COMP1036 Computer Fundamentals
Lab 4

Implement the following circuits:

1. HalfAdder

```
Half adder. Computes sum, the least significant bit of a + b,
and carry, the most significant bit of a + b.
```

2. FullAdder

```
Full adder. Computes sum, the least significant bit of
a + b + c, and carry, the most significant bit of a + b + c.
```

3. Add16

```
Adds two 16-bit values.
The most-significant carry bit is ignored.
```

4. Inc16

```
16-bit incrementer.  out = in + 1 (16-bit addition).
Ignore the overflow.
```

5. PC

```
A 16-bit counter with load and reset control bits.
if      (reset[t]==1) out[t+1] = 0
else if (load[t]==1)  out[t+1] = in[t]
else if (inc[t]==1)   out[t+1] = out[t] + 1  (integer addition)
else                  out[t+1] = out[t]
```