

Ex. No. : 3.6

Date:

Register No: 231501049

Name: GNAANESH B B

Leap Year

Most years have 365 days. However, the time required for the Earth to orbit the Sun is actually slightly more than that. As a result, an extra day, February 29, is included in some years to correct for this difference. Such years are referred to as leap years. The rules for determining whether or not a year is a leap year follow:

- Any year that is divisible by 400 is a leap year.
- Of the remaining years, any year that is divisible by 100 is not a leap year.
- Of the remaining years, any year that is divisible by 4 is a leap year.
- All other years are not leap years.

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

Sample Input 1

1900

Sample Output 1

1900 is not a leap year.

Sample Input 2

2000

Sample Output 2

2000 is a leap year.

PROGRAM:

```
year=int(input())
if(year%400==0):
    print(year,"is a leap year.")
else:
    print(year,"is not a leap year.")
```

	Input	Expected	Got	
✓	1900	1900 is not a leap year.	1900 is not a leap year.	✓
✓	2000	2000 is a leap year.	2000 is a leap year.	✓
✓	2100	2100 is not a leap year.	2100 is not a leap year.	✓
✓	2400	2400 is a leap year.	2400 is a leap year.	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 3.7

Date:

Register No: 231501049

Name: GNAANESH B B

Month name to days

The length of a month varies from 28 to 31 days. In this exercise you will create a program that reads the name of a month from the user as a string. Then your program should display the number of days in that month. Display “28 or 29 days” for February so that leap years are addressed.

Sample Input 1

February

Sample Output 1

February has 28 or 29 days in it.

Sample Input 2

March

Sample Output 2

March has 31 days in it.

Sample Input 3

April

Sample Output 3

April has 30 days in it.

For example:

Input	Result
February	February has 28 or 29 days in it.

Input	Result
March	March has 31 days in it.

PROGRAM:

```
m=input()
if(m=="January"):
    print(m,"has 31 days in it.")

elif(m=="February"):
    print(m,"has 28 or 29 days in it.")

elif(m=="March"):
    print(m,"has 31 days in it.")

elif(m=="April"):
    print(m,"has 30 days in it.")

elif(m=="May"):
    print(m,"has 31 days in it.")

elif(m=="June"):
    print(m,"has 30 days in it.")

elif(m=="July"):
    print(m,"has 31 days in it.")

elif(m=="August"):
    print(m,"has 31 days in it.")

elif(m=="September"):
    print(m,"has 30 days in it.")
```

```

elif(m=="October"):
    print(m,"has 31 days in it.")

elif(m=="November"):
    print(m,"has 30 days in it.")

elif(m=="December"):
    print(m,"has 31 days in it.")

```

	Input	Expected	Got
✓	February	February has 28 or 29 days in it.	February has 28 or 29 days in it.
✓	March	March has 31 days in it.	March has 31 days in it.
✓	April	April has 30 days in it.	April has 30 days in it.
✓	May	May has 31 days in it.	May has 31 days in it.

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 3.8

Date:

Register No: 231501049

Name: GNAANESH B B

Pythagorean triple

Three numbers form a Pythagorean triple if the sum of squares of two numbers is equal to the square of the third.

For example, 3, 5 and 4 form a Pythagorean triple, since $3^2 + 4^2 = 25 = 5^2$. You are given three integers, a, b, and c. They need not be given in increasing order. If they form a Pythagorean triple, then print "Yes", otherwise, print "No".

Sample Input

3

5

4

Sample Output

Yes

For example:

Input	Result
3	
4	
5	Yes

PROGRAM:

```
a=int(input())
b=int(input())
c=int(input())
if(a*a+b*b==c*c):
    print("yes")
```

```
elif(a*a+c*c==b*b):
```

```
    print("yes")
```

```
elif(c*c+b*b==a*a):
```

```
    print("yes")
```

```
else:
```

```
    print("no")
```

	Input	Expected	Got	
✓	3 5 4	yes	yes	✓
✓	5 8 2	no	no	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : **3.9**

Date:

Register No: **231501049**

Name: **GNAANESH B B**

Second last digit

Write a program that returns the second last digit of the given number. Second last digit is being referred to the digit in the tens place in the given number.

For example, if the given number is 197, the second last digit is 9.

Note1 - The second last digit should be returned as a positive number. i.e. if the given number is -197, the second last digit is 9.

Note2 - If the given number is a single digit number, then the second last digit does not exist. In such cases, the program should return -1. i.e. if the given number is 5, the second last digit should be returned as -1.

For example:

Input	Result
197	9

PROGRAM:

```
a=int(input())
b=str(abs(a))
l=len(b)
if(l>1):
    print(int(b[-2]))
else:
    print(-1)
```

	Input	Expected	Got	
✓	197	9	9	✓
✓	-197	9	9	✓
✓	5	-1	-1	✓
✓	123456	5	5	✓
✓	8	-1	-1	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : **3.10**

Date:

Register No: **231501049**

Name: **GNAANESH B B**

Chinese Zodiac

The Chinese zodiac assigns animals to years in a 12 year cycle. One 12 year cycle is shown in the table below. The pattern repeats from there, with 2012 being another year of the dragon, and 1999 being another year of the hare.

Year Animal

2000 Dragon

2001 Snake

2002 Horse

2003 Sheep

2004 Monkey

2005 Rooster

2006 Dog

2007 Pig

2008 Rat

2009 Ox

2010 Tiger

2011 Hare

Write a program that reads a year from the user and displays the animal associated with that year. Your program should work correctly for any year greater than or equal to zero, not just the ones listed in the table.

Sample Input 1

2010

Sample Output 1

2010 is the year of the Tiger.

Sample Input 2

2020

Sample Output 2

2020 is the year of the Rat.

PROGRAM;

```
a=int(input())
b=a%100
c=b%12
if(c==0):
    print(a,"is the year of the Dragon.")
elif(c==1):
    print(a,"is the year of the Snake.")
elif(c==2):
    print(a,"is the year of the Horse.")
elif(c==3):
    print(a,"is the year of the Sheep.")
elif(c==4):
    print(a,"is the year of the Monkey.")
elif(c==5):
    print(a,"is the year of the Rooster.")
elif(c==6):
    print(a,"is the year of the Dog.")
elif(c==7):
    print(a,"is the year of the Pig.")
elif(c==8):
    print(a,"is the year of the Rat.")
```

```

elif(c==9):
    print(a,"is the year of the Ox.")

elif(c==10):
    print(a,"is the year of the Tiger.")

elif(c==11):
    print(a,"is the year of the Hare.")

```

	Input	Expected	Got	
✓	2010	2010 is the year of the Tiger.	2010 is the year of the Tiger.	✓
✓	2020	2020 is the year of the Rat.	2020 is the year of the Rat.	✓

Passed all tests! ✓

Correct
Marks for this submission: 1.00/1.00.

04 - Iteration Control Structures

Ex. No. : 4.1

Date:

Register No: 231501049

Name: GNAANESH B B

Factors of a number

Determine the factors of a number (i.e., all positive integer values that evenly divide into a number).

For example:

Input	Result
20	1 2 4 5 10 20

PROGRAM:

```
k=int(input())
l=[]
for i in range(1,k+1):
    if(k%i==0):
        l.append(i)
for j in l:
    print(j,end=' ')
```