In [1]:
```
#Assessment 1
#Problem 1

name = input("What is your name: ")
age = int(input("How old are you: "))
year = str((2014 - age)+100)
print(name + " will be 100 years old in the year " + year)
```

```
What is your name: Praveen
How old are you: 21
Praveen will be 100 years old in the year 2093
```

In [4]:
```
#Problem 2

num = int(input("Enter a number: "))
mod = num % 2
if mod > 0:
    print(" an odd number.")
else:
    print(" an even number.")
```

```
Enter a number: 6
 an even number.
```

In [13]:
```
#Problem 3

lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    ele = int(input())
    lst.append(ele)
print("less than 5")
for i in range(0,n):
    if lst[i]<5:
        print(lst[i],end=" ")
```

```
Enter number of elements : 5
2
4
6
8
3
less than 5
2 4 3
```

In [14]:
```
#Problem 4

num = int(input("Please choose a number to divide: "))

listRange = list(range(1,num+1))

divisors = []

for i in listRange:
    if num % i == 0:
        divisors.append(i)

print(divisors)
```

```
Please choose a number to divide: 8
[1, 2, 4, 8]
```

In [19]:
```python
#Problem 5

list1 = []
list2 = []
newList = []
n1 = int(input("Enter number of elements List 1 : "))
n2 = int(input("Enter number of elements List 2: "))
print("List 1 elements :")
for i in range(0, n1):
    ele = int(input())
    list1.append(ele)

print("List 2 elements :")
for i in range(0, n2):
    ele = int(input())
    list2.append(ele)

for i in list1:
    if i in list2:
        if i not in newList:
            newList.append(i)

print(list1)
print(list2)
print("result elements : ")
print(newList)
```

```
Enter number of elements List 1 : 4
Enter number of elements List 2: 5
List 1 elements :
1
2
3
4
List 2 elements :
3
4
4
3
5
[1, 2, 3, 4]
[3, 4, 4, 3, 5]
result elements :
[3, 4]
```

In [20]:
```python
#Problem 6

wrd=input("Please enter a word")
wrd=str(wrd)
rvs=wrd[::-1]
print(rvs)
if wrd == rvs:
    print("This word is a palindrome")
else:
    print("This word is not a palindrome")
```

```
Please enter a wordabba
abba
This word is a palindrome
```

In [22]:
```python
#Problem 7
```

```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    ele = int(input())
    lst.append(ele)

list2=[i for i in lst if i % 2 == 0]
print("Only even")
print(list2)
```

```
Enter number of elements : 5
1
2
3
4
5
Only even
[2, 4]
```

In [26]:

```
#Problem 8


user1 = input("your name :")
user2 = input("And your frnd name :")
user1_answer = input("%s, do yo want to choose rock, paper or scissors" % user1)
user2_answer = input("%s, do you want to choose rock, paper or scissors" % user2)

def compare(u1, u2):
    if u1 == u2:
        return("It's a tie!")
    elif u1 == 'rock':
        if u2 == 'scissors':
            return("Rock wins!")
        else:
            return("Paper wins!")
    elif u1 == 'scissors':
        if u2 == 'paper':
            return("Scissors win!")
        else:
            return("Rock wins!")
    elif u1 == 'paper':
        if u2 == 'rock':
            return("Paper wins!")
        else:
            return("Scissors win!")
    else:
        return("Invalid input! You have not entered rock, paper or scissors, try again.


print(compare(user1_answer, user2_answer))
```

```
your name :praveen
And your frnd name :john
praveen, do yo want to choose rock, paper or scissorspaper
john, do you want to choose rock, paper or scissorsrock
Paper wins!
```

In [30]:

```
#Problem 9

import random

number = random.randint(1,9)
```

```
guess = 0
count = 0


while guess != number and guess != "exit":
    guess = input("What's your guess?")

    if guess == "exit":
        print("Thanks for using...")
        break

    guess = int(guess)
    count += 1

    if guess < number:
        print("Too low!")
    elif guess > number:
        print("Too high!")
    else:
        print("You got it!")
        print("And it only took you",count,"tries!")
```

```
What's your guess?5
Too low!
What's your guess?7
You got it!
And it only took you 2 tries!
```

In [32]:

```
#Problem 10

num=int(input("Enter a number :"))

if num > 1:

    for i in range(2, num):

        if (num % i) == 0:
            print(num, "is not a prime number")
            break
        else:
            print(num, "is a prime number")
            break

else:
    print(num, "is not a prime number")
```

```
Enter a number :11
11 is a prime number
```

In [33]:

```
#Problem 11

lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    ele = int(input())
    lst.append(ele)
newList=[]
newList.append(lst[0])
newList.append(lst[-1])
print(newList)
```

```
Enter number of elements : 4
```

```
2
3
4
5
[2, 5]
```

In [34]:
```
#Problem 12

def fib(num):
    a=0
    b=1
    print(b,end=" ")
    for i in range(1,num):
        c=a+b
        a=b
        b=c
        print(c ,end=" ")

num=int(input("Enter a number :"))
fib(num)
```

```
Enter a number :5
1 1 2 3 5
```

In [40]:
```
#Problem 13

def dup(lst):
    list2=[]
    for i in lst:
        if i not in list2:
            list2.append(i)
    print(list2)
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    ele = int(input())
    lst.append(ele)

print(lst)
dup(lst)
```

```
Enter number of elements : 5
1
2
2
3
4
[1, 2, 2, 3, 4]
[1, 2, 3, 4]
```

In [7]:
```
#Problem 14

sentance=input('Enter a sentance :')
splitList=sentance.split(" ")
res=splitList[::-1]
for i in res:
    print(i,end=" ")
```

```
Enter a sentance :this is soo bad
bad soo is this
```

In [12]:
```
#Problem 15
```

```
import random


response = input('How many characters?\n')
length = int(response)

password = ''
for i in range(length):
    char = chr(random.randrange(33,127))
    password += char

print(password)
```

```
How many characters?
8
$faw^iID
```

In [16]:

```
#Problem 16

import random

secret = [random.randint(0,9), random.randint(0,9), random.randint(0,9), random.randint
cows_count=0
bulls_count=0
cows = 0
tries = 0
while cows != 4:
    guess = input("Guess a 4-digit number: ")

    if guess == 'exit':
        tries = False
        break

    cows = 0
    bulls = 0
    bullsecret = secret.copy()
    bullguess = list(guess)

    for gd, sd in zip(guess, secret):
        if int(gd) == sd: #cows are right number right place
            cows += 1
            bullsecret.remove(sd)
            bullguess.remove(gd)
    for bgd in bullguess:
        if int(bgd) in bullsecret: #bulls are right number wrong place
            bulls += 1

    print('Cows:', cows, ' Bulls:', bulls)
    cows_count=cows_count+cows
    bulls_count=bulls_count+bulls
    tries += 1

if tries:
    print('Good job! It took you', tries, 'tries to guess the answer.')
    print('cows count',cows_count ,'and bulls count ',bulls_count)
else:
    print(':(')
    print('Fine, the answer was ', end='')
    for x in secret:
        print(x, end='')
```

```
    print()
    print('cows count',cows_count ,'and bulls count ',bulls_count)
```

```
Guess a 4-digit number: 3444
Cows: 1  Bulls: 0
Guess a 4-digit number: 2334
Cows: 2  Bulls: 0
Guess a 4-digit number: 4555
Cows: 0  Bulls: 1
Guess a 4-digit number: 2344
Cows: 2  Bulls: 0
Guess a 4-digit number: 4566
Cows: 0  Bulls: 3
Guess a 4-digit number: 45656
Cows: 0  Bulls: 3
Guess a 4-digit number: 3434
Cows: 1  Bulls: 0
Guess a 4-digit number: exit
:(
Fine, the answer was 2674
cows count 6 and bulls count  7
```

In [19]:

```
#Problem 17

def in_list(list,s):
    min=0
    max=len(list)-1
    while(min<=max):
        mid = (min+max) // 2
        if(list[mid] == s):
            return True
        if list[mid] < s:
            min = mid+1
        else:
            max = mid-1
            return False
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    ele = int(input())
    lst.append(ele)
lst.sort()
print(lst)
search=int(input("Enter search element :"))
print(in_list(lst,search))
```

```
Enter number of elements : 5
4
1
2
3
6
[1, 2, 3, 4, 6]
Enter search element :6
True
```

In [34]:

```
#Problem 18

num1=int(input("Enter number 1 :"))
num2=int(input("Enter number 2 :"))
num3=int(input("Enter number 3 :"))

print("Maximum number :",max(num1,num2,num3))
```

```python
def max(num1,num2,num3):

    if num1>num2 and num1>num3:

        return num1


    elif num2>num3 and num2>num1:

        return num2
    else:
        return num3
```

```
Enter number 1 :3
Enter number 2 :7
Enter number 3 :5
Maximum number : 7
```