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'''
Script to simulate rolling a variable number of dice
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'''
import sys
from test.test_audioop import minvalues
import random

''' EXPAND VERSION: ADD ERROR CHECKING
- add variables for maximum number of dice and maximum number of sides
- add functions (with error checking) to get maximum number of dice
  and maximum number of sides
- add default values for number of dice and number of sides
- add more user feedback
- add logic to suppress welcome messages on subsequent rolls
- change print() statements to use .format method
'''

MINDICE = 1
MAXDICE = 10
MINSIDES = 1
MAXSIDES = 1000000
DEFAULTNUMDICE = 2
DEFAULTNUMSIDES = 6

def main(firsttime=True):
    '''Main entry point for the script '''

    '''Get input from users'''
    if firsttime==True:
        print('Are you ready to roll?')
        print('Just hit enter for the default settings: 2 dice with 6 sides each.')
    print('-----')

    numdice = get_num_dice()
    if numdice>5:
        print('Wow! You chose {} dice. That\'s a lot of dice!'.format(numdice))
    elif numdice==1:
        print('Thank you. You chose {} die. You can choose more!'.format(numdice))
    else:
        print('Thank you. You chose {} dice.'.format(numdice))
    print('-----')

    numsides = get_num_sides()
    if numsides<10:
        print('Thank you. You chose {} sides. You can choose a much bigger number!'.format(
            numsides))
    elif numsides>500000:
        print('Woo-hoo! You chose {} sides! We\'re going to get some big numbers.'.format(
            numsides))
    elif numsides>100:
        print('Yay! You chose {} sides. That\'s a big number!'.format(numsides))
    else:
        print('Thank you. You chose {} sides for your dice.'.format(numsides))
    print('-----')
    if numdice==1:
        print('Rolling {} die with {} sides.'.format(numdice,numsides))
    else:
        print('Rolling {} dice, each with {} sides.'.format(numdice, numsides))

    '''Roll the dice'''
    diceroll = [None]*numdice

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die=0
while (die<numdice):
    diceroll[die] = get_random_int(MINSIDES, numsides)
    #print('Roll {} = {}'.format(die+1, diceroll[die]))
    die += 1

'''Print the results'''
#print('-----')
print('-----')

for i in range (0, numdice):
    print('Die {} rolled {}'.format(i+1,diceroll[i]))

print('-----')
print('-----')

'''Ask user to roll again'''
if query_roll_again('Would you like to roll again?', 'yes'):
    '''repeat the process if they want to roll again'''
    print('-----')
    main(False)
else:
    '''quit'''
    print('-----')
    print('Thank you for playing!')
    print('=====')
    print('=====')

    exit

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'''FUNCTIONS'''

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def get_num_dice():
    '''Asks user to enter the number of dice to roll. Verifies user enters
    a number that is within the allowed range. Returns user's response.
    '''
    while True:
        try:
            response = int(input('Please enter the number of dice to roll (between 1 and 10): ')
            or DEFAULTNUMDICE)
            if (MINDICE<= response <=MAXDICE):
                break
            else:
                print('*** You must enter a whole number between 1 and {}. ***'.format(MAXDICE))
        except ValueError:
            print('*** You must enter a whole number between 1 and {}. ***'.format(MAXDICE))
    return response

def get_num_sides():
    '''Asks user to enter number of sides for the dice. Verifies user enters
    a number that is within the allowed range. Returns user's response.
    '''
    while True:
        try:
            response = int(input('Please enter the number of sides to each die (between 2 and
            100000): ') or DEFAULTNUMSIDES)
            if (MINSIDES< response <=MAXSIDES):
                break
            else:
                print('*** You must enter a whole number between 2 and {}. ***'.format(MAXSIDES))
        except ValueError:
            print('*** You must enter a whole number between 2 and {}. ***'.format(MAXSIDES))
    return response

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def get_random_int(min, max):
    '''Given minimum and maximum values, get random integer'''
    '''    min is the minimum value (always = 1)
        max is the maximum value, equal to the number of sides on the die'''

    return (random.randint(min,max))

def query_roll_again(question, default="yes"):
    """ question = question to ask user
        default = presume this answer if user hits Enter
        returns True for "yes" and False for "no"
        Ref Recipe 577058
    """

    valid = {"yes": True, "y": True, "ye": True,
            "no": False, "n": False}
    if default is None:
        prompt = " [y/n] "
    elif default == "yes":
        prompt = " [Y/n] "
    elif default == "no":
        prompt = " [y/N] "
    else:
        raise ValueError("invalid default answer: '%s'" % default)

    while True:
        sys.stdout.write(question + prompt)
        choice = input().lower()
        if default is not None and choice == "":
            return valid[default]
        elif choice in valid:
            return valid[choice]
        else:
            sys.stdout.write("Please respond with 'yes' or 'no' "
                             "(or 'y' or 'n').\n")

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