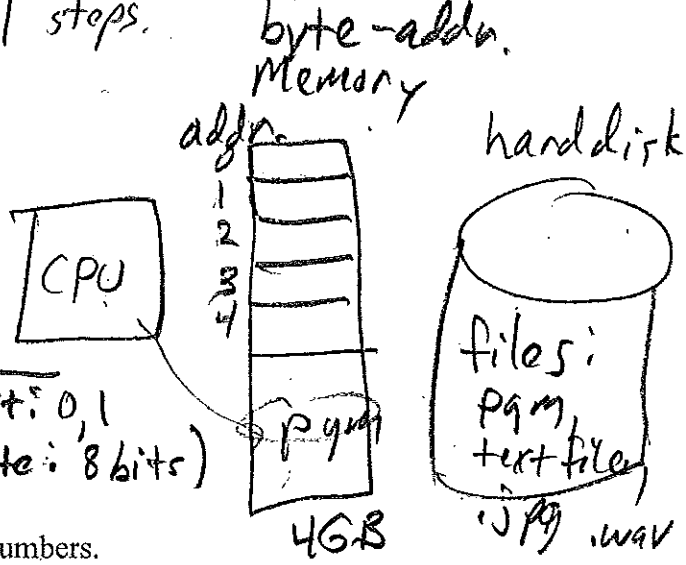
Media Computation Lecture 1 Name:_____

1. Write a detailed step-by-step process (i.e., an *algorithm*) to to exit the building if the fire alarm goes off.

- Don't Panic
- Stand up
- Push in chair
- Get in line
- Go down stairs
- exit building

high-level step - split into lower level steps.




2. What is the purpose of the following computer components?

- CPU/processor – "processing" - running pgm
- main memory/RAM – running pgms + data stored
- hard-disk – files

bit: 0, 1
byte: 8 bits)

3. Complete the following table about binary and hexadecimal numbers.

| | Decimal (Base 10) | Binary (Base 2) | Hexadecimal (Base 16) |
|---|---|---|---|
| **Number of digits:** | 10 | 2 | |
| **Digits:** | 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 | 0, 1 | |
| **Counting:** | 0 | 0 | |
| | 1 | 01 | |
| | 2 | 00010 | |
| | 3 | 00011 | |
| | 4 | 00100 | |
| | 5 | 00101 | |
| | 6 | 00110 | |
| | 7 | 00111 | |
| | 8 | 01000 | |
| | 9 | 01001 | |
| | 10 | 01010 | 16 8 4 2 1 |
| | 11 | 01011 | $2^4\ 2^3\ 2^2\ 2^1\ 2^0$ |
| | 12 | 01100 | 01101 |
| | 13 | 01101 | 8+4+1=13 |
| | 14 | 01110 | |
| | 15 | 01111 | |
| | 16 | 10000 | |
| | 17 | | |
| | 18 | | |
| | 19 | | |
| | 20 | | |
| | 21 | | |

$10^2$
$1\times100$
$7\times10^1$
$3\times10^0$

4. Convert $173_{10}$ to a binary (base 2) value and then hexadecimal.

512 256 128 64 32 16 8 4 2 1

0 1 1 0 1 0 1 1 1$_2$

$215_{10}$

$-128$

$87$

$-64$

$23$

$-16$

$7$