

Sampling and Monte Carlo Simulations

Lecturer: John Guttag

Nondeterminism

Causal nondeterminism:

Not every event is caused by previous events

Predictive nondeterminism:

Lack of knowledge about the world makes it impossible make accurate predications about future states

Stochastic Processes

An ongoing process where the next state might depend on both the previous states **and some random element**.

Rolling a Die

```
def rollDie():  
    """returns an int between 1 and 6"""
```

```
def rollDie():  
    """returns a random int between 1 and 6"""
```



Hash Tables

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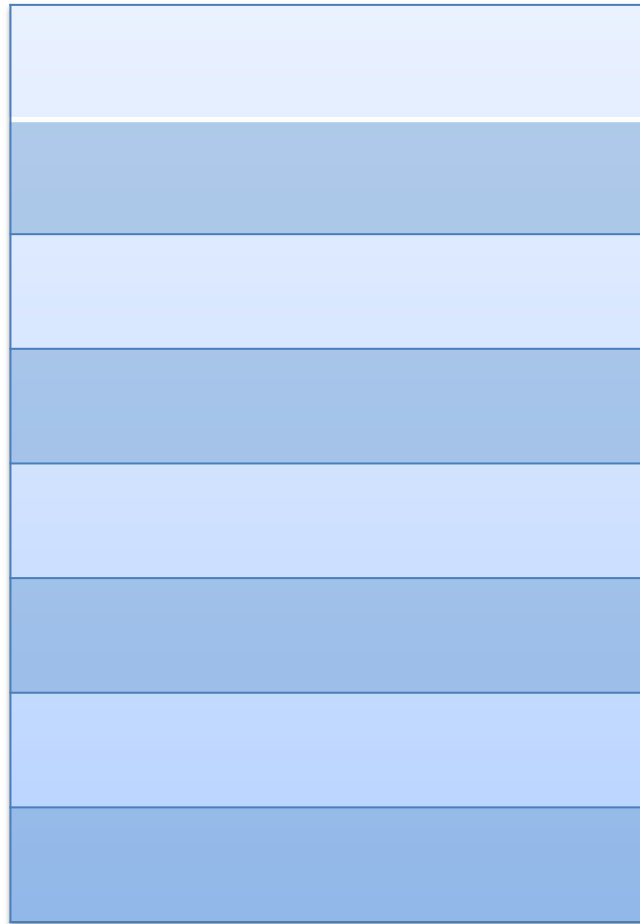
6.00x



Hash Tables

```
def strToInt(s):  
    number = ''  
    for c in s:  
        number = number + str(ord(c))  
    index = int(number)  
    return index
```

```
def hashStr(s, tableSize = 101):  
    number = ''  
    for c in s:  
        number = number + str(ord(c))  
    index = int(number)%tableSize  
    return index
```

6.00x

Hash Tables



6.00x

Hash Tables



6.00x

Hash Tables