

Our First WHILE Statement

The WHILE Statement

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```
while (condition) :
    do some stuff
```

The “condition” in a WHILE statement is exactly the same as the one in an IF statement, it has to be something that is either “True” or “False” (a Boolean), so for example, is today Monday will either be true or false. If the condition evaluates to “True” then the instructions in the WHILE block are run, if it evaluates to “False” then the loop exits, and the commands following the WHILE block are executed. Statements under the WHILE that are indented are part of the loop, and will be executed as long as the condition evaluates to True, but as soon as the condition is False, the next instruction that isn’t indented will be run.

Our First WHILE Program

Below is our first program with a WHILE Statement. It works as follows, we create a variable called X, and set it to be the number 1, then we check if X is less than 6, and as long as it is, we will keep executing the loop.

Sample WHILE Statement

```
# PROGRAM Print1To5
X = 1
while (X < 6):
    print(X)
    X = X + 1
# EndWhile;
# END.
```

So in more detail, X is set to the number 1, then we check if X is less than 6, and it is, so we print out X (1), and then we add one onto X (making it 2). Then we return to the condition, check if it is still true (2 < 6), and it is, so we print out X (2), and then we add one onto X (making it 3). Then we return to the condition, check if it is still true (3 < 6), and it is, so we print out X (3), and then we add one onto X (making it 4). Then we return to the condition, check if it is still true (4 < 6), and it is, so we print out X (4), and then we add one onto X (making it 5). Then we return to the condition, check if it is still true (5 < 6), and it is, so we print out X (5), and then we add one onto X (making it 6). Then we return to the condition, check if it is still true (6 < 6), and it is not, so we stop the loop.

```
1
2
3
4
5
```

The condition is “less than 6”, so when it gets to 6 the loop exits. Try this code, and then change the number to different values, try 11, 101, and 1001 to check this all makes sense.

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