

PULSE

```
[0000]: NOP [0000] [0000]
[0001]: LDA [0001] [1110]
[0010]: LDA [0001] [1111]
[0011]: JMP [0110] [0001]
```

```
[1110]: xxxxxxxx
[1111]: yyyyyyyy
```

COUNT

```
[0000]: NOP [0000] [0000]
[0001]: LDI [0101] [xxxx]
[0010]: STA [0100] [1111]
[0011]: LDI [0101] [0000]
[0100]: ADD [0010] [1111]
[0101]: OUT [1110] [0000]
[0110]: JMP [0110] [0100]
```

OSCILLATOR

```
[0000]: NOP [0000] [0000]
[0001]: OUT [1110] [0000]
[0010]: ADD [0010] [1111]
[0011]: JC [0111] [0101]
[0100]: JMP [0110] [0001]
[0101]: SUB [0011] [1111]
[0110]: OUT [1110] [0000]
[0111]: JZ [1000] [0001]
[1000]: JMP [0110] [0101]
```

```
[1111]: xxxxxxxx
```

ADDITION (X+Y)

```
[0000]: NOP [0000] [0000]
[0001]: LDA [0001] [1110]
[0010]: ADD [0010] [1111]
[0011]: OUT [1110] [0000]
[0100]: HLT [1111] [0000]
```

```
[1110]: xxxxxxxx
[1111]: yyyyyyyy
```

SUBTRACTION (X-Y)

```
[0000]: NOP [0000] [0000]
[0001]: LDA [0001] [1110]
[0010]: SUB [0011] [1111]
[0011]: OUT [1110] [0000]
[0100]: HLT [1111] [0000]
```

```
[1110]: xxxxxxxx
[1111]: yyyyyyyy
```

MULTIPLICATION (X*Y)**DIVISION (X/Y)****MODULAR (X%Y)**