```python
'''
Created on Feb 14,2011
@author: ola
'''

import random

def toCardString(card):
    rankStrings = ["ace","two","three","four","five","six","seven",
                   "eight","nine","ten","jack","queen","king"]
    suitStrings = ["spades", "hearts", "diamonds","clubs"]
    return rankStrings[card[0]] + " of " + suitStrings[card[1]]

def get_rank_counts(hand):
    '''
  returns list of how often each rank 1−13 occurs in a hand
  e.g., list[3] = # occurrences of a 3, list[11] = # occurrences of jack
  '''
    counts = [0]*13
    for card in hand:
        rank = card[0]
        counts[rank] += 1
    return counts

def is_pair(hand):

    ranks = get_rank_counts(hand)
    if ranks.count(2) == 1 and ranks.count(1) == 3:
        return True
    return False

def get_deck():
    '''
  create and return an unshuffled deck of cards
  '''
    d = []
    for rank in range(0,13):
        for suit in range(0,4):
            d.append([rank,suit])
    return d

def get_hand(deck):
    random.shuffle(deck)
    return deck[0:5]

def print_hand(hand):
    print '[',
    for card in hand:
        print toCardString(card),',',
    print ']'


def deal_demo():
    deck = get_deck()
    print_hand(deck)
    print_hand(get_hand(deck))
    print_hand(get_hand(deck))

def simulate(n):
    '''
  Simulate dealing n poker hands
  '''
    deck = get_deck()
    pc = 0
    for i in range(0,n):
        hand = get_hand(deck)
        if is_pair(hand):
            pc += 1
    print "# hands = %d, # pairs = %d, prob = %.3f" % (n,pc, 1.0*pc/n)

if __name__ == "__main__":
    deal_demo()
    simulate(500)
```



```python
'''
Created on Feb 14, 2012

@author: ola
'''
import random

def get_roll():
    return [random.randint(1,6), random.randint(1,6)]

def simulate(n):
    return [get_roll() for i in range(n)]


def count_one(roll, all):
    return all.count(roll)

def count_all(all):
    rolls = []
    for first in range(1,7):
        for sec in range(1,7):
            rolls.append([first,sec])

    for roll in rolls:
        tot = count_one(roll,all)
        print roll,"\t",tot

def main():
    print "how many rolls?",
    rolls = raw_input()
    sim = simulate(int(rolls))
    #for x in sim:
    #   print x
    count_all(sim)

if __name__ == "__main__":
    main()
```