamemaker

Follow the links to the free download (see the next page).

GameMaker comes in Windows 2000/XP/Vista/7 versions.

Getting Game Maker for Free

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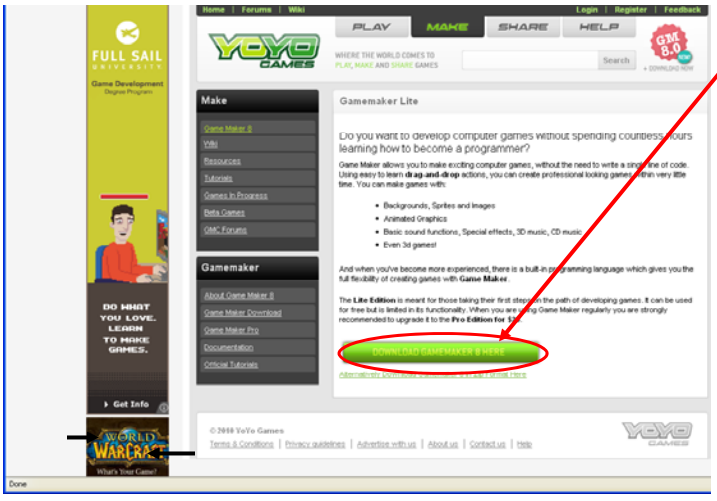


Good Game Maker Web Links

Main Game Maker Site:
`http://www.yoyogames.com`

These (and other) notes:
`http://cs.oregonstate.edu/~mjb/gamemaker`

Alphabetized list of Actions and what tab to find them under
`http://cs.oregonstate.edu/~mjb/gamemaker/actions.pdf`

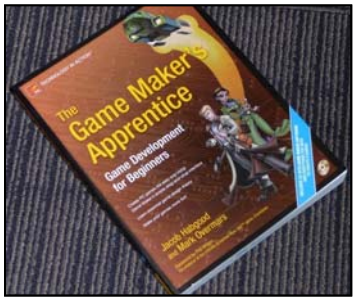
Using Game Maker for a Simple Ecological Simulation:
`http://cs.oregonstate.edu/~mjb/gamemaker/ecosim.pdf`
`http://cs.oregonstate.edu/~mjb/gamemaker/ecosim.gmk`

276-page PDF Game Maker 7 documentation:
`http://cs.oregonstate.edu/~mjb/gamemaker/gmaker.pdf`

Good Reference Books

Jacob Habgood and Mark Overmars, *The Game Maker's Apprentice*, Apress, 2006.

($27 on Amazon)

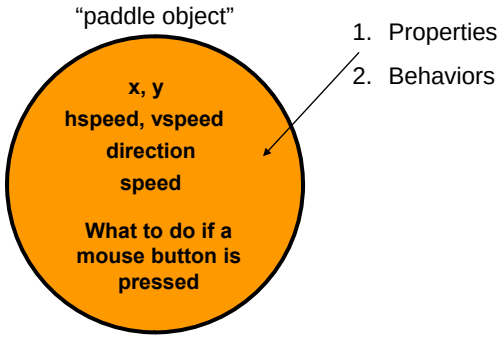


($23 on Amazon)

Jerry Lee Ford, *Getting Started with Game Maker*, Course Technology, 2010.

Game Maker Introduces Object-oriented Programming

Each object has properties and behaviors encapsulated inside of it. This entire collection can be referenced by just the object name ("Paddle") or by one property ("Paddle.hspeed") or behavior ("Paddle's Left Mouse Button Event") at a time



Game Maker Teaches Event-based Programming

Wait for some specific Event to happen

Perform some Action(s) in response to it

Some examples:

User presses a key on the Keyboard	Restart the current Room
User holds down a button on the Mouse	Move Object A to wherever the Mouse is
A new Object B is Created	Get it positioned and moving
Object C collides with Object D	Bounce Object C and play a sound
Object E collides with Object F	Destroy this instance of Object F

"Events" "Actions"

A Demonstration of Events: A Chase Simulation

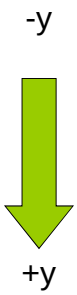
Two Objects: the Chaser and the Chasee:

1. Upon Creation, the Chasee starts at a random x and y location and heads in a random direction from 0° to 360° with a speed of 8
2. Upon Creation, the Chaser starts at a random x and y location
3. At each step, the Chasee changes its direction to a random direction from 0° to 360°
4. At each step, the Chaser takes a step towards the Chasee with a speed of 2
5. If the Chaser collides with the Chasee, a sound is played, the Chasee is obliterated, and the simulation restarts
6. If the Chaser goes outside the room, it plays a sound and bounces
7. If the Chasee goes outside the room, it wraps around to the other side of the room
8. If the 'R' key is hit on the keyboard, restart the simulation

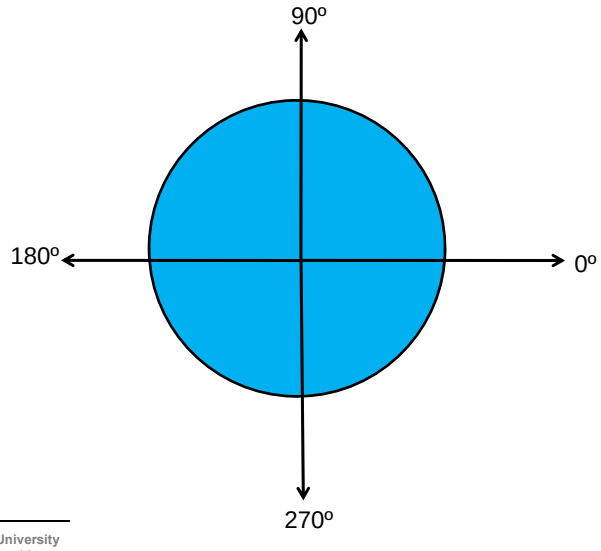
What Game Maker Means by the Y-axis

Warning: Game Maker defines **+Y** as ***down*** !

"Paddle.y - 50" is ***above*** the paddle.



What Game Maker Means by Angle Direction



Getting Started

Double-click on the GameMaker icon 

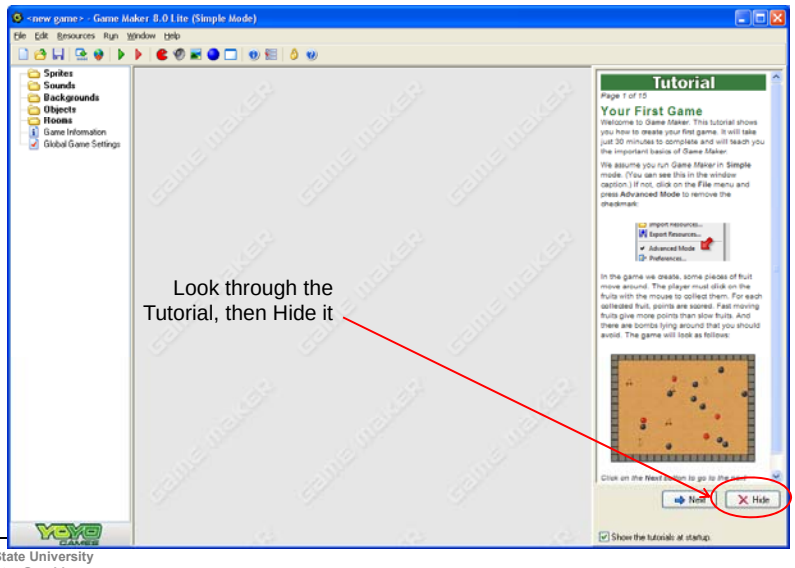
Or click on **Start → All Programs → Game Maker 8 → Game Maker**

You will get a screen that looks like this:

Click here !

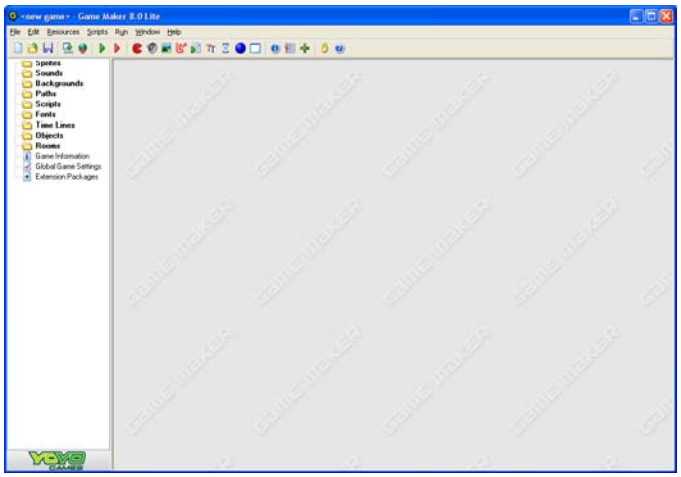
Getting Started

You will then get a start screen that looks something like this:



Getting Started

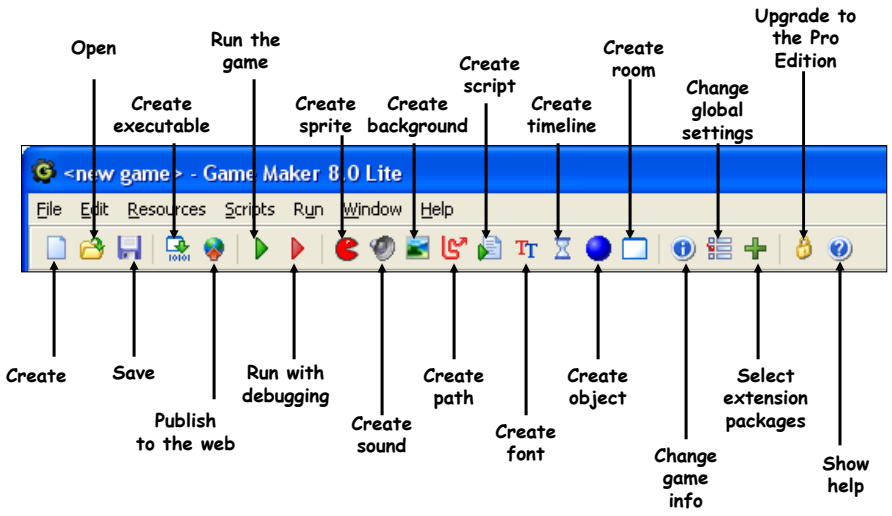
Now, click on **File→Advanced Mode**
This isn't really an advanced mode – it just brings up a few more icons, like this:



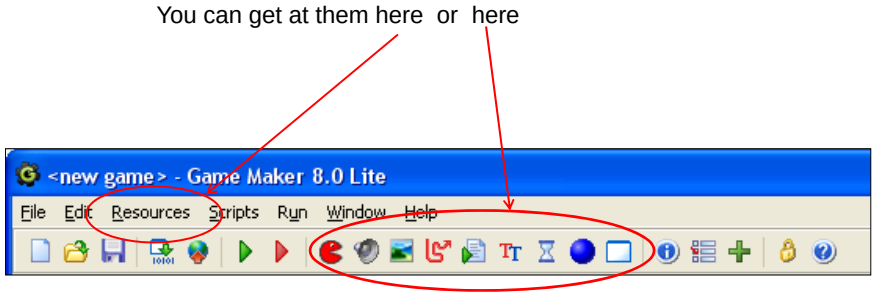
Right now, click **File→Save As** – and hit **Save** often while you are editing

Getting Started

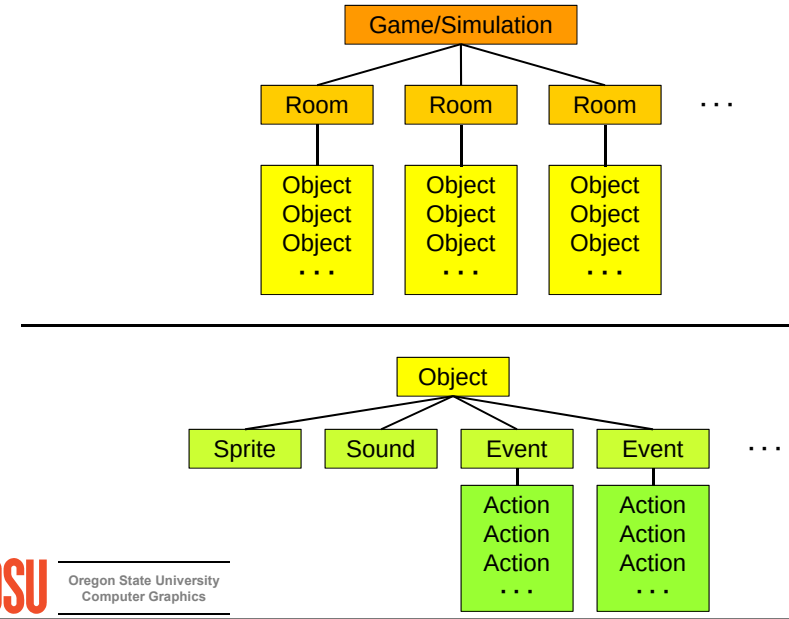
The icons across the top are *really* important:



All the things you can add to the game are called "Resources"



The Structure of a Game/Simulation



Game Maker Steps

1. Describe the game you are trying to create What is it supposed to do? What is it supposed to look like?
2. Define the sprites
3. Define the sounds
4. Define the objects themselves, **but not (yet) their events and actions**
5. Go back and define each object's events and actions
6. Define the room
7. Put the object instances in the room

It is best to define the objects first and their events and actions later because some of those actions will need to be asked for in terms of objects (that might not have been created yet)