

# More Graphics and Objects

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Rose-Hulman Institute of Technology

Computer Science and Software Engineering

Check out **06-MoreGraphicsAndObjects** from SVN. Get help if you're stuck. No quiz today.

# Announcements

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- Sunday sessions: new poll on ANGEL
  - I am more inclined to do 5-7 because lab assistant is around 7-9. Will announce decision on Thursday.
  - Come at the start!
- Remember CM on quizzes
- HW5 diagram due at beginning of Thursday's class



# Questions

# Outline

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- Random numbers
- Coordinate systems
- Text input in GUI
- Pair programming time

# [[[Viewing grades, if Rob is done]]]

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- [[[[hidden]]]

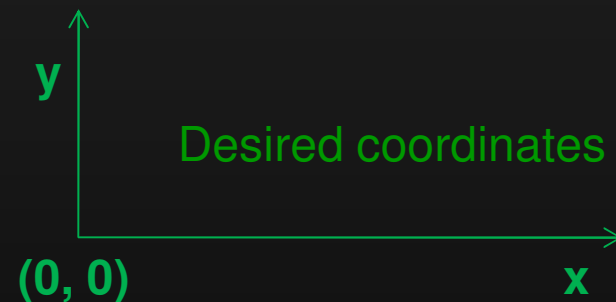
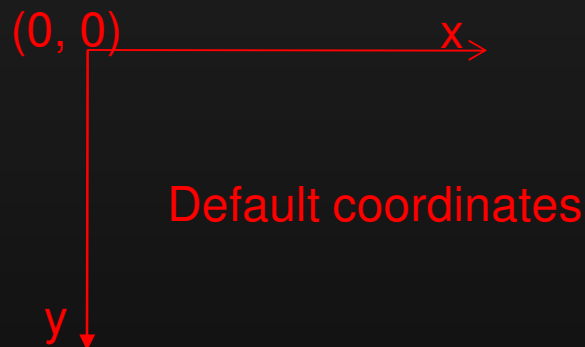
# Random Numbers in Python

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- `from random import random`
- `random()`
  - random number between 0.0 and 1.0

# Coordinate Systems

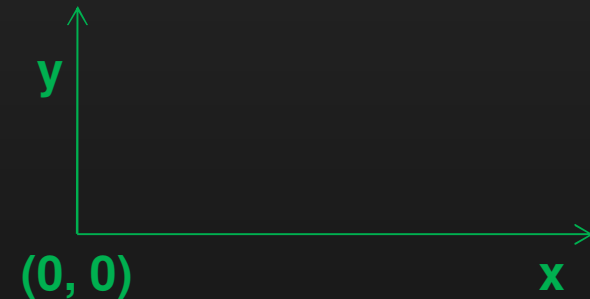
- Important use of graphics: represent *data* visually
- Example: a bar chart
  - We really want  $(0,0)$  to be near the lower-left corner



# Coordinates in zellegraphics

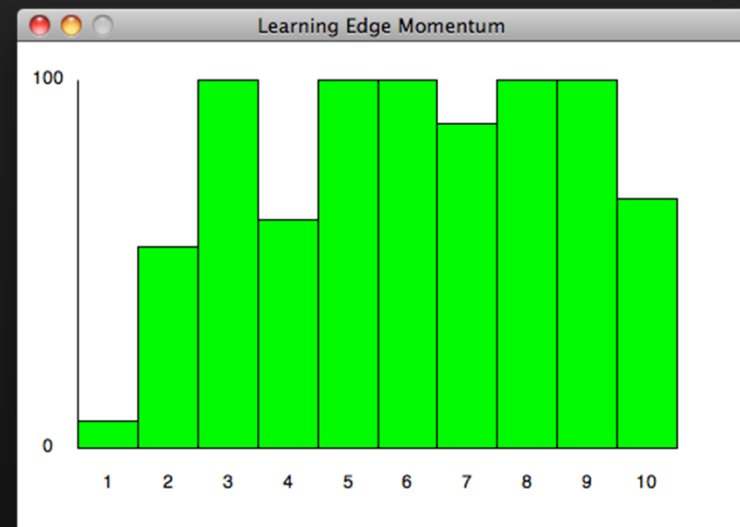
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- **GraphWin** has method to set coordinates
  - `win.setCoords(x1, y1, x2, y2)`
  - Sets coordinates so **(x1,y1)** is the lower-left corner and **(x2,y2)** is the upper-right



# Example: Learning Edge Momentum

- Idea:
  - Success in subsequent weeks of a course depends on success in prior weeks
  - Amount of “momentum” depends on how interrelated the ideas are
  - Ideas in learning to program seem to be highly interrelated



Robins, A. Learning edge momentum: A new account of outcomes in CS1. *Computer Science Education*, 20(1), 37-71, 2010.

# Text Input with zellegraphics

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- Use an **Entry** object
- Constructor:
  - **Entry(centerPoint, width)**
- Methods:
  - Usual graphics ones, plus
  - **setText(str)** and **getText()**

# Pair Programming for HW6

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- Tic Tac Toe
  - Just graphics, no AI or checking for wins (yet)
  - Coordinate system and **getMouse()**
- Decorate
  - Loops, random numbers, using objects

Show your sketches to one of the assistants or me before starting (much) programming.