

# Creating Games with Game Maker

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# Game Maker

- Game Maker is a tool mostly for creating 2D games (though there is 3D support in the latest version)
- It uses a property-sheet approach to create a game
  - Create a set of sprites, objects, rooms, sounds
  - Each one of these has a series of properties that you can set – these affect its behavior
- Game Maker does not require programming
  - It does have a scripting language (Game Maker Language) you can use for more advanced features
  - It's possible to make interesting games without knowing this language
  - Though, of course, if you do learn the language, you'll be able to make more complex games

# Game Maker Use

- Game Maker runs on Windows PCs
  - No real Mac support, sorry
  - There is a free download for the basic version
  - <http://www.gamemaker.nl/>
- Wait, I use a Mac! I don't have a PC!
  - Game Maker is installed on the ITS machines, available in computer labs on campus

# Game Maker on the ITS Machines

- To run Game Maker in the labs, you need to
  - Find the folder containing it
    - Log on to the lab PC
    - Double-click on the “PCServer” icon on the desktop
    - A window will appear containing 7 folders
    - One of these is “Class Folders” – double click it
    - Go to folder “Computer Science”, then “CS 80K”
      - There is also CS80v – that’s not it
    - Finally, double-click on folder “GameMaker”
  - Run the program
    - In the GameMaker folder, you should see a red ball icon with a sideways “T”
    - Double click this icon to start GameMaker

# Game Maker Community

- A web site hosting discussion boards for users of Game Maker
  - <http://forums.gamemaker.nl/>
- Has tutorials/examples board
- A novice user Q&A board
- Postings of games created by people who used Game Maker

# Game Maker Demo

- In-class demonstration of using Game Maker to create the simple ball game
  - This example is described on pages 9-10 of the Game Maker manual
  - It is highly recommended that you also follow this example and create the simple game
    - Provides a relatively gentle introduction to how to use Game Maker

# Sprites

- Sprites are the visual representation of objects in the game
- A sprite can be a single image that never changes
- You can also animate a sprite by having a sequence of images display in a row
- Show Pacman sprites in Game Maker
- To add a sprite:
  - Menu Add -> Add Sprite

# Sprite Issues

- The “Transparent” choice when creating a sprite indicates whether the background color of the sprite should be transparent
  - Most of the time, this is the correct choice
    - Only want your item to show, not a square with the item inside it
  - Exception might be when you have a wall
    - Even then, might take advantage of transparency to create interesting effects
  - Background color is the leftmost, bottommost pixel of the image

# Objects (Briefly)

- Objects add behavior to Sprites
  - A Sprite just tells you what an item looks like
  - A Sprite conveys no information on how it works in the game world
    - Does it move, bounce, explode, etc? A Sprite doesn't say anything about these issues – Objects do
- Every character, monster, wall, item, ball in the game has its visual representation made with a Sprite, and its behavior determined by an Object

# Basic Model of an Object

- An **Object** reacts to **Events** by performing one or more **Actions**
  - For example, a *ball* reacts to a *collision* with a *wall* by *bouncing*
    - Ball and wall are objects
    - A collision is one kind of event
    - Bouncing is one kind of action
  - An Event is a notable occurrence in the game
    - An object hitting another object
    - A mouse click on an object
    - An object being created
  - An Action is an activity that can occur in the game
    - Bouncing off a wall
    - Starting to move in a particular direction

# Demonstration of Events and Actions

- Switch back to Game Maker, and play around with some of the actions and events associated with the ball demo