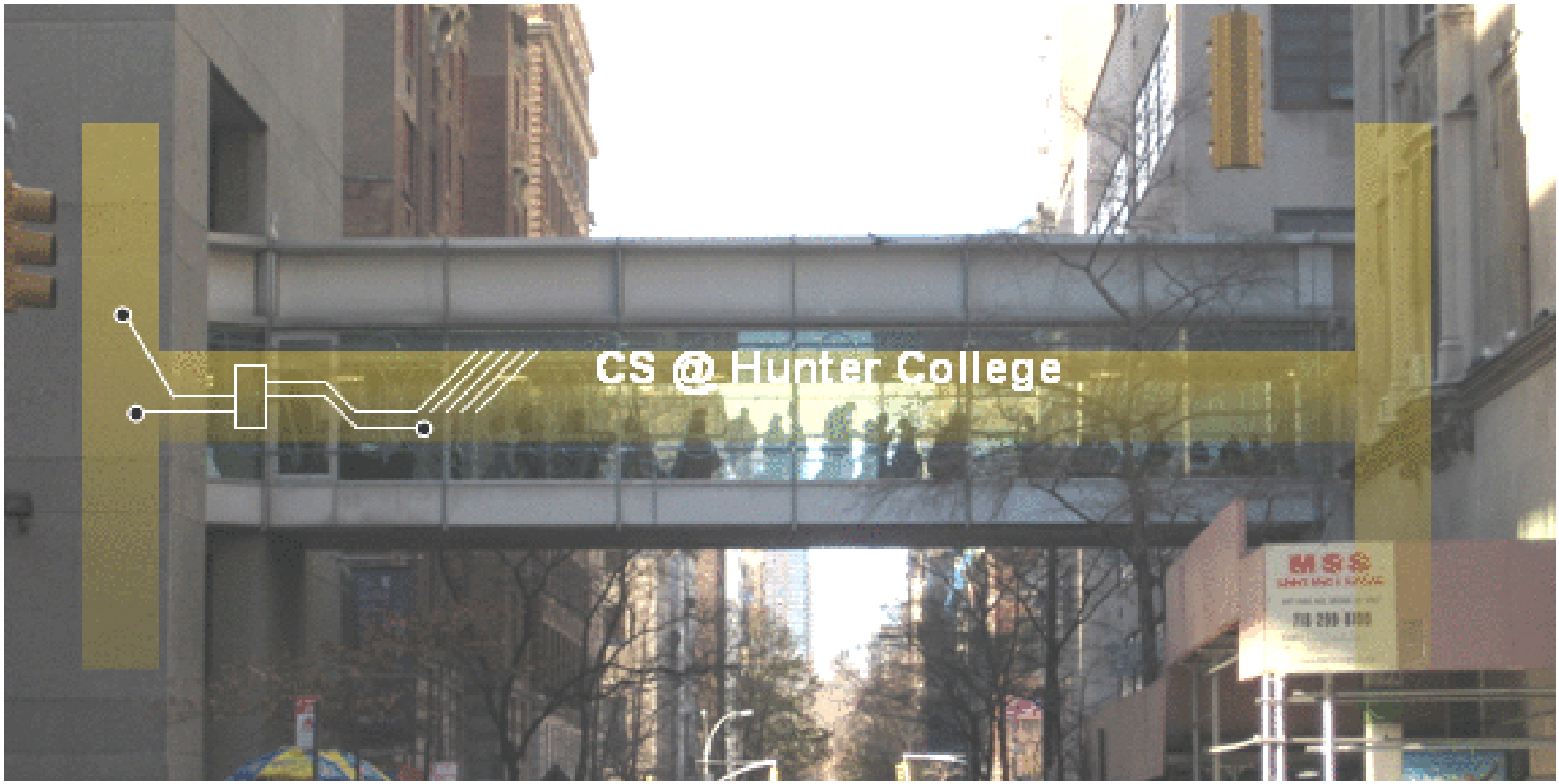
CSci 127: Introduction to Computer Science



hunter.cuny.edu/csci

- This lecture will be recorded

Announcements

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  - Only 1.15 hours for the Mock, 2 hours for the real exam.

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  - Come to lecture, login to Gradescope and take the exam.
  - I will be available on chat to answer questions.
  - Only 1.15 hours for the Mock, 2 hours for the real exam.
  - Just a practice run, this WILL NOT be the same as the real exam.

Frequently Asked Questions

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- Why do you care about cheating?
  First: it gives unfair advantage & is immoral.
  Second: it degrades the quality of our students.
  Third: it's a standard question on faculty references.
  Industry & graduate schools hate it: don't want someone who falsifies work.

Today's Topics

```cpp
//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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- Recap: I/O & Definite Loops in C++
- Conditionals in C++
- Indefinite Loops in C++
- Recap: C++ & Python

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Recap: Basic Form & I/O in C++

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- Blocks of code uses '{' and '}'.
- Commands generally end in ';'.

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- Recap: I/O & Definite Loops in C++
- **Conditionals in C++**
- Indefinite Loops in C++
- Recap: C++ & Python

Challenge:

Predict what the following pieces of code will do:

```cpp
//Demonstrates conditionals
#include <iostream>
using namespace std;

int main ()
{
    int yearBorn;
    cout << "Enter year born: ";
    cin >> yearBorn;
    if (yearBorn < 1946)
    {
        cout << "Greatest Generation";
    }
    else if (yearBorn <= 1964)
    {
        cout << "Baby Boomer";
    }
    else if (yearBorn <= 1984)
    {
        cout << "Generation X";
    }
    else if (yearBorn <= 2004)
    {
        cout << "Millennial";
    }
    else
    {
        cout << "TBD";
    }

    return 0;
```

```cpp
using namespace std;

int main ()
{
    string conditions = "blowing snow";
    int winds = 100;
    float visibility = 0.2;

    if ( ( (winds > 35) && (visibility < 0.25) )
         ( (conditions == "blowing snow") ||
           (conditions == "heavy snow") ) )
        cout << "Blizzard!\n";

    string origin = "South Pacific";

    if (winds > 74)
        cout << "Major storm, called a ";
    if ((origin == "Indian Ocean")
        ||(origin == "South Pacific"))
        cout << "cyclone.\n";
    else if (origin == "North Pacific")
        cout << "typhoon.\n";
    else
        cout << "hurricane.\n";
```

C++ Demo

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(Demo with `onlinegdb`)

Conditionals

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    {
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    }

    return 0;
}
```

General format:

```
if ( logical expression )
{
      command1;
      ...
}
else if ( logical expression )
{
      command1;
      ...
}
else
{
      command1;
      ...
}
```

Logical Operators in C++

Very similar, just different names: `&&`, `||`, and `!`:

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and (`&&`)

in1		in2	*returns:*
`False`	`&&`	`False`	`False`
`False`	`&&`	`True`	`False`
`True`	`&&`	`False`	`False`
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Logical Operators in C++

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or (`||`)

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not (`!`)

	in1	*returns:*
`!`	`False`	`True`
`!`	`True`	`False`

Lecture Quiz

- Log-in to Gradescope
- Find LECTURE 13 Quiz
- Take the quiz
- **You have 3 minutes**

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- Recap: I/O & Definite Loops in C++
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- **Indefinite Loops in C++**
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Challenge:

Predict what the following pieces of code will do:

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

int main ()
{
  int population = 100;
  int year = 0;
  cout << "Year\tPopulation\n";
  while (population < 1000)
  {
      cout << year << "\t" << population << "\n";
      population = population * 2;
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(Demo with `onlinegdb`)

Indefinite Loops: `while`

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  }
  return 0;
}
```

General format:

`while` (*logical expression*)
{

command1;
command2;
command3;
...

}

Challenge:

Predict what the following piece of code will do:

```
//Demonstrates loops
#include <iostream>
using namespace std;

int main ()
{
  int num;
  cout << "Enter an even number: ";
  cin >> num;
  while (num % 2 != 0)
  {
      cout << "\nThat's odd!\n";
      cout << "Enter an even number: ";
      cin >> num;
  }
  cout << "You entered: "
       << num << ".\n";
  return 0;
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```

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General format:

`while` (*logical expression*)
{

command1;
command2;
command3;
...

}

Challenge:

Predict what the following pieces of code will do:

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//Demonstrates do-while loops
#include <iostream>
using namespace std;

int main ()
{
  int num;
  do
  {
      cout << "Enter an even number: ";
      cin >> num;
  } while (num % 2 != 0);

  cout << "You entered: "
       << num << ".\n";
  return 0;
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#include <iostream>
using namespace std;

int main ()
{
  int num;
  do
  {
      cout << "Enter an even number: ";
      cin >> num;
  } while (num % 2 != 0);

  cout << "You entered: "
       << num << ".\n";
  return 0;
}
```

(Demo with `onlinegdb`)

Indefinite Loops: `do-while`

```
//Demonstrates do-while loops
#include <iostream>
using namespace std;

int main ()
{
  int num;
  do
  {
      cout << "Enter an even number: ";
      cin >> num;
  } while (num % 2 != 0);

  cout << "You entered: "
       << num << ".\n";
  return 0;
}
```

General format:

```
do
{
      command1;
      command2;
      command3;
      ...
} while ( logical expression );
```

Today's Topics

```cpp
//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;
}
```

- Recap: I/O & Definite Loops in C++
- Conditionals in C++
- Indefinite Loops in C++
- **Recap: C++ & Python**

Recap: C++ Control Structures

- I/O:

```
//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;
}
```

Recap: C++ Control Structures

- I/O: `cin >> ...;`

```
//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;
}
```

Recap: C++ Control Structures

- I/O: `cin >> ...;` & `cout << ...;`

```
//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;
}
```

Recap: C++ Control Structures

- I/O: `cin >> ...;` & `cout << ...;`
- Definite loops:

```
//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;
}
```

Recap: C++ Control Structures

- I/O: `cin >> ...;` & `cout << ...;`
- Definite loops:

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

```
//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;
}
```

Recap: C++ Control Structures

- I/O: `cin >> ...;` & `cout << ...;`
- Definite loops:

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

- Conditionals:

```
//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;
}
```

Recap: C++ Control Structures

```
//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;
}
```

- I/O: `cin >> ...;` & `cout << ...;`
- Definite loops:

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

- Conditionals:

```
if (logical expression)
{
      ...
}
else
{
      ...
}
```

Recap: C++ Control Structures

```
//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;
}
```

- I/O: `cin >> ...;` & `cout << ...;`
- Definite loops:

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

- Conditionals:

```
if (logical expression)
{
      ...
}
else
{
      ...
}
```

- Indefinite loops:

Recap: C++ Control Structures

```
//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;
}
```

- I/O: `cin >> ...;` & `cout << ...;`
- Definite loops:
  `for (i = 0; i < 10; i++)`
  {
  ...
  }
- Conditionals:
  `if` (*logical expression*)
  {
  ...
  }
  `else`
  {
  ...
  }
- Indefinite loops:
  `while` (*logical expression*)
  {
  ...
  }

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

- *Rewrite this program in Python:*

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 1; i < 50; i++)
  {
    cout << i << endl;
  }
  return 0;
}
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

```
#include <iostream>
using namespace std;
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

```
#include <iostream>
using namespace std;
int main()
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

```
#include <iostream>
using namespace std;
int main()
{
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 2017; i >= 2000; i=i-2)
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 2017; i >= 2000; i=i-2)
  {
    cout << "Year is" << i << endl;
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in C++:*

```
for i in range(2017, 2000, -2):
    print("Year is", i)
```

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 2017; i >= 2000; i=i-2)
  {
    cout << "Year is" << i << endl;
  }
  return 0;
}
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in Python:*

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 1; i < 50; i++)
  {
    cout << i << endl;
  }
  return 0;
}
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in Python:*

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 1; i < 50; i++)
  {
    cout << i << endl;
  }
  return 0;
}
```

```
for i in range(1, 50):
```

Challenge: Definite Loops in Python & C++

- *Rewrite this program in Python:*

```
#include <iostream>
using namespace std;
int main()
{
  for (int i = 1; i < 50; i++)
  {
    cout << i << endl;
  }
  return 0;
}
```

```
for i in range(1, 50):
    print(i)
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

- *Write a C++ program that asks the user the number of times they plan to ride transit this week. Your program should then print if it is cheaper to buy single ride metro cards or 7-day unlimited card.*
  (The 7-day card is $33.00, and the cost of single ride, with bonus, is $2.75).

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")  year = 2016
```

```
if TRUE and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE and \
    (not FALSE or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE and \
    (TRUE or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

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year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE and \
    (TRUE or FALSE):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE and \
    (TRUE or FALSE):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE and \
    (TRUE):
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE:
     print("Leap!!")
print("Year")
```

Challenge: Conditionals in Python & C++

- *Python: what is the output?*

```
year = 2016
if year % 4 == 0 and \
    (not (year % 100 == 0) or (year % 400 == 0)):
     print("Leap!!")
print("Year")
```

```
year = 2016
if TRUE:
     print("Leap!!")
print("Year")
```

Prints: Leap!
Year

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
  cin >> rides;
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
  cin >> rides;
  if (2.75 * rides < 33.00)
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
  cin >> rides;
  if (2.75 * rides < 33.00)
  {
    cout << "Cheaper to buy single ride metro cards.\n";
  }
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
  cin >> rides;
  if (2.75 * rides < 33.00)
  {
    cout << "Cheaper to buy single ride metro cards.\n";
  }
  else
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
  cin >> rides;
  if (2.75 * rides < 33.00)
  {
    cout << "Cheaper to buy single ride metro cards.\n";
  }
  else
  {
    cout << "Cheaper to buy 7-day unlimited card.\n";
  }
```

Challenge: Conditionals in Python & C++

- *Your program should then print if it is cheaper to buy single ride metro cards ($2.75 per ride) or 7-day unlimited card ($33.00).*

```
#include <iostream>
using namespace std;
int main()
{
  int rides;
  cout << "Enter number of rides:";
  cin >> rides;
  if (2.75 * rides < 33.00)
  {
    cout << "Cheaper to buy single ride metro cards.\n";
  }
  else
  {
    cout << "Cheaper to buy 7-day unlimited card.\n";
  }
  return 0;
}
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

- Write C++ code that repeatedly prompts until an odd number is entered.

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

```
#include <iostream>
using namespace std;
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

```
#include <iostream>
using namespace std;
int main()
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

```
#include <iostream>
using namespace std;
int main()
{
  int num = 0;
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

```
#include <iostream>
using namespace std;
int main()
{
  int num = 0;
  while (num % 2 == 0)
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

```
#include <iostream>
using namespace std;
int main()
{
  int num = 0;
  while (num % 2 == 0)
  {
    cout << "Enter an odd number:";
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
  s = input("Enter a non-empty string:  ")
print("You entered:  ", s)
```

- Write C++ code that repeatedly prompts until an odd number is entered.

```
#include <iostream>
using namespace std;
int main()
{
  int num = 0;
  while (num % 2 == 0)
  {
    cout << "Enter an odd number:";
    cin >> num;
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

```
s = ""
while s == "":
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int main()
{
  int num = 0;
  while (num % 2 == 0)
  {
    cout << "Enter an odd number:";
    cin >> num;
  }
```

Challenge: Indefinite Loops in Python & C++

- Write Python code that repeatedly prompts for a non-empty string.

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s = ""
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```

- Write C++ code that repeatedly prompts until an odd number is entered.

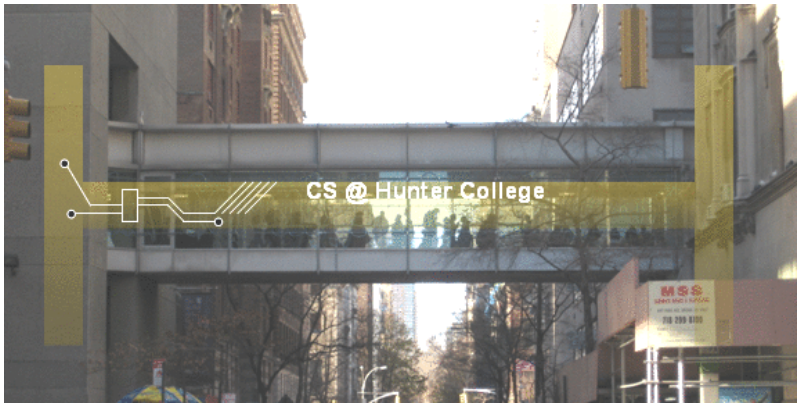
```
#include <iostream>
using namespace std;
int main()
{
  int num = 0;
  while (num % 2 == 0)
  {
    cout << "Enter an odd number:";
    cin >> num;
  }
  return 0;
}
```

Weekly Reminders!

Before next lecture, don't forget to:

- Work on this week's Online Lab

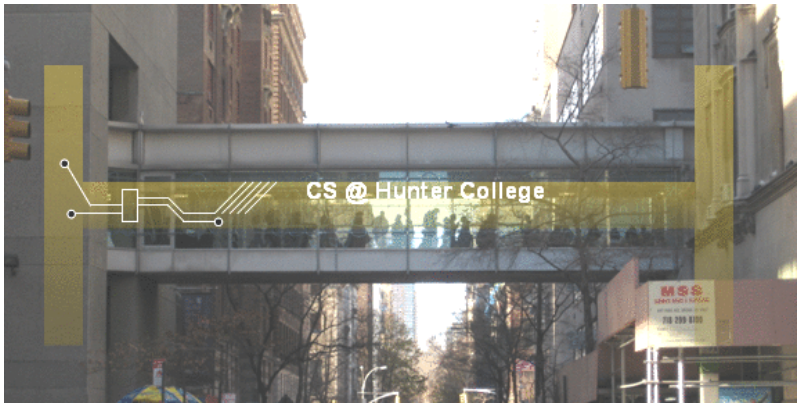
Weekly Reminders!



Before next lecture, don't forget to:

- Work on this week's Online Lab
- Optional - attend live Lab Review on Wednesday 1-2:30pm

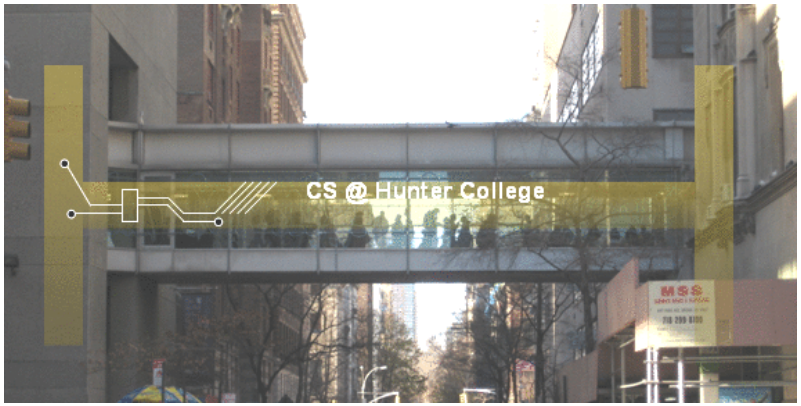
Weekly Reminders!



Before next lecture, don't forget to:

- Work on this week's Online Lab
- Optional - attend live Lab Review on Wednesday 1-2:30pm
- Take the Lab Quiz on Gradescope by 6pm on Wednesday

Weekly Reminders!



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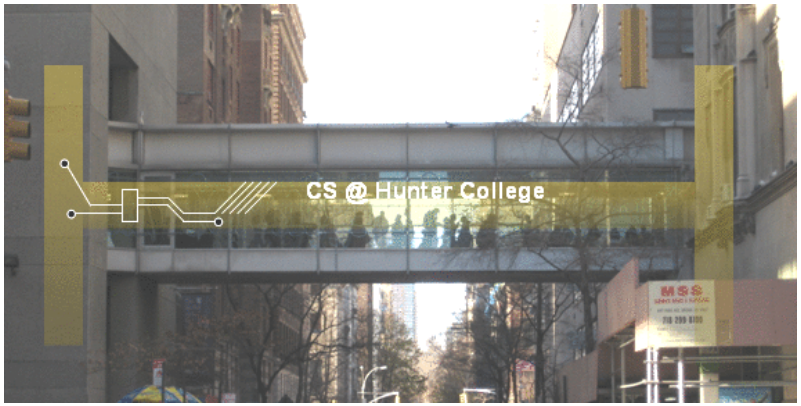

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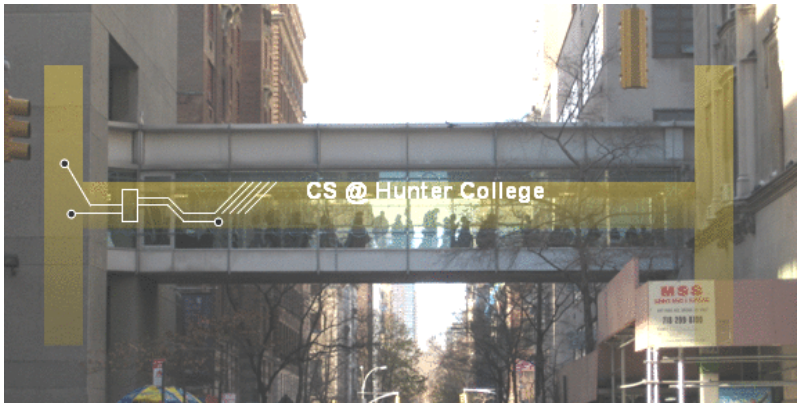

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