



Learning Exercise: Basic While

1. What is output by the following programs?

a.

```
j = 4
while j > -4:
    print(j)
    j -= 1
```

b.

```
string = "Hello"
builder = ""
i = 0
while i < len(string):
    builder += string[i].swapcase()
    print(i, builder)
    i += 1
print(string, "->", builder)
```

c.

```
x = 0
i = 1
while x < 20:
    if x > 5:
        x += 15
    else:
        x += 1
    print(i, x)
    i += 1
```

Learning Exercise: Combining While

2. What is output by the following programs?

a.

```
string = "HELLO"
x = 0
while string[x] != 'L':
    print(string[x], end="... ")
    x += 1
print("\n", string, "first L is at", x)
```

b.

```
# Assume the user enters the following:
# hello goodbye cat dog DONE done
list = []
prompt = "Please enter word, 'done' to finish "
response = input(prompt)
while response != "done":
    list.append(response)
    response = input(prompt)
print(sorted(list))
```

c.

```
x = 0
while x < 20:
    if x > 5:
        if x % 2 == 0:
            x *= 2
        else:
            x *= -1
    else:
        x += 10
    x += 1
print(x)
```