EXERCISES

ODD OR EVEN?

Write a program that reads an integer from the user.

Then your program should display a message indicating whether the integer is even or odd.

SOLUTION

```
num = int(input("Hello!Insert a number: "))
if num % 2 == 0:
    print("It is even!")
else:
    print("It is odd!")
```

IS IT A LEAP YEAR?

Write a program that reads a year from the user and displays a message indicating whether or not it is a leap year.

SOLUTION

```
year=int(input('Insert year: '))
if year % 4==0:
    print('Year %d is leap!'%year)
else:
    print("It's a usual year :( ")
```

Results:

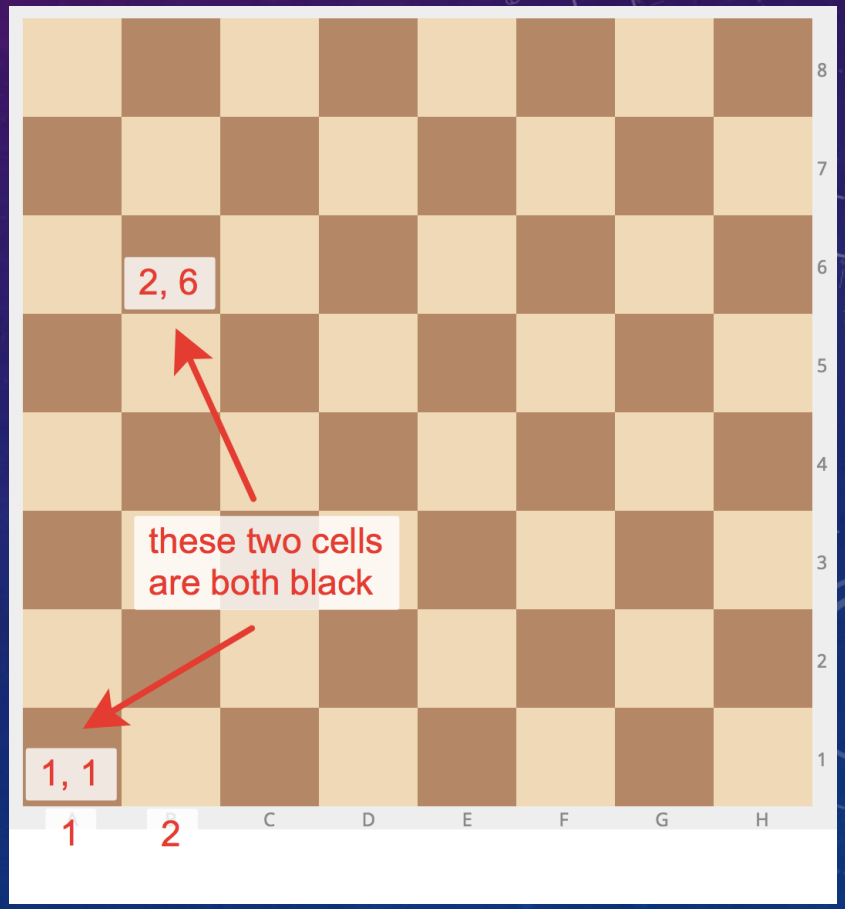
```
Insert year: 1996
Year 1996 is leap!
```

```
Insert year: 1846
It's a usual year :(
```

WHAT COLOR IS THAT SQUARE?

Write a program that gets as input a position in the chessboard from the user.

Display a message indicating whether it's a white or a brown cell.



SOLUTION

```
print('Insert the coordinates of the cell in chess table...')
x = int(input('Row: '))
y = int(input('Column: '))
if (x+y) % 2 == 0:
    print("It's a black cell")
else:
    print("It's a white cell")
```

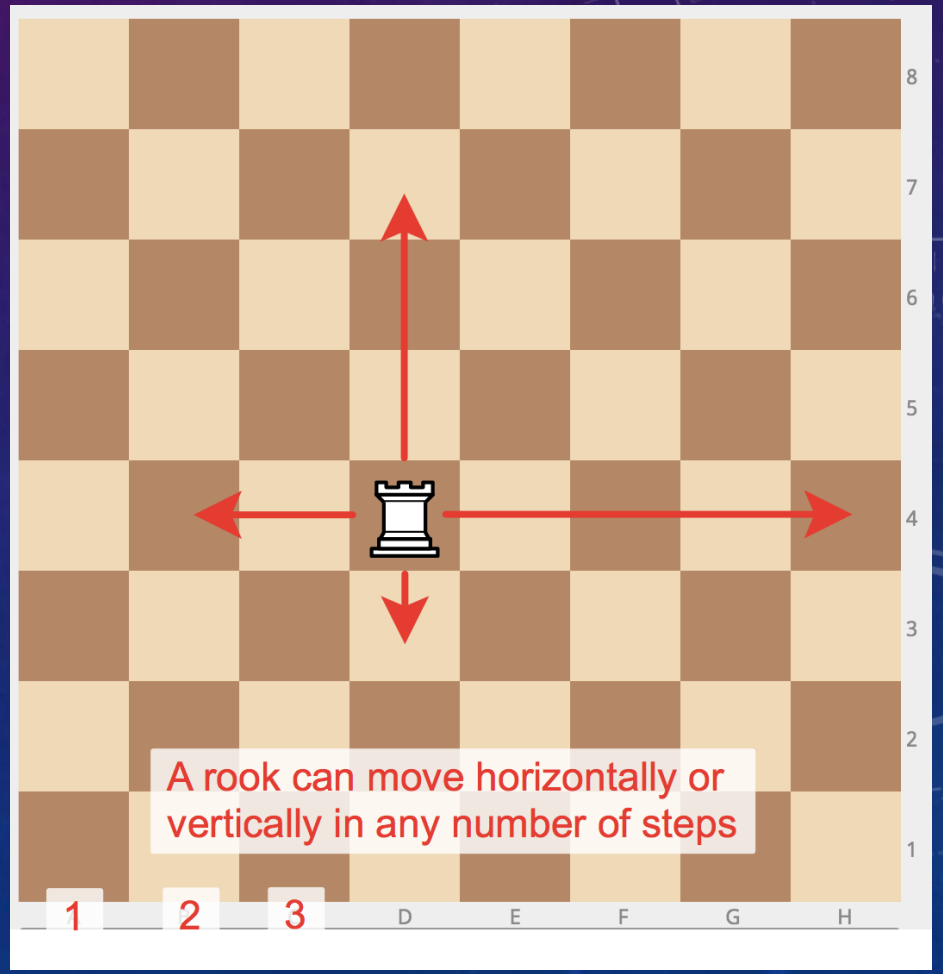
Result:

```
Give the coordinates of the cell in chess table...
Row: 1
Column: 4
It's white cell
```

«ROOK MOVE»

Given two different cells,
determine if a rook can go from the first cell to the second in one move.

- **Input:** four numbers from 1 to 8, each specifying the column and row number, first two - for the first cell, and then the last two - for the second cell.
- **Print** YES if a rook can go from the first cell to the second in one move, or NO otherwise.



SOLUTION

```
r1 = int(input("Insert the row of the first cell: "))
c1 = int(input("Insert the column of the first cell: "))
r2 = int(input("Insert the row of the second cell: "))
c2 = int(input("Insert the column of the second cell: "))
if r1 == r2 or c1 == c2:
    print("Yes")
else:
    print("No")
```

ROULETTE PAYOUTS

For this game a roulette has 37 spaces on it (18 black, 18 red, 1 green).

The green space is numbered 0.

Red spaces :

1, 3, 5, 7, 9, 12, 14, 16, 18, 19, 21, 23, 25, 27, 30 32, 34,36.

The remaining integers between 1 and 36 are black spaces.

➢Many different bets can be placed in roulette:

- Single number (1 to 36 or 0)
- Red versus Black
- Odd versus Even

(Note that 0 does not pay out for even)

✓ Write a program that simulates a spin of a roulette wheel by using Python's random number generator.

✓ The player should start with 100$ and get extra 100$ when he wins, whereas lose 10$ when he bets wrong.

✓ Display its time the outcome of the game and the player's money.The game should stop after pushing the button 's' or 'S'.

SOLUTION

```
import random
money = 100
print("Welcome to the BIG BET!")
print("Press Enter to play!")

while( input() != ('s' or 'S')):
    print("Choose bet:\n Press 1 for number bet \n Press 2 for red-black bet \n Press 3 for an odd-even bet \n")
    choice = input("Press a button:")
    if choice == '1':
        gamble = int(input("\nGamble in number:"))
        temp = random.randint(0,36)
        print("\nThe spin resulted in ... %d" %temp)
        if gamble == temp:
            outcome = True
        else:
            outcome = False

    elif choice == '2':
        gamble = int(input("Select color:\n Press 1 for red \n Press 2 for black"))
        temp = random.randint(1,2)
        if temp == 1:
            color = 'red'
        else:
            color = 'black'
        print("\nThe spin resulted in ... " + color)
        if gamble == temp:
            outcome = True
        else:
            outcome = False

    elif choice == '3':
        num = int(input("Press 1 for odd and 2 for even.Select: "))
        if((temp % 2 ==0 and num == 2)or(temp % 2 != 0 and num == 1)):
            outcome = True
        else:
            outcome = False

    if outcome:
        print("You won 100 Euro!!!")
        money += 100
        print("Money remaining: %d" %money)
    else:
        print("You lost...Pay 10 Euro")
        money -= 10
        print("Money remaining: %d" %money)
    print("\n Press Enter to continue and s to exit")
```