- Review: Monday in class

- Tomorrow: Show up!

- Tuesday: Due: Monday

- Program: Due: Monday

Announcements

1/2/2009
Send string:

(see current problem)

Transmitting intermediate
- More common letters get shorter.
- Can figure out which characters we need.

How can we do better?

Standard ASCII → 8 bits per character

As few bits as possible.
We wish to transmit information using

These
Something missing... Spaces Period comma aposrophes... (l)
OK: Which one(s) can we use many bits for?

Which ones do we want to use few.
Characte...
In the end, this:

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 3 | 3 | 2 | 6 | 5 | 3 | 8 | 13 | 2 | 16 | 9 | 6 | 27 | 22 | 1 | 5 | 8 | 4 | 5 | 1 |

turns into a decoder tree (like in program)

to send an S, transmit 00

to send G: 110010
Original message:
Exercise: 0100111000010100001010001

Code for SANTA:
00110000
01110001
110000

Message? HELLO

How many bits? 26 bits

ASCII: 8*5 = 40
Why do all this again?

Using our tree:

64 a bits
4 a 6 bits
2 a 8 bits each 80 bits for tree

170 + 8 = 170 8-bit

How does ASCII do it?

170

\[
\frac{170}{8} = 21 \quad \text{bits}
\]

170 letters

This sentence contains three a's, three c's, two d's, twenty-six e's, five f's, three g's.