Ch5

5-1

A = [0 for i in range(10)]

for i in range(10):

 A[i] = int(input("Please input the value: "))

for i in range(10):

 if A[i] > 5:

 A[i] -= 5

 else:

 A[i] += 5

 print("A[",i,"] = ",A[i])

**Result:**

Please input the value: 1

Please input the value: 2

Please input the value: 3

Please input the value: 4

Please input the value: 5

Please input the value: 6

Please input the value: 7

Please input the value: 8

Please input the value: 9

Please input the value: 10

A[ 0 ] = 6

A[ 1 ] = 7

A[ 2 ] = 8

A[ 3 ] = 9

A[ 4 ] = 10

A[ 5 ] = 1

A[ 6 ] = 2

A[ 7 ] = 3

A[ 8 ] = 4

A[ 9 ] = 5

5-2

A = [0 for i in range(10)]

for i in range(10):

 A[i] = int(input("Please input the value: "))

for i in range(10):

 A[i] += i

 print("A[",i,"] = ",A[i])

**Result:**

Please input the value: 5

Please input the value: 6

Please input the value: 7

Please input the value: 8

Please input the value: 9

Please input the value: 10

Please input the value: 11

Please input the value: 12

Please input the value: 13

Please input the value: 14

A[ 0 ] = 5

A[ 1 ] = 7

A[ 2 ] = 9

A[ 3 ] = 11

A[ 4 ] = 13

A[ 5 ] = 15

A[ 6 ] = 17

A[ 7 ] = 19

A[ 8 ] = 21

A[ 9 ] = 23

5-3

A = [0 for i in range(10)]

B = [0 for i in range(10)]

for i in range(10):

 A[i] = int(input("Please input the value: "))

for i in range(10):

 if A[i] >= 0:

 B[i] = 1

 else:

 B[i] = 0

 print("B[",i,"] = ",B[i])

**Result:**

Please input the value: 1

Please input the value: 2

Please input the value: -1

Please input the value: -3

Please input the value: -5

Please input the value: -7

Please input the value: 3

Please input the value: 4

Please input the value: 5

Please input the value: -11

B[ 0 ] = 1

B[ 1 ] = 1

B[ 2 ] = 0

B[ 3 ] = 0

B[ 4 ] = 0

B[ 5 ] = 0

B[ 6 ] = 1

B[ 7 ] = 1

B[ 8 ] = 1

B[ 9 ] = 0

5-4

A = [[0 for j in range(6)] for i in range(4)]

#請求輸入

for i in range(3):

 for j in range(5):

 print("Please input A[",i,"][",j,"]: ",end=" ")

 A[i][j] = int(input())

#計算列，將列的和存入每列最後一個元素

for i in range(3):

 for j in range(5):

 A[i][5] += A[i][j]

#計算行，將行的和存入每行最後一個元素

for j in range(6):

 for i in range(3):

 A[3][j] += A[i][j]

#印出矩陣和結果

for i in range(4):

 for j in range(6):

 print(A[i][j],"\t",end="")

 print()

**Result:**

Please input A[ 0 ][ 0 ]: 1

Please input A[ 0 ][ 1 ]: 2

Please input A[ 0 ][ 2 ]: 3

Please input A[ 0 ][ 3 ]: 4

Please input A[ 0 ][ 4 ]: 5

Please input A[ 1 ][ 0 ]: 6

Please input A[ 1 ][ 1 ]: 7

Please input A[ 1 ][ 2 ]: 8

Please input A[ 1 ][ 3 ]: 9

Please input A[ 1 ][ 4 ]: 10

Please input A[ 2 ][ 0 ]: 11

Please input A[ 2 ][ 1 ]: 12

Please input A[ 2 ][ 2 ]: 13

Please input A[ 2 ][ 3 ]: 14

Please input A[ 2 ][ 4 ]: 15

1 2 3 4 5 15

6 7 8 9 10 40

11 12 13 14 15 65

18 21 24 27 30 120

5-5

A = [[0 for j in range(6)] for i in range(4)]

#請求輸入

for i in range(3):

 for j in range(5):

 print("Please input A[",i,"][",j,"]: ",end=" ")

 A[i][j] = int(input())

#尋找列，將列的最小值存入每列最後一個元素

for i in range(3):

 min = A[i][0]

 for j in range(1,5):

 if A[i][j] < min:

 min = A[i][j]

 A[i][5] = min

#尋找行，將行的最小值存入每行最後一個元素

for j in range(6):

 min = A[0][j]

 for i in range(1,3):

 if A[i][j] < min:

 min = A[i][j]

 A[3][j] = min

#印出矩陣和結果

for i in range(4):

 for j in range(6):

 print(A[i][j],"\t",end="")

 print()

**Result:**

Please input A[ 0 ][ 0 ]: 13

Please input A[ 0 ][ 1 ]: 4

Please input A[ 0 ][ 2 ]: 21

Please input A[ 0 ][ 3 ]: 25

Please input A[ 0 ][ 4 ]: 2

Please input A[ 1 ][ 0 ]: 22

Please input A[ 1 ][ 1 ]: 19

Please input A[ 1 ][ 2 ]: 5

Please input A[ 1 ][ 3 ]: 9

Please input A[ 1 ][ 4 ]: 28

Please input A[ 2 ][ 0 ]: 11

Please input A[ 2 ][ 1 ]: 18

Please input A[ 2 ][ 2 ]: 3

Please input A[ 2 ][ 3 ]: 7

Please input A[ 2 ][ 4 ]: 23

13 4 21 25 2 2

22 19 5 9 28 5

11 18 3 7 23 3

11 4 3 7 2 2

5-6

a = [0 for i in range(6)]

b = [0 for i in range(6)]

#輸入a陣列

for i in range(1,6):

 a[i] = int(input("Please input a["+str(i)+"]: "))

#輸入b陣列

for i in range(1,6):

 b[i] = int(input("Please input b["+str(i)+"]: "))

#計算a[i]+b[i]

for i in range(1,6):

 x = a[i] + b[i]

 print("a["+str(i)+"] + b["+str(i)+"] =",x)

**Result:**

Please input a[1]: 1

Please input a[2]: 3

Please input a[3]: 5

Please input a[4]: 7

Please input a[5]: 9

Please input b[1]: 10

Please input b[2]: 11

Please input b[3]: 12

Please input b[4]: 13

Please input b[5]: 14

a[1] + b[1] = 11

a[2] + b[2] = 14

a[3] + b[3] = 17

a[4] + b[4] = 20

a[5] + b[5] = 23

5-7

a = [0 for i in range(5)]

b = [0 for i in range(5)]

max\_a = 0

index\_a = 0

for i in range(5): #輸入a陣列並記錄最大值

 a[i] = int(input("Please input a["+str(i)+"]: "))

 if a[i] > max\_a:

 max\_a = a[i]

 index\_a = i

max\_b = 0

index\_b = 0

for i in range(5): #輸入b陣列並記錄最大值

 b[i] = int(input("Please input b["+str(i)+"]: "))

 if b[i] > max\_b:

 max\_b = b[i]

 index\_b = i

if max\_a < max\_b: #顯示較小者

 print("a[",index\_a,"] =",max\_a)

else:

 print("b[",index\_b,"] =",max\_b)

**Result:**

Please input a[0]: 5

Please input a[1]: 3

Please input a[2]: 7

Please input a[3]: 2

Please input a[4]: 4

Please input b[0]: 1

Please input b[1]: 6

Please input b[2]: 9

Please input b[3]: 8

Please input b[4]: 0

a[ 2 ] = 7