

# 练习答案

---

## 赋值

```
1 | int a=1;
```

```
1 | a = 1
```

## 数组和指针

```
1 | char* s[10];
```

```
1 | s = [''] * 10
```

## 循环

```
1 | int main()
2 | {
3 |     int i, a[10];
4 |     for(i = 0; i < 10; ++i)
5 |         a[i] = i * i;
6 |     return 0;
7 | }
```

```
1 | def main():
2 |     a = [0] * 10
3 |     for i in range(10):
4 |         a[i] = i * i
5 |
6 | if __name__ == "__main__": main()
7 |
8 | #####OR#####
9 | def main(): a = [i ** 2 for i in range(10)]
10 | if __name__ == "__main__": main()
```

## 格式化输出

```

1 #include <stdio.h>
2 int main()
3 {
4     int x = 0, y = 2;
5     printf("%d, %d\n", x, y);
6     return 0;
7 }

```

```

1 def main():
2     x = 0; y = 2
3     print("%d, %d"%(x, y))
4
5 if __name__ == "__main__": main()
6
7 #####OR#####
8 def main(): print("{x}, {y}".format(x=0, y=2))
9 if __name__ == "__main__": main()

```

## 输入和判断

```

1 #include <stdio.h>
2 int main()
3 {
4     int a;
5     scanf("%d", &a);
6     if(a > 10)
7         printf("too big");
8     else if(a < 0)
9         printf("too small");
10    else
11        printf("fine");
12    return 0;
13 }

```

```

1 def main():
2     a = int(input())
3     if a > 10:
4         print("too big", end='')
5     elif a < 0:
6         print("too small", end='')
7     else:
8         print("fine", end='')
9
10 if __name__ == "__main__": main()

```

## 选择

```

1 #include <stdio.h>
2 int main()
3 {
4     int a;
5     scanf("%d", &a);
6     switch(a)
7     {
8         case 1:
9             printf("hi\n");
10            break;
11           case 2:
12               printf("bye\n");
13               break;
14           default:
15               printf("go\n");
16       }
17       return 0;
18 }

```

```

1 def main():
2     a = int(input())
3     if a == 1:
4         print("hi")
5     elif a == 2:
6         print("bye")
7     else:
8         print("go")
9
10 if __name__ == "__main__": main()
11
12 #####OR#####
13 def main():
14     a = int(input())
15     switch = {
16         1: "hi",
17         2: "bye"
18     }
19     print(switch.get(a, "go"))
20
21 if __name__ == "__main__": main()

```

## 库和数字格式

```

1 | #include <math.h>
2 | #include <stdio.h>
3 | double mcos(double x) {return cos(x);}
4 | int main()
5 | {
6 |     int a;
7 |     scanf("%d", &a);
8 |     printf("%08.21f\n", mcos((double)a));
9 |     return 0;
10 | }

```

```

1 | from math import *
2 | def mcos(x): return cos(x)
3 | def main():
4 |     a = int(input())
5 |     print("%08.2f"%mcos(a))
6 | if __name__ == "__main__": main()

```

## 简单函数

```

1 | int max(int a, int b)
2 |     return a < b ? b : a;

```

```

1 | def maximum(a, b): return b if a < b else a
2 |
3 | #####OR#####
4 | maximum = lambda a, b: b if a < b else a

```

## 判断复合和移位

```

1 | if(a > b && (10 > 1 << i)) {a += 1;}

```

```

1 | if a > b and (10 > 1 << i): a += 1
2 |
3 | #####OR#####
4 | if a > b and (10 > 2 ** i): a += 1

```

## 多元素输入

```

1 | print("Input a, b:")
2 | scanf("%d, %d", &a, &b)

```

```

1 a, b = eval(input("Input a, b:"))
2
3 #####OR#####
4 a, b = tuple(int(x) for x in input("Input a, b:").split(','))

```

## 数字与字符串转换（字符处理）

```

1 #include <stdio.h>
2 #include <string.h>
3
4 int main()
5 {
6     int i, k, l;
7     int num = 0;
8     char str[20], tmp;
9     printf("Please input a number:");
10    scanf("%s", str);
11    for(i = 0; i < strlen(str); ++i)
12    {
13        num *= 10;
14        num += str[i] - '0';
15    }
16    printf("%d\n", num);
17    k = 0;
18    while(num > 0)
19    {
20        str[k] = num % 10 + '0';
21        k++;
22        num /= 10;
23    }
24    str[k] = 0;
25    l = strlen(str);
26    for(i = 0; i < l / 2; ++i)
27    {
28        tmp = str[i];
29        str[i] = str[l-i-1];
30        str[l-i-1] = tmp;
31    }
32    printf("%s\n", str);
33    return 0;
34 }

```

```

1 def main():
2     string = input("Please input a number:")
3     print(int(string))
4     print(str(int(string)))
5 if __name__ == "__main__": main()

```

Retranslate back from C to python line by line

```
1 def main():
2     string = input("Please input a number:")
3     num = 0
4     for i in range(len(string)):
5         num *= 10
6         num += ord(string[i]) - ord('0')
7     print(num)
8     string = ''
9     while num > 0:
10        string += chr(ord('0') + num % 10)
11        num //= 10
12    print(string[::-1]) # <- see below
13
14 if __name__ == "__main__": main()
15
16 #####REVERSE#####
17 chrList = list(string)
18 for i in range(len(string) // 2):
19     tmp = chrList[i]; chrList[i] = chrList[-i-1]; chrList[-i-1] = tmp;
20 string = ''.join(chrList)
```

## 凯撒密码

```
1 for(i = 0; i < strlen(string); ++i)
2 {
3     cap = 0;
4     if(string[i] <= 'z' && string[i] >= 'A')
5     {
6         cap = 1;
7         string[i] += 'a' - 'A';
8     }
9     string[i] += k;
10    if(string[i] > 'z')
11        string[i] -= 26;
12    if(cap == 1)
13        string[i] -= 'a' - 'A';
14 }
```

```
1 from string import ascii_lowercase as lc, ascii_uppercase as uc
2 shift = dict(list(zip(lc, lc[k:] + lc[:k])) + list(zip(uc, uc[k:] +
3   uc[:k])))
str_ = ''.join([shift[c] for c in str_])
```

Retranslate back from C to python line by line

```
1 out = ''
2 filter = [c.islower() for c in str_]
3 str_ = str_.lower()
4 for i in range(len(str_)):
5     od = ord(str_[i]) + k
6     if od > ord('z'): od -= 26
7     out += chr(od) if filter[i] else chr(od).upper()
8 str_=out
```

## 截断/切片

```
1 void copy(char a[], char b[])
2 {
3     int i;
4     for(i = 0; i <= strlen(a); ++i)
5         b[i] = a[i];
6 }
7 copy(str1, str2);
8 str2[end] = 0;
9 printf("%s\n", str2 + start);
```

```
1 str2 = str1
2 print(str2[start:end])
```