Computer

Science

Practical

File

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Python

1. Finding the maximum, minimum, mean in list of integers
2. Linear search and binary search on list / tuple of numbers
3. Insertion in list of integers
4. Deletion from a list of integers
5. Merge 2 integer lists to a third list
6. Test for all palindrome numbers from 20 -200
7. Display all Armstrong numbers from 20 – 200
8. Display all Prime numbers from 20 – 200
9. Sort: bubble, selection and insertion sort
10. Strings:
    1. Compare
    2. Concatenation
    3. Palindrome
    4. Reverse every word in a string
11. Create a program that creates a dictionary histogram
12. Create a program that creates a dictionary where key is the len of the different words and the frequencies of the words of the same length as values.

**Code:**

l=[1,2,5,4,6,9,3,5,6] #Max number in a list

max=0

for i in l:

if max<i:

max=i

print(max)

l=[1,2,5,4,6,9,3,5,6] #Min number in a list

min=l[0]

for i in l:

if min>i:

min=i

print(min)

l=[1,2,5,4,6,9,3,5,6] #Mean of all the number is a list

sum=0

for i in l:

sum+=i

mean=sum/len(l)

print(mean)

**Output:**

1. 9
2. 1
3. 4.55555555555555

**Code:**

L=[1,4,9,6,3,5,87,66] #Binary Search

A=sorted(L)

x=1

f=0

l=len(A)-1

found=0

while f<=l:

m=(f+l)//2

if L[m]==x:

found=1

break

elif L[m]<x:

f=m+1

else:

l=m-1

if found==0:

print('Not found')

else:

print('Found',x,'at',m+1)

**Output:**

Found 1 at 1

**Code:**

def search(l,n,x): #Linear Search

for i in range (n):

if l[i]==x:

return i

return -1

a=[2,3,10,40,4]

l=sorted(a)

x=10

n=len(l);

result=search(l,n,x)

if result==-1:

print('Not found')

else:

print('Found',x,'at',result+1)

**Output:**

Found 10 at 4

**Code:**

a=[1,2,3,4] #Merge 2 lists

b=[5,6,7,8]

c=[]

i=0

j=0

while i<len(a):

c.append(a[i])

i+=1

while j<len(b):

c.append(b[j])

j+=1

print(c)

**Output:**

[1, 2, 3, 4, 5, 6, 7, 8]

**Code:**

for i in range(20,201): #Palindromes from 20 to 200

d=i

c=0

while d!=0:

b=d%10

c=c\*10+b

d=d//10

if i==c:

print(i,"is a palindrome")

**Output:**

22 is a palindrome

33 is a palindrome

44 is a palindrome

55 is a palindrome

66 is a palindrome

77 is a palindrome

88 is a palindrome

99 is a palindrome

101 is a palindrome

111 is a palindrome

121 is a palindrome

131 is a palindrome

141 is a palindrome

151 is a palindrome

161 is a palindrome

171 is a palindrome

181 is a palindrome

191 is a palindrome

**Code:**

for i in range(20,201): #Armstrong numbers from 20 to 200

a=i

c=0

d=a

while a!=0:

b=a%10

c+=b\*b\*b

a//=10

if c==d:

print(i,"is an armstrong number.")

**Output:**

153 is an armstrong number.

**Code:**

for i in range(20,201): #Prime numbers from 20 to 200

for j in range(2,i):

if i%j==0:

break

else:

print(i,"is a prime number.")

**Output:**

23 is a prime number.

29 is a prime number.

31 is a prime number.

37 is a prime number.

41 is a prime number.

43 is a prime number.

47 is a prime number.

53 is a prime number.

59 is a prime number.

61 is a prime number.

67 is a prime number.

71 is a prime number.

73 is a prime number.

79 is a prime number.

83 is a prime number.

89 is a prime number.

97 is a prime number.

101 is a prime number.

103 is a prime number.

107 is a prime number.

109 is a prime number.

113 is a prime number.

127 is a prime number.

131 is a prime number.

137 is a prime number.

139 is a prime number.

149 is a prime number.

151 is a prime number.

157 is a prime number.

163 is a prime number.

167 is a prime number.

173 is a prime number.

179 is a prime number.

181 is a prime number.

191 is a prime number.

193 is a prime number.

197 is a prime number.

199 is a prime number.

**Code:**

l=[64,34,25,12,22,11,90] #Bubble Sort

n=len(l)

for i in range(n):

for j in range(0,n-i-1):

if l[j]>l[j+1]:

l[j],l[j+1]=l[j+1],l[j]

print(l)

l=[12,11,13,5,6] #Insertion Sort

for i in range(1,len(l)):

key=l[i]

j=i-1

while j>=0 and key<l[j]:

l[j+1]=l[j]

j-=1

l[j+1]=key

print(l)

l=[64,25,12,22,11] #Selection Sort

for i in range(len(l)):

min=i

for j in range(i+1,len(l)):

if l[min]>l[j]:

min=j

l[i],l[min]=l[min],l[i]

print(l)

**Output:**

1. [11, 12, 22, 25, 34, 64, 90]
2. [5, 6, 11, 12, 13]
3. [11, 12, 22, 25, 64]

**Code:**

str1='hello' #String compare

str2='hello'

flag=0

if len(str1)==len(str2):

for i in range(len(str1)):

if str1[i]!=str2[i]:

flag=1

if flag!=1:

print('The strings are equal')

else:

print('Strings are not equal')

else:

print('Strings are not equal')

a='hel' #String concatenation

b='lo'

c=''

i=0

j=0

while i<len(a):

c+=a[i]

i+=1

while j<len(b):

c+=b[j]

j+=1

print(c)

a='rotor' #String palindrome

flag=0

for i in range(len(a)):

j=len(a)-1-i

if a[i]!=a[j]:

flag=1

if flag!=1:

print('Palindrome')

else:

print('Not a palindrome')

a=’hello how are you’ #Reverse each word

a+=' '

b=''

c=''

d=''

for i in range(len(a)):

if a[i]!=' ':

b+=a[i]

else:

for y in range(len(b)-1,-1,-1):

c+=b[y]

d+=c

d+=' '

c=''

b=''

print(d)

**Output:**

1. The strings are equal
2. hello
3. Palindrome
4. olleh woh era uoy

**Code:**

a='brontosaurus' #Histogram

d={}

for i in a:

d[i]=0

d[i]+=1

print(d)

**Output:**

{'b': 1, 'r': 1, 'o': 1, 'n': 1, 't': 1, 's': 1, 'a': 1, 'u': 1}

**Code:**

l=['hello','lol','rofl','sms','moody']

#dictionary where key is the len of the different words and the frequencies of the words of the same length as values.

d={}

for i in l:

num=0

for j in l:

if len(i)==len(j):

num+=1

d[len(i)]=num

print(d)

**Output:**

{5: 2, 3: 2, 4: 1}

MySQL

















