

Exam 3 Information

- The final exam for this course will be on Tuesday, 18 Dec 2007, from 2:00–3:50pm.
- The exam is cumulative, covering all major topics from the semester.
- This exam is closed book and no calculating devices of any type will be allowed. However the following aides are allowed:
 - Included with this packet is a copy of the relevant “help” files associated with the Super Simple CPU and the BBC and Movie databases. You will be allowed to bring these prepared notes into the exam with you.
 - In addition to the notes provided by us, you may add your own personal notes onto both the front and back of another sheet of paper, for use during the exam. When the exam is over, submit this sheet to the rest of your exam.

MORE ABOUT THE SUPER SIMPLE CPU INSTRUCTIONS

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1111 STP -- this stops the computer, no more fetch/decode/execute
cycles until you reset.
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0001 ADD -- fetch a number from memory and add it to the  
contents of the accumulator, replacing the value  
value in the accumulator.

E.g. 0001 000000001111 -- get the value at memory location 15  
and add that to accumulator.  
~~~~~

0010 SUB -- just like ADD, only subtract.
~~~~~

0011 LOD -- fetch a number from memory and store it into  
the accumulator, replacing its old value.

E.g. 0011 000000001111 -- get the value at memory location 15  
and store that value into the accumulator.  
~~~~~

0100 LDI -- load immediate; the value to be put into the
accumulator is the rightmost 12 bits of the
instruction; do not go to memory like LOD

E.g. 0100 000000001111 -- store the value 15 into the
accumulator.
~~~~~

0101 STO -- store the accumulator's value into memory at the  
indicated location.

E.g. 0101 000000001111 -- store the accumulator's value  
into memory location 15.  
~~~~~

0110 INP -- ask the user for one number and store that into
the accumulator.
~~~~~

0111 OUT -- copy the value in the accumulator to the output  
area.  
~~~~~

1000 JMP -- jump to the instruction at the indicated memory
address.

E.g. 1000 000000001111 -- put the value 15 into the PC
which will cause the next instruction to
be taken from location 15 of memory.
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1001 JNG -- jump to the instruction at the indicated memory  
location if the accumulator's value is negative;  
otherwise just add 1 to the PC.

E.g. 1001 000000001111 -- put the value 15 into the PC  
if accumulator < 0, otherwise go to the  
next instruction.  
~~~~~

1010 JZR -- jump to the instruction at the indicated memory
location if the accumulator's value is zero;
otherwise just add 1 to the PC.

E.g. 1010 000000001111 -- put the value 15 into the PC
if accumulator = 0, otherwise go to the
next instruction.
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## Basic Form of an SQL Query

SELECT (which columns)  
 FROM (which tables)  
 WHERE (condition for rows of interest)

## BBC Country Profiles

table 'bbc' (193 records)

| name        | region      | area (sq km) | population | gdp         |
|-------------|-------------|--------------|------------|-------------|
| Afghanistan | South Asia  | 652225       | 26000000   |             |
| Albania     | Europe      | 28728        | 3200000    | 6656000000  |
| Algeria     | Middle East | 2400000      | 329000000  | 75012000000 |
| ...         |             |              |            |             |
| Yemen       | Middle East | 536869       | 21500000   | 12255000000 |
| Zambia      | Africa      | 752614       | 11000000   | 4950000000  |
| Zimbabwe    | Africa      | 390759       | 12900000   | 6192000000  |

## Internet Movie Database (IMDB)

table 'movie' (1844 records)

| id   | title                     | yr   | score | votes | director |
|------|---------------------------|------|-------|-------|----------|
| 1    | Star Wars                 | 1977 | 8.8   | 53567 | 360      |
| 2    | Shawshank Redemption, The | 1994 | 9     | 44974 | 1040     |
| 3    | Pulp Fiction              | 1994 | 8.6   | 43993 | 444      |
| ...  |                           |      |       |       |          |
| 1844 | End of Violence, The      | 1997 | 5.6   | 724   | 269      |
| 1845 | Hollywood Knights, The    | 1980 | 5.5   | 721   | 2016     |

table 'actor' (5944 records)

| id   | name           |
|------|----------------|
| 1    | Woody Allen    |
| 2    | Clint Eastwood |
| ...  |                |
| 5944 | Ken Curtis (I) |
| 5945 | Gwin Verdon    |

table 'casting' (15706 records)

| movieid | actorid | ord |
|---------|---------|-----|
| 972     | 588     | 1   |
| 849     | 588     | 2   |
| 1575    | 588     | 3   |
| 47      | 590     | 4   |
| 334     | 590     | 5   |
| ...     | ...     | ... |