ICS Homework Week 3

September 24, 2019

1. Suppose that A and B have 2-byte values 0xF00D and 0xBEEF, respectively. Fill in the following table indicating the 2-byte values of the different C expressions:

Expression	Value	Expression	Value
$A\&B$	0xB00D	$A\|B$	0xFEEF
$A\&\&B$	0x0001	$A\|\|B$	0x0001
$\sim A\& \sim B$	0x0110	$!A\|\|!B$	0x0000
$A\&!B$	0x0000	$A\hat{}B << 3$	0x0775

2. Using only $\sim$ and |, write a C expression that is equivalent to A&B.

```
~(~A|~B)
```

3. Using only $\sim$ and &, write a C expression that is equivalent to A|B.

```
~(~A&~B)
```

4. Using |, & and $-$, write a C expression that is equivalent to A^B.

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(A|B)-(A&B)
```

5. Design a C expression, which generates a word (4-byte) consisting of the lower 24 bits of A and the remaining 8 bits of B.

   For example, A=0xABADBEEF and B=0xDECEA5ED, it will generate 0xDEADBEEF

```
(A&0x00FFFFFF)|(B&0xFF000000)
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