

Monte Carlo Simulation

Lecturer: John Guttag



Caravaggio, The Cardsharps




```
def rollDie():
    """returns a random int between 1 and 6"""
    return random.choice([1,2,3,4,5,6])

def checkPascal(numTrials, roll):
    yes = 0.0
    for i in range(numTrials):
        for j in range(24):
            d1 = roll()
            d2 = roll()
            if d1 == 6 and d2 == 6:
                yes += 1
                break
    print 'Probability of losing =', \
        1.0 - yes/numTrials
```



6.00x

Monte Carlo Simulation

```
def rollLoadedDie():  
    if random.random() < 1.0/5.5:  
        return 6  
    else:  
        return random.choice([1,2,3,4,5])
```



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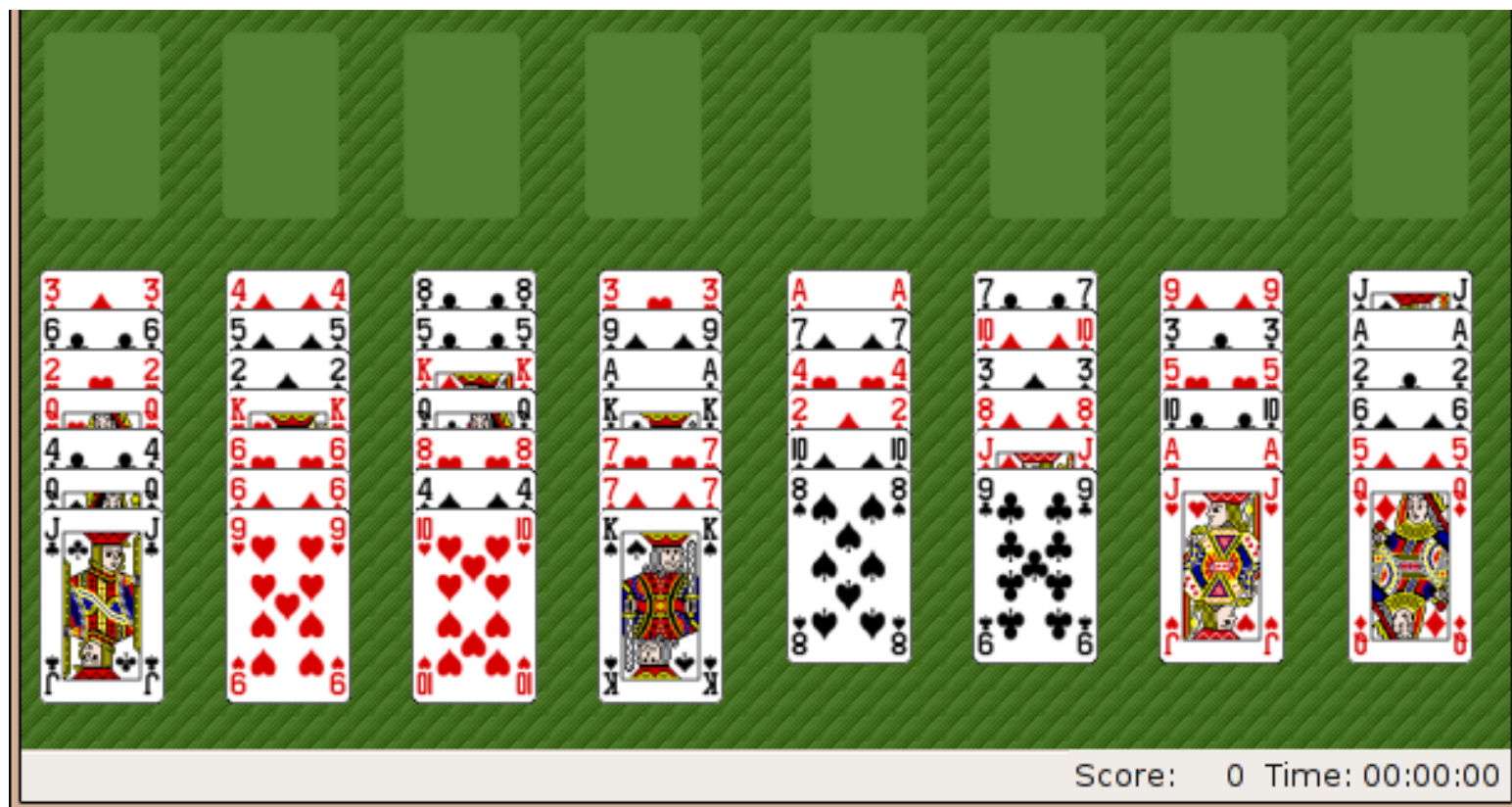
Simulation

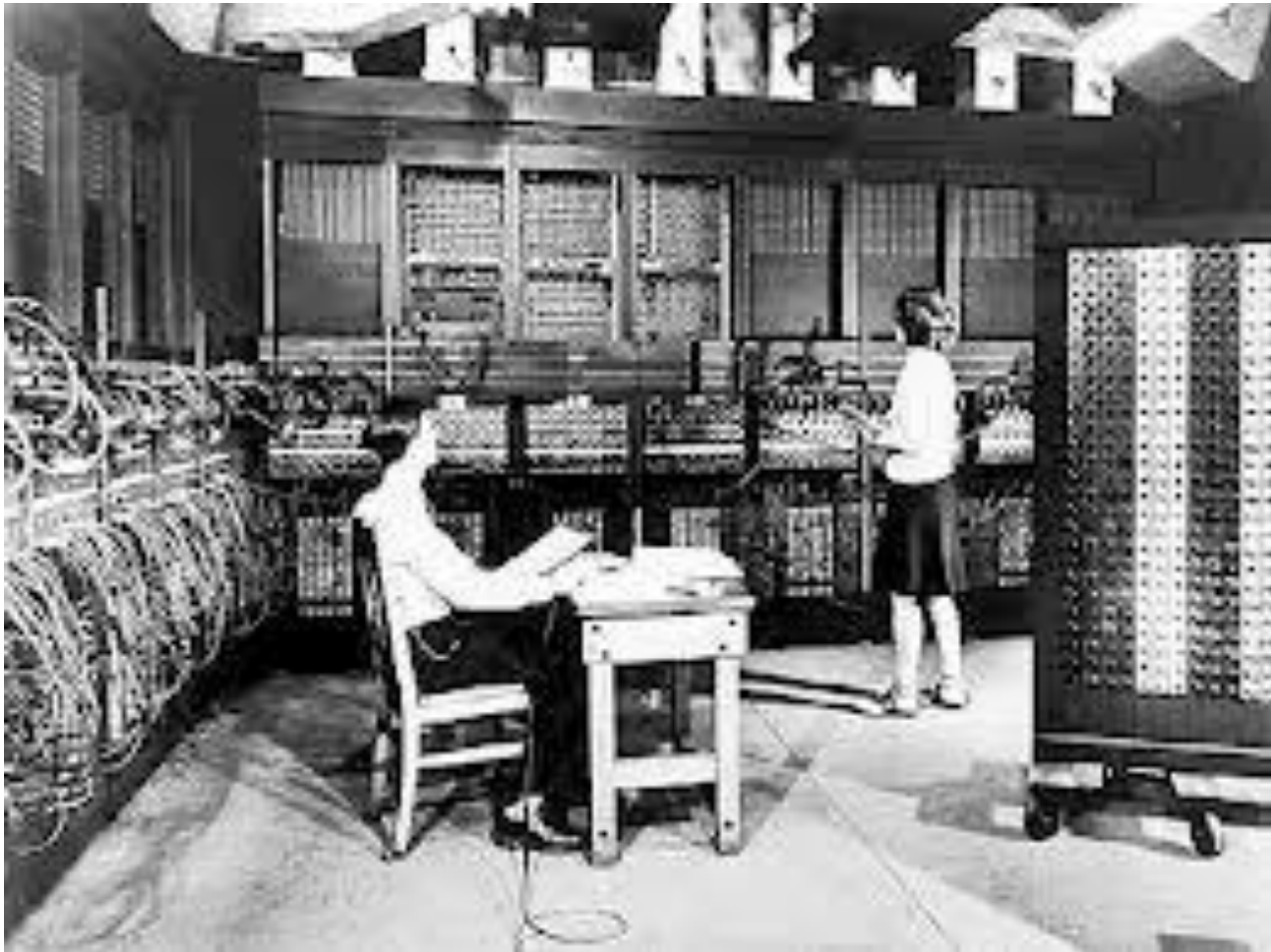


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Monte Carlo Simulation





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```
def flip(numFlips):  
    heads = 0  
    for i in range(numFlips):  
        if random.random() < 0.5:  
            heads += 1  
    return heads/float(numFlips)
```

