Lecture 14': Exceptions

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Basic idea

```
try:
    try block
except ExceptionType1, e1:
...
except ExceptionType2, e2:
...
```

If try block does not raise an exception

- except blocks are ignored

If try block raises an exception

- block of code for matching exception type executes
- if no matching type, exception is raised by the try block to the caller
  - statements after try block won't execute in this case

Examples

Try the two examples from class:

- http://bit.ly/10ziYvV
- http://bit.ly/Z4dMP0

We also have a challenge example

- http://bit.ly/YVbgxB
- illustrates how you can use your own classes as exceptions
- illustrates how expressions of different type can be handled selectively
- can you determine what the program will print?

Real Lecture 14: Monty Hall Problem, Distributions, [confidence intervals and levels, standard error](for next time)

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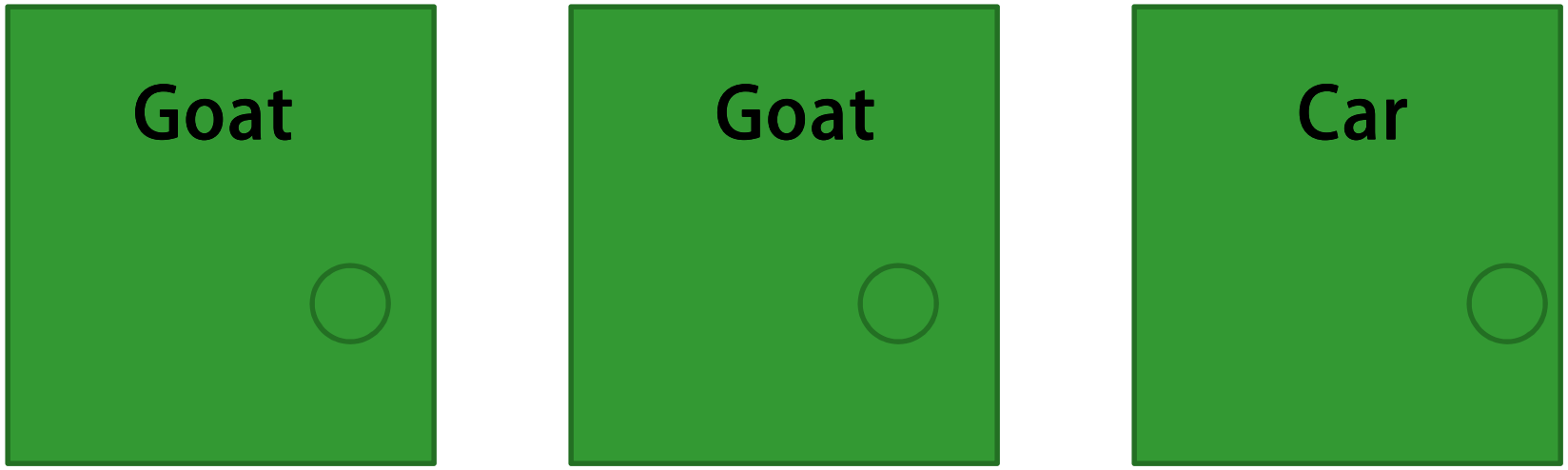
Monty Hall Problem

Problem Statement



There are three doors
- two have goats, one has a car

On the first stage, you pick a door

In the second stage, Monty Hall opens a door with a goat
- a different door from the one you picked

What should you do next?
- you can stay with your original choice
- you can randomly pick one of the two remaining doors
- you can switch from the door you had picked to the other closed door

Trying it in Code

http://bit.ly/12lJiep

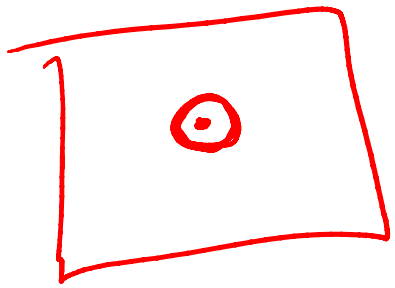
Something to remember:

- Mod operator a % b
  - computes the reminder of dividing a / b
  - allows you to 'wrap around'
    - 1 % 3 = 1
    - 2 % 3 = 2
    - 3 % 3 = 0
    - 4 % 3 = 1
    - 5 % 3 = 2
    - ...
  - helpful when computing 'the other door'
    - an alternative approach is to use 'if' for the different cases

Distributions

Assign a probability to sets of possible outcomes of a random variable
(or in our case an experiment)

- For experiments that produce integer or boolean values it's easier to talk about the probability of each discrete value
- For experiments that produce real numbers, the probability of any real number will usually be zero
  - You need to talk about the probability of a neighborhood around a value

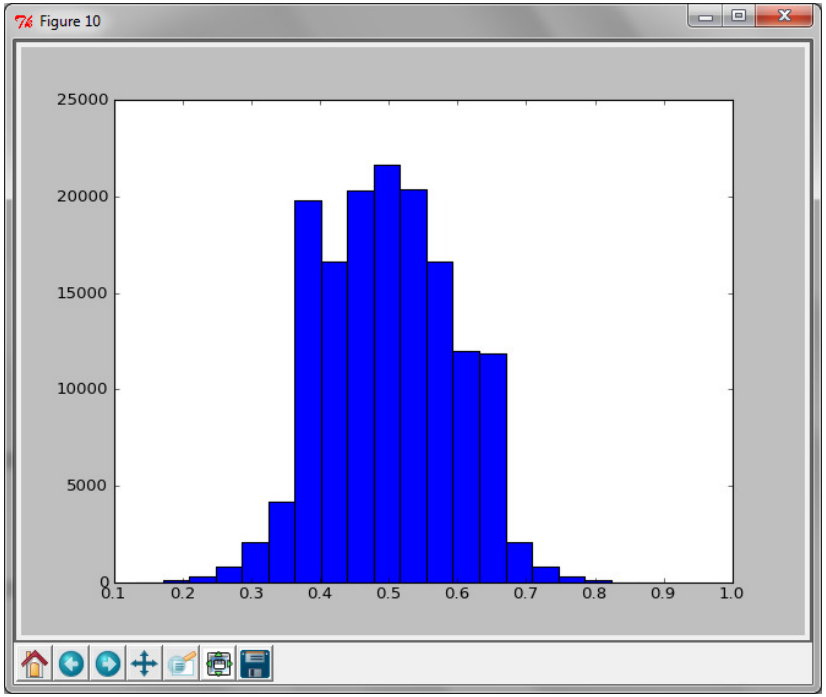


Plotting Histograms

pylab.hist(vals, bins=x)

Example:

- plot of the outcome of the MontyHall Simulation for the random strategy for 150k simulations



TO BE CONTINUED...