In [1]:
```python
 #Find the day of the week for a given date (without built-in fun
def day_of_week(d, m, y):
    if m < 3:
        m += 12
        y -= 1
    k = y % 100
    j = y // 100
    day = (d + (13 * (m + 1)) // 5 + k + (k // 4) + (j // 4) - 2 * j) % 7
    days = ["Saturday", "Sunday", "Monday", "Tuesday", "Wednesday", "Thursday",
    return days[day]

day, month, year = map(int, input("Enter date (DD MM YYYY): ").split())
print("Day of the Week:", day_of_week(day, month, year))
```

```
Day of the Week: Sunday
```

In [12]:
```python
#Implement a rock-paper-scissors game
import random
choices = ["rock", "paper", "scissors"]
user = input("Enter rock, paper, or scissors: ").lower()
computer = random.choice(choices)

print("Computer chose:", computer)
if user == computer:
    print("It's a tie!")
elif (user == "rock" and computer == "scissors") or   (user == "scissors" and cc
     print("You win!")
else:
    print("You lose!")
```

```
Computer chose: paper
You lose!
```

In [14]:
```python
#Implement a loan eligibility checker
income = int(input("Enter monthly income: "))
credit_score = int(input("Enter credit score: "))
employed = input("Are you employed? (yes/no): ").lower()

if income >= 25000 and credit_score >= 700 and employed == "yes":
    print("Loan Approved")
else:
    print("Loan Denied")
```

```
Loan Approved
```

In [22]:
```python
#Check if a knight move in chess is valid
x1, y1 = map(int, input("Enter current position (x y): ").split())
x2, y2 = map(int, input("Enter new position (x y): ").split())

if (abs(x1 - x2), abs(y1 - y2)) in [(2, 1), (1, 2)]:
    print("Valid Knight Move")
else:
    print("Invalid Move")
```

```
Valid Knight Move
```

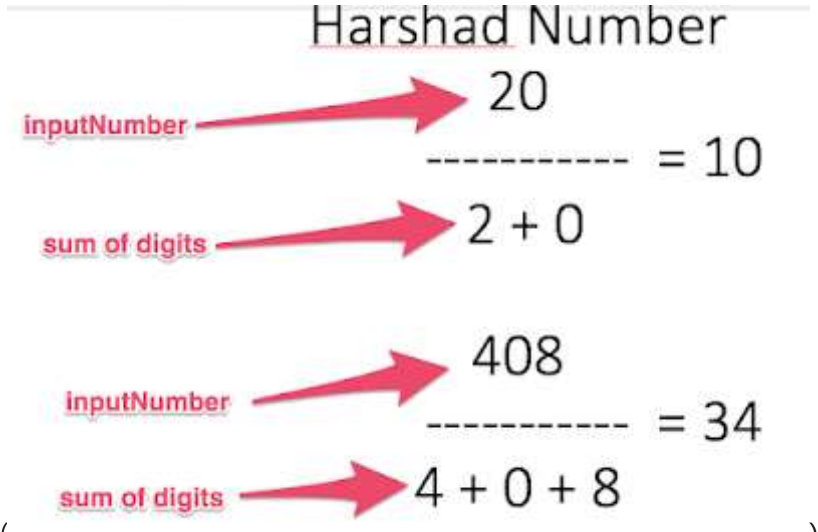
In [26]:
```python
#Validate an email format
import re
email = input("Enter email: ")
if re.match(r"^[\w\.-]+@[\w\.-]+\.(com|org|net|edu)$", email):
```

```
     print("Valid Email")
else:
    print("Invalid Email")
```

```
Valid Email
```

In [30]:
```
# if a number is a Harshad number
num = int(input("Enter a number: "))
sum_digits = sum(int(digit) for digit in str(num))
if num % sum_digits == 0:
    print("Harshad Number")
else:
    print("Not a Harshad Number")
```

```
Harshad Number
```



![Alt Text]( )

In [35]:
```
#Determine zodiac sign based on birth date
month = int(input("Enter birth month (1-12): "))
day = int(input("Enter birth day: "))

zodiac = [("Capricorn", 20), ("Aquarius", 19), ("Pisces", 20), ("Aries", 20),
          ("Taurus", 21), ("Gemini", 21), ("Cancer", 22), ("Leo", 22),
          ("Virgo", 22), ("Libra", 23), ("Scorpio", 23), ("Sagittarius", 22), ("

sign = zodiac[month - 1][0] if day <= zodiac[month - 1][1] else zodiac[month][0]
print("Zodiac Sign:", sign)
```

```
Zodiac Sign: Capricorn
```

In [37]:
```
#Convert a Roman numeral to an integer
def roman_to_int(s):
    roman = {'I': 1, 'V': 5, 'X': 10, 'L': 50, 'C': 100, 'D': 500, 'M': 1000}
    total = 0
    for i in range(len(s)):
        if i > 0 and roman[s[i]] > roman[s[i - 1]]:
            total += roman[s[i]] - 2 * roman[s[i - 1]]
        else:
            total += roman[s[i]]
    return total

num = input("Enter Roman numeral: ").upper()
print("Integer:", roman_to_int(num))
```

```
Integer: 60
```

In [39]:
```python
#Implement a ticket pricing system
age = int(input("Enter age: "))

if age < 5:
    print("Ticket Price: Free")
elif age >= 60:
    print("Ticket Price: ₹50")
else:
    print("Ticket Price: ₹100")
```

```
Ticket Price: ₹100
```

In [43]:
```python
#Check if three numbers form a Pythagorean triplet
x, y, z = sorted(map(int, input("Enter three numbers: ").split()))
if x**2 + y**2 == z**2:
    print("Pythagorean Triplet")
else:
    print("Not a Pythagorean Triplet")
```

```
Not a Pythagorean Triplet
```

In [ ]:
```python

```