Control Flow- Loop

- **Python has two primitive loop commands**
  - ➢ **while** loops :

    we can execute a set of statements as long as a condition is true

  - ➢ **for** loops :

    used for iterating over a set of statements with a fixed number of times

单选题 1分

设置

What will be the output of the following Python code?

```
x = 'abcd'
for i in x:
        print(i)
```

A a B C D

[✓ B a b c d]

C A B C D

D error

提交

Control Flow- Loop

- **While** loops (repeat implementing) have the following general structure.

```
while condition:
     statements
```

- Here, *statements* refers to one or more lines of Python code, and considered as a block of code
- The *condition* may be any expression, where **any non-zero value is true**. The loop iterates while the expression is true.

```
count = 0
while (count < 3):
    count = count + 1
    print("Hello Python")
```

What is the output?

```
Hello Python
Hello Python
Hello Python
```

Control Flow- Loop

```
i = 1
while i < 4:
    print(i)
    i = i + 1
flag = True
while flag and i < 8:
    print(flag, i)
    i = i + 1
```

What is the output?

```
1
2
3
True 4
True 5
True 6
True 7
```

Control Flow- Loop

```
i = 0
result = 0
while i<= 10:
    result += i
    i += 1
print(result)
```

What is the output?

55

Control Flow- Loop

- **For** loop has the following general form.

```
for var in sequence:
    statements
```

- Sequence is a collection of sequence objects like list, tuple
- Each item in the sequence is assigned to *var*, and the statements are executed until the entire sequence is exhausted.

```
for letter in "aeiou":
    print("letter: ", letter)

for i in [1,2,3]:
    print(i)
```

What is the output?

```
letter: a
letter : e
letter : i
letter: o
letter : u
1
2
3
```

Control Flow- Loop

- **For** loop has the following general form.

```
for var in sequence:
    statements
```

- Sequence is a collection of sequence objects like list, tuple
- Each item in the sequence is assigned to *var*, and the statements are executed until the entire sequence is exhausted.

```
# Iterating over a list
l = ["I", "love", "python"]
for i in l:
    print(i)
```

What is the output?

```
I
love
python
```

```
# Iterating over a tuple
t = ("It", "is", "fine")
for i in t:
    print(i)
```

What is the output?

```
It
is
fine
```

Control Flow- Loop

- For loops may **be nested** with other control flow tools such as while loops and if

```
for letter in "aeiou":
    if letter!='e':
        print("letter: ", letter)
```

What is the output?

```
letter:  a
letter:  i
letter:  o
letter:  u
```

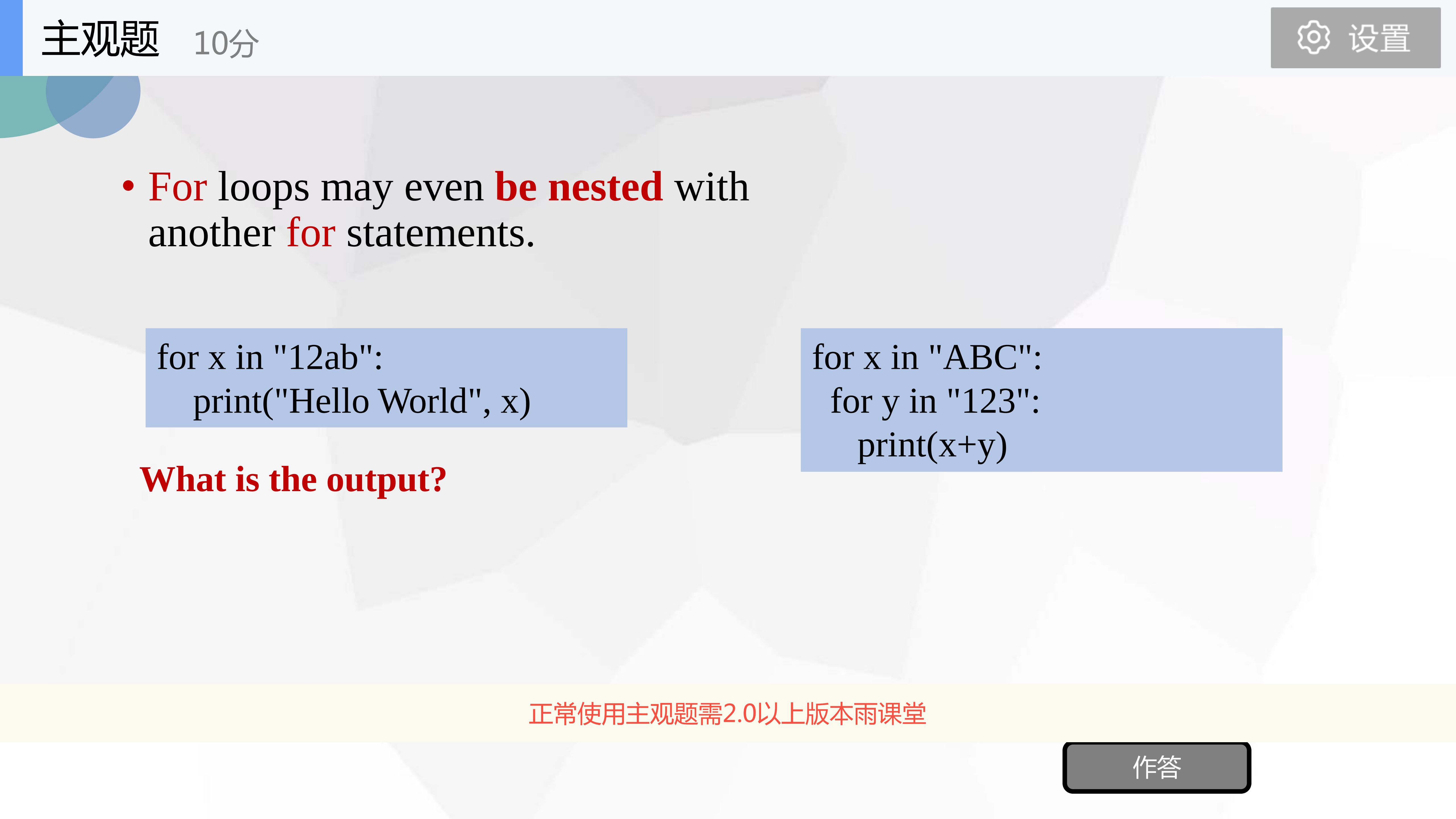
Control Flow- Loop

- For loops may even **be nested** with another for statements.

```
for letter in "aeiou":
    for i in (0,1):
        print("letter: ", letter,i)
```

What is the output?

```
letter:  a 0
letter:  a 1
letter:  e 0
letter:  e 1
letter:  i 0
letter:  i 1
letter:  o 0
letter:  o 1
letter:  u 0
letter:  u 1
```



主观题 10分

- For loops may even **be nested** with another for statements.

```
for x in "12ab":
    print("Hello World", x)
```

```
for x in "ABC":
  for y in "123":
     print(x+y)
```

What is the output?

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