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# Creates a Magic Square of odd size bewteen 3 and 15
# Limited size for space considertions
import random
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def squareMaker(size):
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    magic_square = [[0 for x in range(size)] for y in range(size)]
```

```
    #intitalize counts
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```
    incount = 0
    row_out = 0
    col_out = 0
    both_out = 0
    blocked = 0
```

```
    row = 0
    col = size // 2
```

```
    magic_square [row][col] = 1
```

```
    for num in range (2 , size**2 + 1) :
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```
        col = col + 1
        row = row - 1
```

```
        if col >= 0 and col <= size - 1 and row >=0 and row <= size -1:
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```
            if magic_square [row][col] == 0:
                magic_square [row][col] = num
                incount = incount + 1
```

```
            else:
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```
                row = row + 2
                col = col - 1
                magic_square [row][col] = num
                blocked = blocked + 1
```

```
        elif row < 0 and col >=0 and col <= size -1:
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```
            row = size - 1
            magic_square [row][col] = num
            row_out = row_out +1
```

```
        elif col > size - 1 and row >= 0 and row <= size - 1:
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```
            col = 0
            magic_square [row][col] = num
            col_out = col_out + 1
```

```
        elif row < 0 and col > size - 1:
```

```
            row = row + 2
            col = col - 1
            magic_square [row][col] = num
            both_out = both_out +1
```

```

print ("incount: ",incount)
print ("blocked: ",blocked)
print ("row out: ",row_out)
print ("col out: ",col_out)
print ("both out: ",both_out)

```

```

sum = size * ((size**2)//2 +1)
print ("\n\n The sum of each row, column, and diagonal is: ", sum)
return magic_square

```

```

def createRandomMatch(size):
    flat_magic = []          # Flatten the Square
    for row in range(size):
        for col in range(size):
            flat_magic.append(magic_square[row][col])
    print ("\n\n Target 3 x 3 Square",flat_magic, end = " ")

    tries = 0                # counts the attempts to match
    match = False
    while match == False:    # Finding a match loop
        rnd_flat = []        # Create a candidate list
        for index in range(size*size):
            hit = False      # Used to see if a ;potential list entry is unique
            while hit == False:
                num = random.randint(1,9)
                if num not in rnd_flat:
                    rnd_flat.append(num)
                    hit = True
                    break
            if rnd_flat[index] != flat_magic[index]: # Chacking to candidate list matches so far
                #print (rnd_flat)
                break
        tries = tries + 1
        if tries % 100000 == 0:
            print ("\n",rnd_flat, "\n", tries)
        if rnd_flat == flat_magic:
            match = True     # Found a match
            break            # Break out of While match == False: loop

    #print (flat_magic, "\n")
    print (rnd_flat)

print ("It took ", tries, "tries to create a random square to match the Magic Square")

```