

Programming with C I

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Bitmasks



We often want to manipulate or isolate specific bits from a collection



A **bitmask** is a bit pattern that achieves this



We can use and/or to create bitmasks by bitwise operators

Example: CSCI courses



Array of ints vs. storing bits



Bitmasks

- Setting bits to 1 with |
- Setting bits to 0 with &
- “Masking off” unwanted bits



But how do we mask an arbitrary position?

<< and >>



<< k shifts x left by k

00110111 << 2 results in 11011100

01100011 << 4 results in 00110000

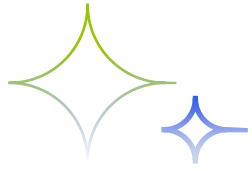
10010101 << 4 results in 01010000



x >> k shifts x right by k



Careful with unsigned ints for >>



THE END

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