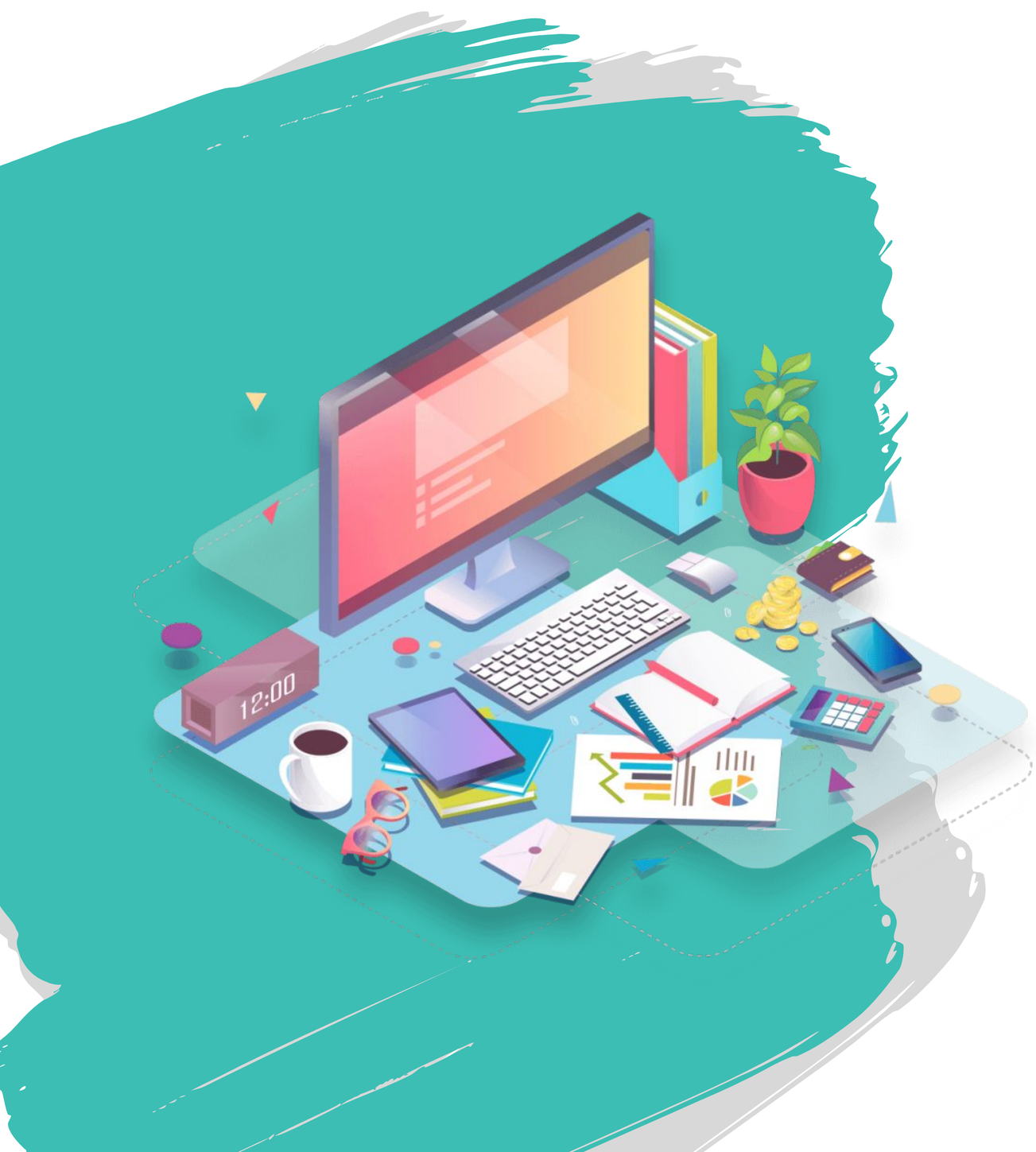

Collection-Based Looping

Collection-based looping

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

M
E
C
C
P

EXPLANATION

Hopefully this perspective provides more clarity!

Collection-based looping (Iter #1)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

EXPLANATION

In the first iteration, the 1st element in *subject_list* is stored as the variable *subject*

Collection-based looping (Iter #1)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

EXPLANATION

The variable *subject* is used in the following line (the indentation shows that the following line is under the for loop)

Collection-based looping (Iter #1)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

EXPLANATION

To understand what *[0]* does to the variable *subject*, let's replace the variable *subject* with the first element in the list

Collection-based looping (Iter #1)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print('Math'[0])
```

OUTPUT

EXPLANATION

Now that we have replaced *subject* with `'Math'`. We know from the concept of *string slicing/inexing* that the first character in the string will be printed

Collection-based looping (Iter #1)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print('Math'[0])
```

OUTPUT

M

EXPLANATION

Therefore, the first letter of `'Math'` is printed.

Let's now move to the 2nd iteration.

Collection-based looping (Iter #2)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

M

EXPLANATION

In the second iteration, the 2nd element in *subject_list* is stored as the variable *subject*

Collection-based looping (Iter #2)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print('English'[0])
```

OUTPUT

M

EXPLANATION

Let's now replace the variable *subject* with the second element in the list.

Collection-based looping (Iter #2)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print('English'[0])
```

OUTPUT

M
E

EXPLANATION

This time, the first letter of `'English'` is printed

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Collection-based looping (Iter #3)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

M
E

EXPLANATION

In the third iteration, the 3rd element in *subject_list* is stored as the variable *subject*

Collection-based looping (Iter #3)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

M
E
C

EXPLANATION

This time, the first letter of `'Chinese'` is printed

Collection-based looping (Iter #4)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

M
E
C

EXPLANATION

In the third iteration, the 4th element in *subject_list* is stored as the variable *subject*

Collection-based looping (Iter #4)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

```
M
E
C
C
```

EXPLANATION

This time, the first letter of `'Chemistry'` is printed

Collection-based looping (Iter #5)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

```
M
E
C
C
```

EXPLANATION

In the third iteration, the 5th element in *subject_list* is stored as the variable *subject*

Collection-based looping (Iter #5)

```
subject_list = ['Math', 'English', 'Chinese', 'Chemistry', 'Physics']

for subject in subject_list:
    print(subject[0])
```

OUTPUT

```
M
E
C
C
P
```

EXPLANATION

This time, the first letter of `'Physics'` is printed