

Compilers

CMPT 432

– Lab 8

Goals	Generating Code
Notes	It all comes down to this. You have an AST that's been checked from the moons of Nibia and round the Antares maelstrom, so it's time to create the executable code. Make it so!
Resources	<p><i>Crafting a Compiler</i></p> <ul style="list-style-type: none"> • Read chapters 12.1, 13.1, and 13.2. (Chapters 12.2 and 12.4 are really interesting as well. I suggest you read those too, though we do not need them for the project.) • Do no exercises. You have enough work to do implementing code generation, so get on that. <p><i>Dragon</i></p> <ul style="list-style-type: none"> • Read chapters 6.6-7, 7.1, 7.4, 8.1, and 8.3.1 • Seriously, work on your code generator.
Submitting	There's really nothing to commit here. But if you want, write a critique of why Daniel Craig is a terrible James Bond and commit it as a PDF in your GitHub repository and I'll take a look at it.

Source Code

```
int a
a = 3
int b
b = 4
a = b
print(a)
if (a == b) {
    print(a)
} (break)
```

Machine Code

Let's try the program:

```
A9 00 8D 2F 00 A9 03 8D
2F 00 A9 00 8D 30 00 A9
04 8D 30 00 AD 30 00 8D
2F 00 AC 2F 00 A2 01 FF
AE 2F 00 EC 30 00 D0 07
AC 2F 00 A2 01 FF 00 00
```

Execution Environment

0	A9	00	8D	2F	00	A9	03	8D
8	2F	00	A9	00	8D	30	00	A9
10	04	8D	30	00	AD	30	00	8D
18	2F	00	AC	2F	00	A2	01	FF
20	AE	2F	00	EC	30	00	D0	07
28	AC	2F	00	A2	01	FF	00	used a
30	used b							
38								
40								
48								
50								
58								

Temp	Var	Address
T0XX	a	2F 00
T1XX	b	30 00

Temp	Distance
J0	7