Project Four : Code Generation Output

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NOTE: This document excludes the lexer, parser, and semantic analyzer output for conciseness.

1 Test Case 1

1.1 Program

```
{
int a
a = 5
string b
b = "alan"
print(a)
print(b)
}$
```

1.2 output

```
A9 00 8D 16 00 A9 05 8D
16 00 AC 16 00 A2 01 FF
A0 fb A2 02 FF 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
```

```
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
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00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 61 6c 61 6e 00
```

1.3 COMMENTS

This is a test program that tests basic code generation for integers and strings in a single scope.

2 TEST CASE 2

2.1 PROGRAM

```
{
string b
b = "alan"
print(b)
boolean c
c = false
print(c)
}$
```

2.2 OUTPUT

```
A0 fb A2 02 FF A0 f5 A2
02 FF 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
```

```
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00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 66 61 6c
73 65 00 61 6c 61 6e 00
```

2.3 COMMENTS

This program tests that the heap storage is working properly, when there are multiple values that need to be stored there.

3 TEST CASE 3

3.1 PROGRAM

```
{
print(false)
}$
```

3.2 OUTPUT

```
A0 fa A2 02 FF 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
```

```
00 00 00 00 00 00 00 00
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00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 66 61 6c 73 65 00
```

3.3 COMMENTS

This program tests printing a value that is not stored in a variable.

4 TEST CASE 4

4.1 PROGRAM

```
{
int a
a = 5
{
string a
a = "alan"
print(a)
}
print(a)
}$
```

4.2 OUTPUT

```
A9 00 8D 16 00 A9 05 8D
16 00 A0 fb A2 02 FF AC
16 00 A2 01 FF 00 00 00
```

```
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
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00 00 00 00 00 00 00 00
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00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 61 6c 61 6e 00
```

4.3 COMMENTS

This program tests code generation on multiple scopes, and when a variable name is reused in different scopes.

5 TEST CASE 5

5.1 PROGRAM

```
{
int a
a = 5
int b
b = 3
a = b
print(a)
}$
```

5.2 OUTPUT

A9 00 8D 21 00 A9 05 8D
21 00 A9 00 8D 22 00 A9
03 8D 22 00 AD 22 00 8D
21 00 AC 21 00 A2 01 FF
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
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5.3 COMMENTS

This program tests code generation when an int variable assigns another int variable