

EQUIVALENT

1. **Initialization:** Identify the initialization statement in the for loop. This statement initializes the loop control variable.
2. **Condition Expression:** Determine the condition expression in the for loop. This expression decides whether the loop should continue iterating.
3. **Body:** Copy the statements inside the body of the for loop. These statements are executed each iteration of the loop.
4. **Update Expression:** Locate the update expression in the for loop. This expression typically increments or decrements the loop control variable.
5. **Initialize Loop Control Variable:** Place the initialization statement before the while loop to initialize the loop control variable.
6. **Create While Loop:** Create a while loop with the condition expression from the for loop. This condition determines whether the loop should execute.
7. **Move Body:** Paste the copied statements from the for loop's body into the body of the while loop.
8. **Update Loop Control Variable:** Insert the update expression inside the while loop's body to modify the loop control variable.
9. **Test:** Verify that the while loop produces the same behavior as the original for loop.

EXAMPLE:

```
// For loop
```

```
for (int i = 0; i < 5; i++) {  
    cout << i << endl;  
}
```

```
// While loop equivalent
```

```
int i = 0; // Initialization  
while (i < 5) { // Condition expression  
    cout << i << endl; // Body  
    i++; // Update expression  
}
```