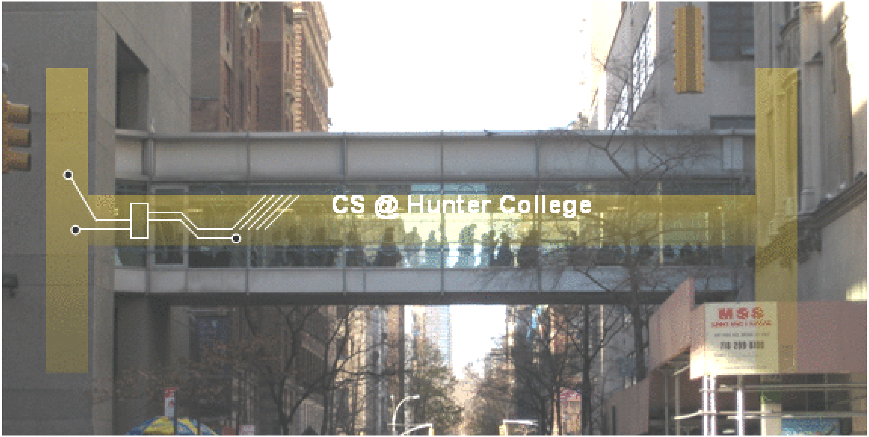
CSci 127: Introduction to Computer Science



hunter.cuny.edu/csci

Frequently Asked Questions

From lecture slips & recitation sections.

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  It's a practice exam that we're holding next lecture.
  More details at the end of lecture.

Announcements

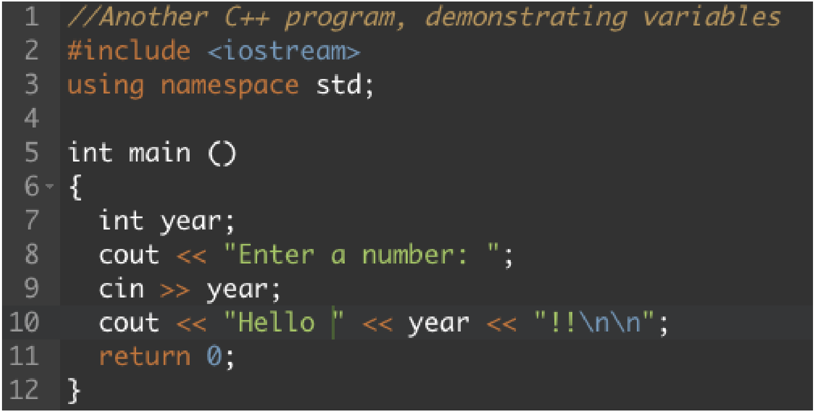
- Two handouts today:
  - Lecture slip, and
  - Final exam plans (pink).

Today's Topics

- Introducing C++: Basic Format & Variables
- I/O and Definite Loops in C++
- More Info on the Final Exam

In Pairs or Triples:

- Write a complete **Python program** that converts kilograms to pounds.
- *Predict what the C++ code will do:*



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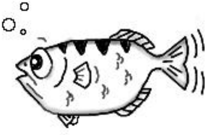
Python Tutor

- Write a complete **Python program** that converts kilograms to pounds.

(Write from scratch in `pythonTutor`.)

Side Note: gdb



gdb.org

- Part of Richard Stallman's "GNU is Not Unix" (GNU) project.

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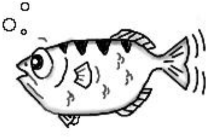

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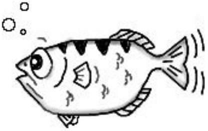

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- Lightweight, widely-available program that allows you to "step through" your code line-by-line.

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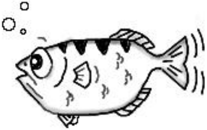

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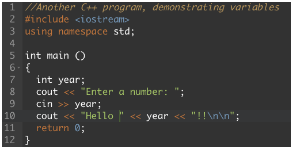
- Written in 1986, gdb is the GNU debugger and based on dbx from the Berkeley Distribution of Unix.
- Lightweight, widely-available program that allows you to "step through" your code line-by-line.
- Available on the lab machines (via command-line and the IDE spyder) and on-line (onlinegdb.com).

onlinegdb demo



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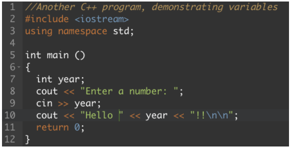
(Demo with `onlinegdb`)

Introduction to C++



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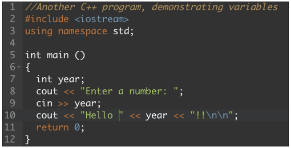

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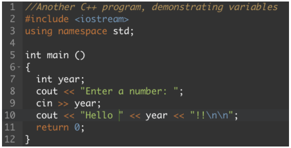

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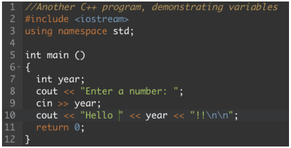

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- Today, we'll introduce the basic structure and simple input/output (I/O) in C/C++.

Introduction to C++

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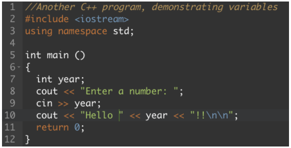

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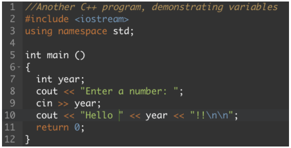

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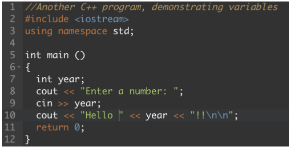

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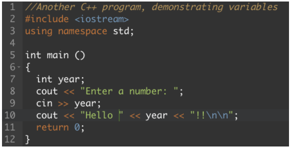

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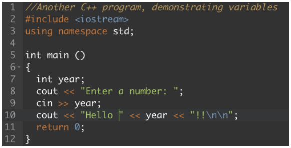

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int main()
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     cout << "Hello world!";
     return(0);
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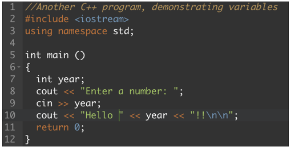

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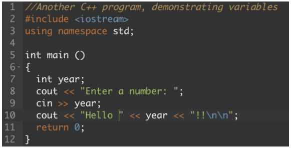

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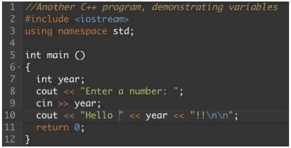

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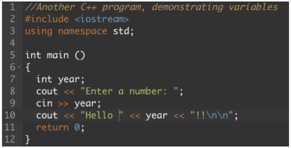

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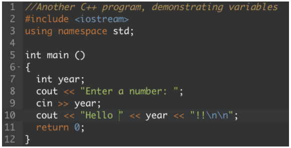

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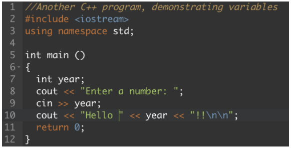

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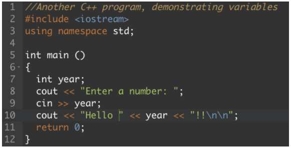

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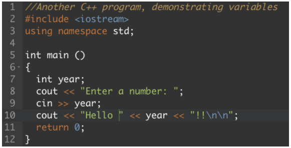

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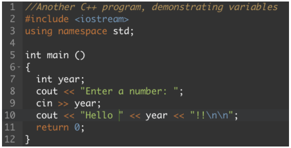

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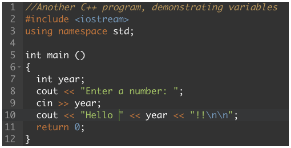
Introduction to C++



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//Another C++ program, demonstrating variables
#include <iostream>
using namespace std;

int main ()
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}
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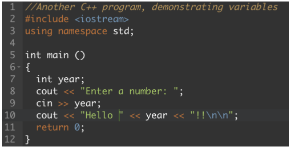

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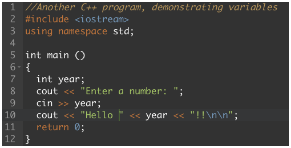

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In Pairs or Triples:

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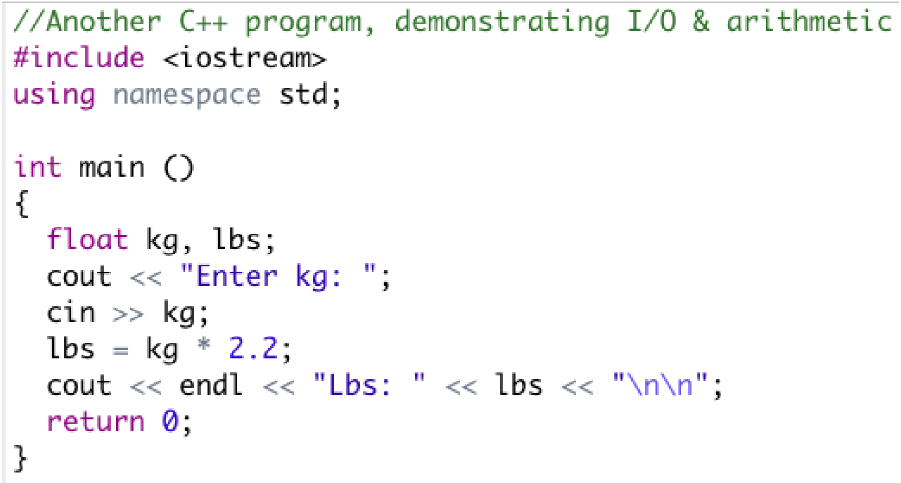

```
//Another C++ program, demonstrating I/O & arithmetic
#include <iostream>
using namespace std;

int main ()
{
  float kg, lbs;
  cout << "Enter kg: ";
  cin >> kg;
  lbs = kg * 2.2;
  cout << endl << "Lbs: " << lbs << "\n\n";
  return 0;
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```
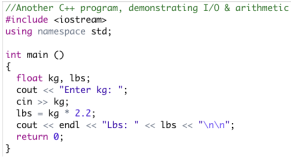

C++ Demo



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(Demo with `onlinegdb`)

Today's Topics

- Introducing C++: Basic Format & Variables
- **I/O and Definite Loops in C++**
- More Info on the Final Exam

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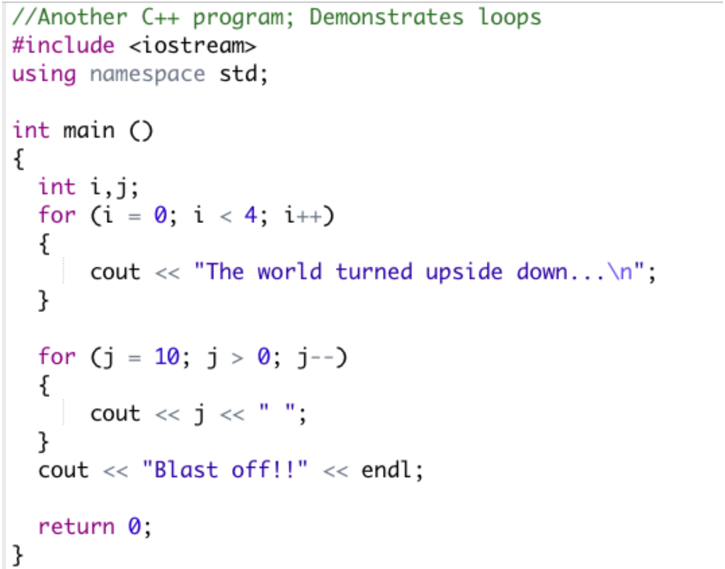


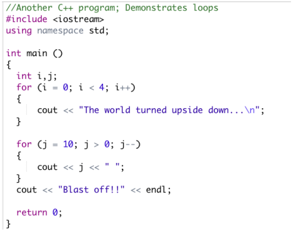
```
//Another C++ program; Demonstrates loops
#include <iostream>
using namespace std;

int main ()
{
  int i,j;
  for (i = 0; i < 4; i++)
  {
      cout << "The world turned upside down...\n";
  }

  for (j = 10; j > 0; j--)
  {
      cout << j << " ";
  }
  cout << "Blast off!!" << endl;

  return 0;
}
```

C++ Demo



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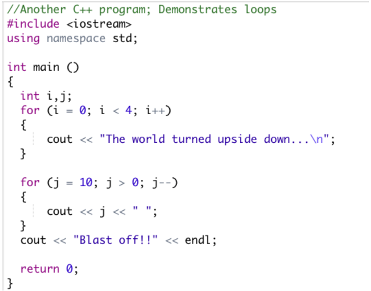
Definite loops



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  }
  cout << "Blast off!!" << endl;

  return 0;
}
```

General format:

```
for ( initialization ; test ; updateAction )
{

        command1;
        command2;
        command3;
        ...
}
```

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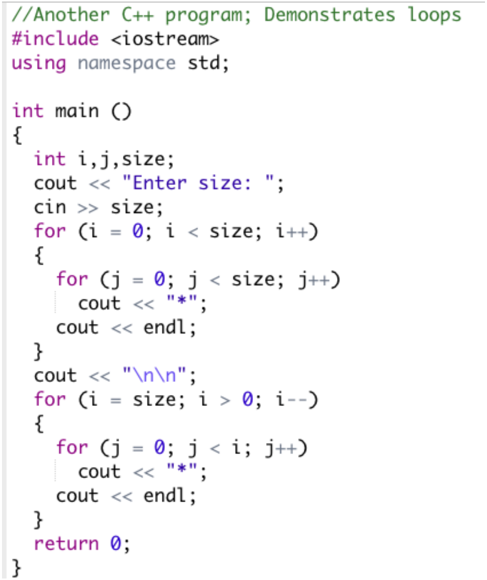

```
//Another C++ program; Demonstrates loops
#include <iostream>
using namespace std;

int main ()
{
  int i,j,size;
  cout << "Enter size: ";
  cin >> size;
  for (i = 0; i < size; i++)
  {
    for (j = 0; j < size; j++)
      cout << "*";
    cout << endl;
  }
  cout << "\n\n";
  for (i = size; i > 0; i--)
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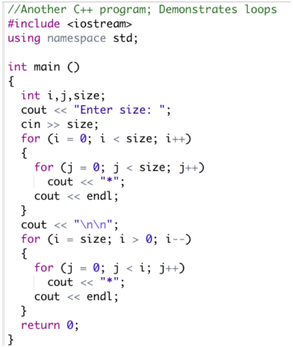
C++ Demo



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(Demo with C++)

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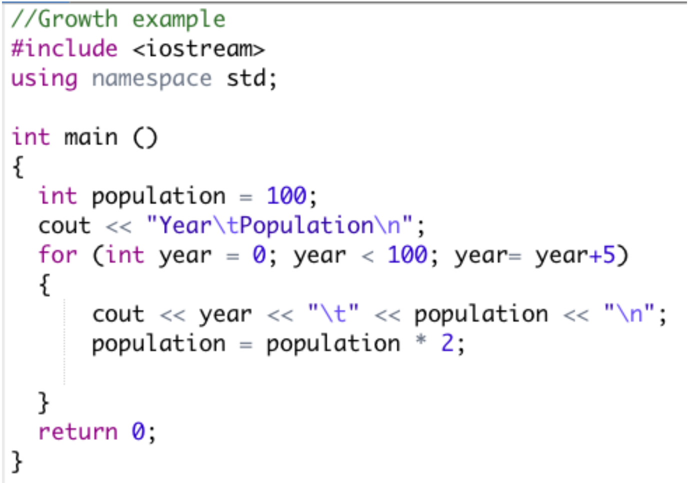

```
//Growth example
#include <iostream>
using namespace std;

int main ()
{
  int population = 100;
  cout << "Year\tPopulation\n";
  for (int year = 0; year < 100; year= year+5)
  {
      cout << year << "\t" << population << "\n";
      population = population * 2;

  }
  return 0;
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```
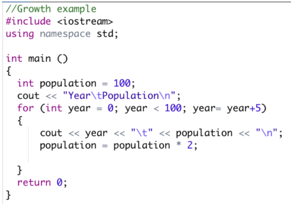

C++ Demo



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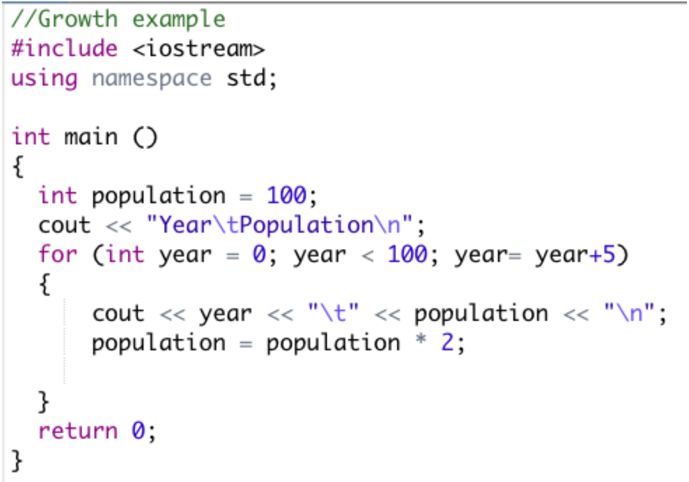
(Demo with C++)

Lecture Slips

In pairs or triples: **translate** the C++ program into Python:



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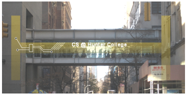
```

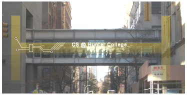
Recap: C++



- On lecture slip, write down a topic you wish we had spent more time (and why).

Recap: C++

- On lecture slip, write down a topic you wish we had spent more time (and why).
- C++ is a popular programming language that extends C.



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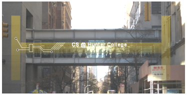

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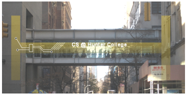

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for (i = 0; i < 10; i++) {
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```

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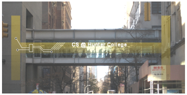

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- Pass your lecture slip to the aisles for UTA's to collect.

Today's Topics

- Introducing C++: Basic Format & Variables
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- **More Info on the Final Exam**

Final Exam: When

- The final exam is **Wednesday, 19 December, 9am-11am**, Assembly Hall (118 HN).

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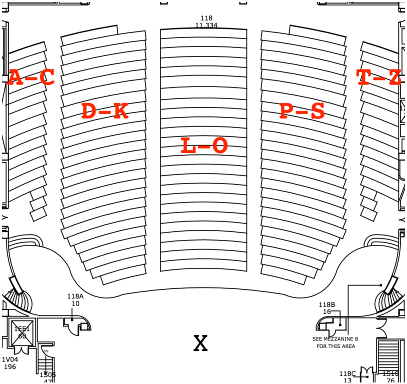
- If you have accommodations via the Accessibility Office, we will send the exam to their testing center.
  (Must complete by end of day, Tuesday, 18 December.)

Final Exam: Logistics



- Bring ID, note sheet, pencils or pens.

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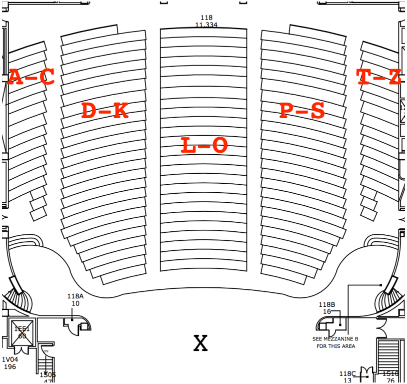

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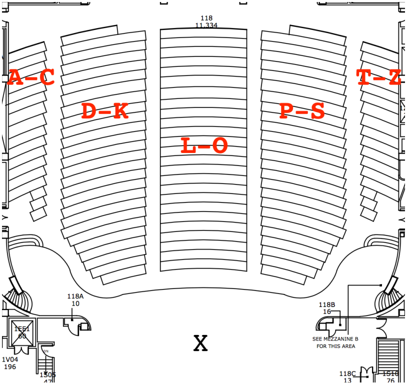

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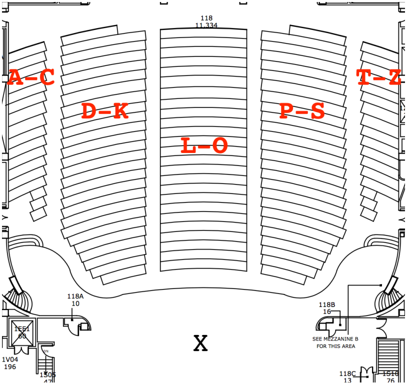

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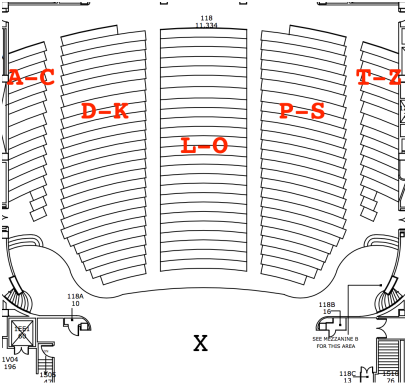

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- Cannot start the exam after students start leaving.

Final Exam: Format

- The exam is 2 hours long.

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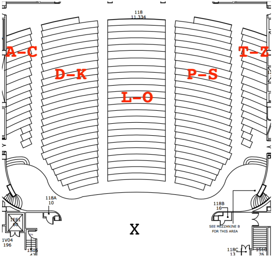
- Past exams available on webpage (includes answer keys).

Mock Final



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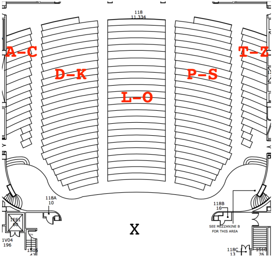

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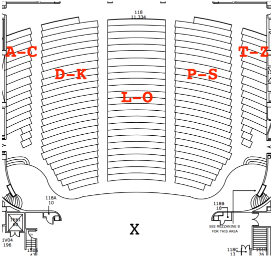

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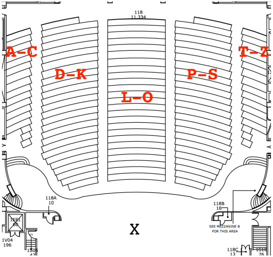

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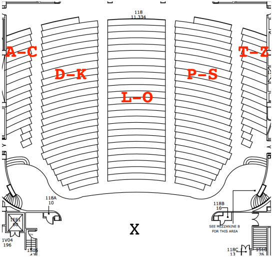

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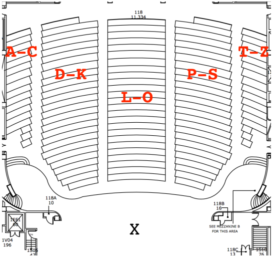

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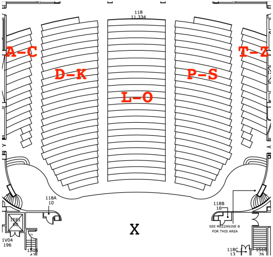

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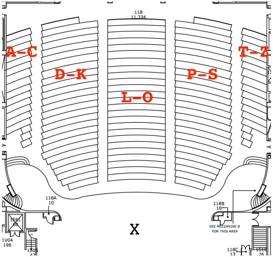
- Practice exam: the same format as the final (except 1, not full 2 hours).
- Bring ID & 1 page of notes (will check IDs during exam).
- Seating by last name: A-C, D-J, J-M, N-S, and T-Z.
  - Seating: every other seat, every other row.
  - Sign in as you enter (clipboards for each section of the alphabet).
  - Sign out as you leave (cannot leave in first 45 minutes).

Mock Final



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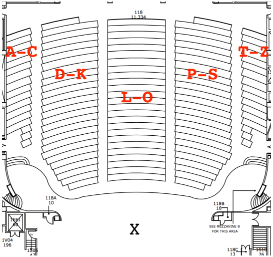
    - Seating: every other seat, every other row.
    - Sign in as you enter (clipboards for each section of the alphabet).
    - Sign out as you leave (cannot leave in first 45 minutes).
- Lecture slip for that week: signing out at end of mock exam.

Mock Final



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- Lecture slip for that week: signing out at end of mock exam.
- Answer key will be available on webpage after lecture.

Practice Quiz & Final Questions

- Lightning rounds:

Practice Quiz & Final Questions

- Lightning rounds:
  - write as much you can for 60 seconds;

Practice Quiz & Final Questions

- Lightning rounds:
  - write as much you can for 60 seconds;
  - followed by answer; and

Practice Quiz & Final Questions

- Lightning rounds:
  - write as much you can for 60 seconds;
  - followed by answer; and
  - repeat.

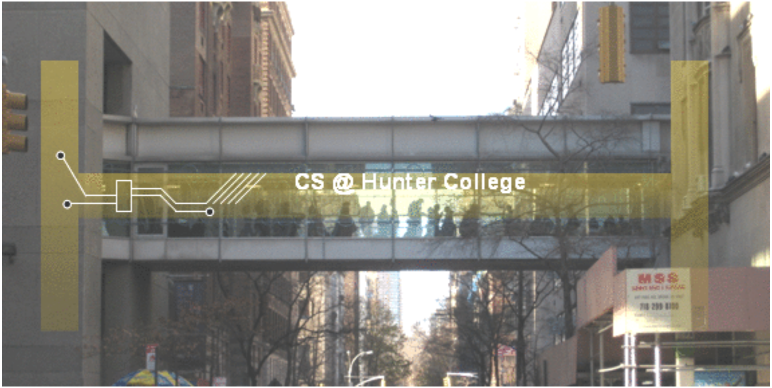
Practice Quiz & Final Questions

- Lightning rounds:
  - write as much you can for 60 seconds;
  - followed by answer; and
  - repeat.
- Past exams are on the webpage (under Final Exam Information).

Practice Quiz & Final Questions

- Lightning rounds:
  - write as much you can for 60 seconds;
  - followed by answer; and
  - repeat.
- Past exams are on the webpage (under Final Exam Information).
- We'll start with Spring 18, Version 1.

Writing Boards



- Return writing boards as you leave...