

Lab 4 Code Gen

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1 Test Cases

These are all made to test the limits of code gen. This file will only have the code generation for the programs.

1.1 Test Case 1

```
1 {
2     int a
3     a = 1
4     {
5         int a
6         a = 2
7         {
8             int a
9             a = 3
10            print(a)
11        }
12        print(a)
13    }
14    print(a)
15 }$
16
17 A9 00 A9 00 8D 33 00 A9
18 01 8D 33 00 A9 00 8D 35
19 00 A9 02 8D 35 00 A9 00
20 8D 34 00 A9 03 8D 34 00
21 AC 34 00 A2 01 FF AC 35
22 00 A2 01 FF AC 33 00 A2
23 01 FF 00 00 00 00 00 00
24 00 00 00 00 00 00 00 00
25 00 00 00 00 00 00 00 00
26 00 00 00 00 00 00 00 00
27 00 00 00 00 00 00 00 00
28 00 00 00 00 00 00 00 00
29 00 00 00 00 00 00 00 00
30 00 00 00 00 00 00 00 00
31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 00 00 00
```

```

36 00 00 00 00 00 00 00 00
37 00 00 00 00 00 00 00 00
38 00 00 00 00 00 00 00 00
39 00 00 00 00 00 00 00 00
40 00 00 00 00 00 00 00 00
41 00 00 00 00 00 00 00 00
42 00 00 00 00 00 00 00 00
43 00 00 00 00 00 00 00 00
44 00 00 00 00 00 00 00 00
45 00 00 00 00 00 00 00 00
46 00 00 00 00 00 00 00 00
47 00 00 00 00 00 74 72 75
48 65 00 66 61 6C 73 65 00

```

1.2 Test Case 2

```

1 {
2     int a
3     a = 1
4     int b
5     b = 0
6
7     while(a == 1){
8
9         b = 1+b
10        print(b)
11
12        if(b == 3){
13            a = 2
14        }
15    }
16
17    print("done")
18 }$
19
20 A9 00 A9 00 8D 68 00 A9
21 01 8D 68 00 A9 00 8D 69
22 00 A9 00 8D 69 00 AE 68
23 00 A9 01 8D 00 00 EC 00
24 00 A9 01 D0 02 A9 00 A2
25 00 8D 00 00 EC 00 00 D0
26 11 A9 01 8D 00 00 6D 69
27 00 8D 69 00 AC 69 00 A2
28 01 FF AE 69 00 A9 03 8D
29 00 00 EC 00 00 D0 05 A9
30 02 8D 68 00 D0 c0 D0 0C
31 A9 00 8D 00 00 A2 01 EC
32 00 00 A0 f0 A2 02 FF 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 00 00 00
36 00 00 00 00 00 00 00 00
37 00 00 00 00 00 00 00 00

```

```
38 00 00 00 00 00 00 00 00
39 00 00 00 00 00 00 00 00
40 00 00 00 00 00 00 00 00
41 00 00 00 00 00 00 00 00
42 00 00 00 00 00 00 00 00
43 00 00 00 00 00 00 00 00
44 00 00 00 00 00 00 00 00
45 00 00 00 00 00 00 00 00
46 00 00 00 00 00 00 00 00
47 00 00 00 00 00 00 00 00
48 00 00 00 00 00 00 00 00
49 00 00 00 00 00 00 00 00
50 64 6f 6e 65 00 74 72 75
51 65 00 66 61 6C 73 65 00
```

1.3 Test Case 3

```
1 {
2     if(1 == 1){
3         print("compared")
4     }
5 }$
6
7 A9 00 A2 01 A9 01 8D 00
8 00 EC 00 00 D0 05 A0 ec
9 A2 02 FF 00 00 00 00 00
10 00 00 00 00 00 00 00 00
11 00 00 00 00 00 00 00 00
12 00 00 00 00 00 00 00 00
13 00 00 00 00 00 00 00 00
14 00 00 00 00 00 00 00 00
15 00 00 00 00 00 00 00 00
16 00 00 00 00 00 00 00 00
17 00 00 00 00 00 00 00 00
18 00 00 00 00 00 00 00 00
19 00 00 00 00 00 00 00 00
20 00 00 00 00 00 00 00 00
21 00 00 00 00 00 00 00 00
22 00 00 00 00 00 00 00 00
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27 00 00 00 00 00 00 00 00
28 00 00 00 00 00 00 00 00
29 00 00 00 00 00 00 00 00
30 00 00 00 00 00 00 00 00
31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 00 00 00
36 00 00 00 00 63 6f 6d 70
```

```
37 61 72 65 64 00 74 72 75
38 65 00 66 61 6C 73 65 00
```

1.4 Test Case 4

```
1 {
2     if true{
3         print("base case")
4     }
5 }$
6
7 A9 00 A2 f5 A9 f5 8D 00
8 00 EC 00 00 D0 05 A0 eb
9 A2 02 FF 00 00 00 00 00
10 00 00 00 00 00 00 00 00
11 00 00 00 00 00 00 00 00
12 00 00 00 00 00 00 00 00
13 00 00 00 00 00 00 00 00
14 00 00 00 00 00 00 00 00
15 00 00 00 00 00 00 00 00
16 00 00 00 00 00 00 00 00
17 00 00 00 00 00 00 00 00
18 00 00 00 00 00 00 00 00
19 00 00 00 00 00 00 00 00
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22 00 00 00 00 00 00 00 00
23 00 00 00 00 00 00 00 00
24 00 00 00 00 00 00 00 00
25 00 00 00 00 00 00 00 00
26 00 00 00 00 00 00 00 00
27 00 00 00 00 00 00 00 00
28 00 00 00 00 00 00 00 00
29 00 00 00 00 00 00 00 00
30 00 00 00 00 00 00 00 00
31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 00 00 00
36 00 00 00 62 61 73 65 20
37 63 61 73 65 00 74 72 75
38 65 00 66 61 6C 73 65 00
```

1.5 Test Case 5

```
1 {
2     while true{
3         print("base case")
4     }
5 }$
6
```

```

7  A9 00 A2 f5 A9 f5 8D 00
8  00 EC 00 00 A9 01 D0 02
9  A9 00 A2 00 8D 00 00 EC
10 00 00 D0 05 A0 eb A2 02
11 FF D0 0C A9 00 8D 00 00
12 A2 01 EC 00 00 D0 d3 00
13 00 00 00 00 00 00 00 00
14 00 00 00 00 00 00 00 00
15 00 00 00 00 00 00 00 00
16 00 00 00 00 00 00 00 00
17 00 00 00 00 00 00 00 00
18 00 00 00 00 00 00 00 00
19 00 00 00 00 00 00 00 00
20 00 00 00 00 00 00 00 00
21 00 00 00 00 00 00 00 00
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27 00 00 00 00 00 00 00 00
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31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 00 00 00
36 00 00 00 62 61 73 65 20
37 63 61 73 65 00 74 72 75
38 65 00 66 61 6C 73 65 00

```

1.6 Test Case 6

```

1  {
2      print(1+2+3)
3  }$
4
5  A9 00 A9 01 8D 00 00 A9
6  02 6D 00 00 8D 00 00 A9
7  03 6D 00 00 8D 00 00 8D
8  00 00 AC 00 00 A2 01 FF
9  00 00 00 00 00 00 00 00
10 00 00 00 00 00 00 00 00
11 00 00 00 00 00 00 00 00
12 00 00 00 00 00 00 00 00
13 00 00 00 00 00 00 00 00
14 00 00 00 00 00 00 00 00
15 00 00 00 00 00 00 00 00
16 00 00 00 00 00 00 00 00
17 00 00 00 00 00 00 00 00
18 00 00 00 00 00 00 00 00

```

```
19 00 00 00 00 00 00 00 00
20 00 00 00 00 00 00 00 00
21 00 00 00 00 00 00 00 00
22 00 00 00 00 00 00 00 00
23 00 00 00 00 00 00 00 00
24 00 00 00 00 00 00 00 00
25 00 00 00 00 00 00 00 00
26 00 00 00 00 00 00 00 00
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28 00 00 00 00 00 00 00 00
29 00 00 00 00 00 00 00 00
30 00 00 00 00 00 00 00 00
31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 74 72 75
36 65 00 66 61 6C 73 65 00
```

1.7 Test Case 7

```
1 {
2   print((true == false))
3 }$
4
5 A9 00 A2 f5 A9 fa 8D 00
6 00 EC 00 00 A9 fa D0 02
7 A9 f5 8D 1c 00 AC 1c 00
8 A2 02 FF 00 00 00 00 00
9 00 00 00 00 00 00 00 00
10 00 00 00 00 00 00 00 00
11 00 00 00 00 00 00 00 00
12 00 00 00 00 00 00 00 00
13 00 00 00 00 00 00 00 00
14 00 00 00 00 00 00 00 00
15 00 00 00 00 00 00 00 00
16 00 00 00 00 00 00 00 00
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24 00 00 00 00 00 00 00 00
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26 00 00 00 00 00 00 00 00
27 00 00 00 00 00 00 00 00
28 00 00 00 00 00 00 00 00
29 00 00 00 00 00 00 00 00
30 00 00 00 00 00 00 00 00
31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
```

```
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 00
35 00 00 00 00 00 74 72 75
36 65 00 66 61 6C 73 65 00
```

1.8 Test Case 8

```
1 {
2   print("hello")
3 }$
4
5 A9 00 A0 ef A2 02 FF 00
6 00 00 00 00 00 00 00 00
7 00 00 00 00 00 00 00 00
8 00 00 00 00 00 00 00 00
9 00 00 00 00 00 00 00 00
10 00 00 00 00 00 00 00 00
11 00 00 00 00 00 00 00 00
12 00 00 00 00 00 00 00 00
13 00 00 00 00 00 00 00 00
14 00 00 00 00 00 00 00 00
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27 00 00 00 00 00 00 00 00
28 00 00 00 00 00 00 00 00
29 00 00 00 00 00 00 00 00
30 00 00 00 00 00 00 00 00
31 00 00 00 00 00 00 00 00
32 00 00 00 00 00 00 00 00
33 00 00 00 00 00 00 00 00
34 00 00 00 00 00 00 00 68
35 65 6c 6c 6f 00 74 72 75
36 65 00 66 61 6C 73 65 00
```

2 References

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