2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player

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Data Types and Expressions

NYU TANDON ONLINE

Data
- int
- float
- double
- char
- string
- bool
- vector
- Programmer defined classes

Expressions
- I/O expressions
- Arithmetic expressions
- Boolean expressions

Control Flow
- Sequential
- Branching
  - if
  - if-else
  - if-else if-else
  - switch
- Iterative
  - while
  - For
- Function calls
- Exceptions

00:39 28:50

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Data Types and Expressions

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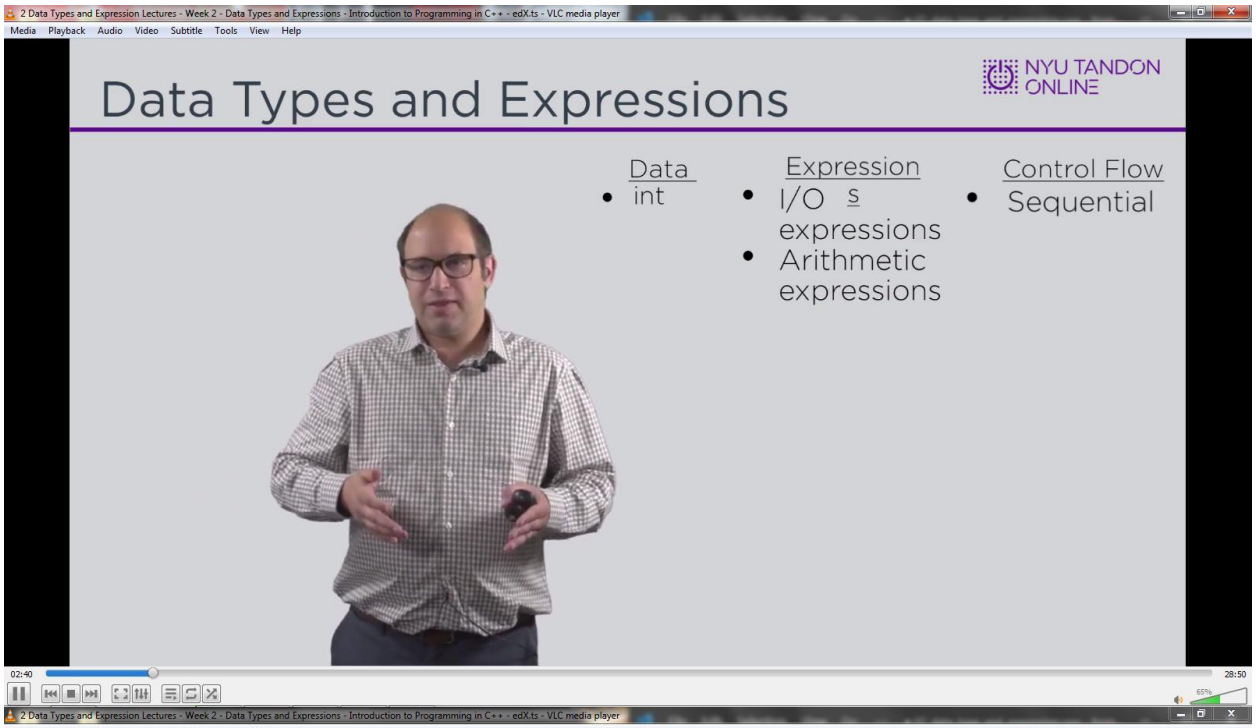
```
/* This program reads two integers from the user and prints
their sum */

#include <iostream>
using namespace std;

int main(){
      int num1;          //will hold the first input
      int num2;          //will hold the second input
      int sum;           //will hold the sum

      cout<<"Please enter two numbers separated by a
space"<<endl;
      cin>>num1>>num2;

      sum = num1 + num2;

            cout<<num1<<" + "<<num2<<" = "<<sum<<endl;

      return 0;
}
```

00:50 28:50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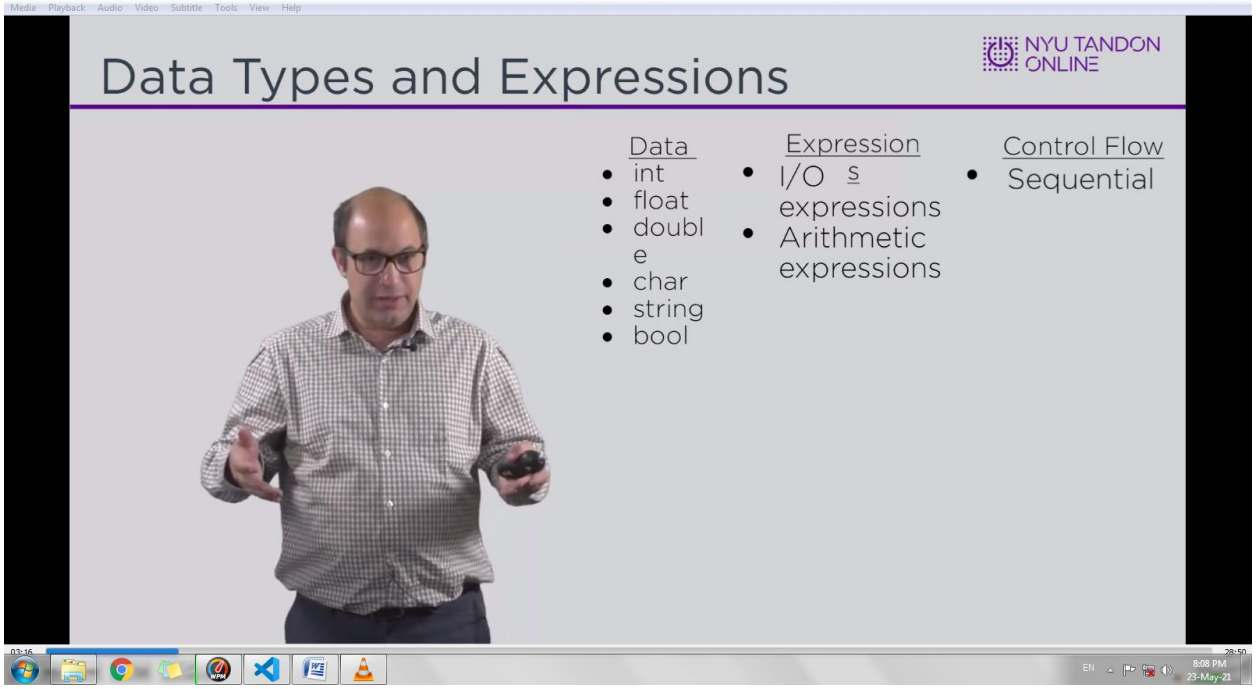
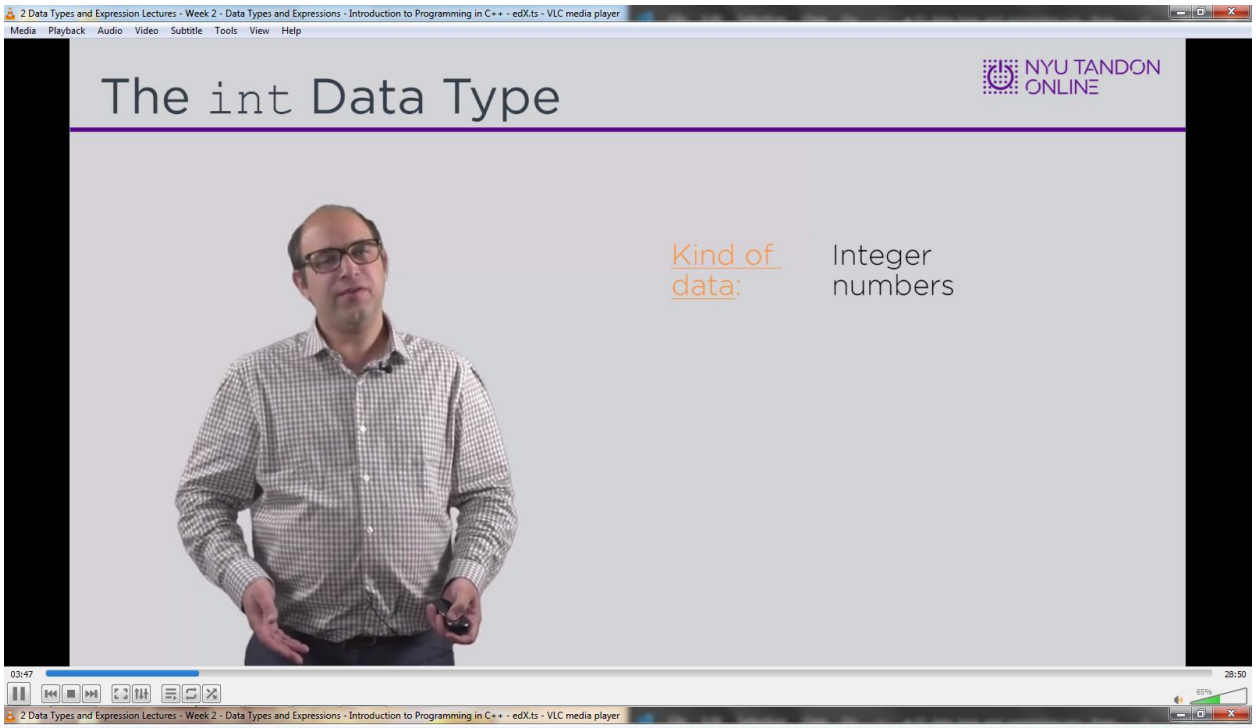
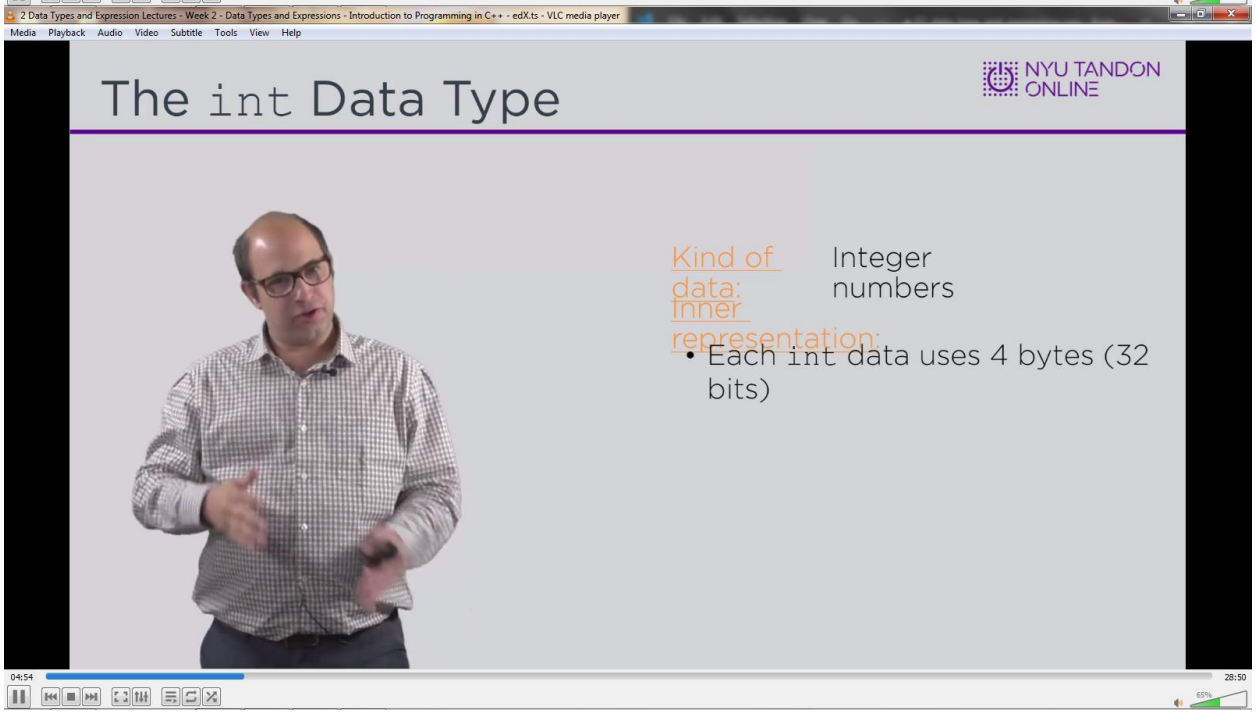
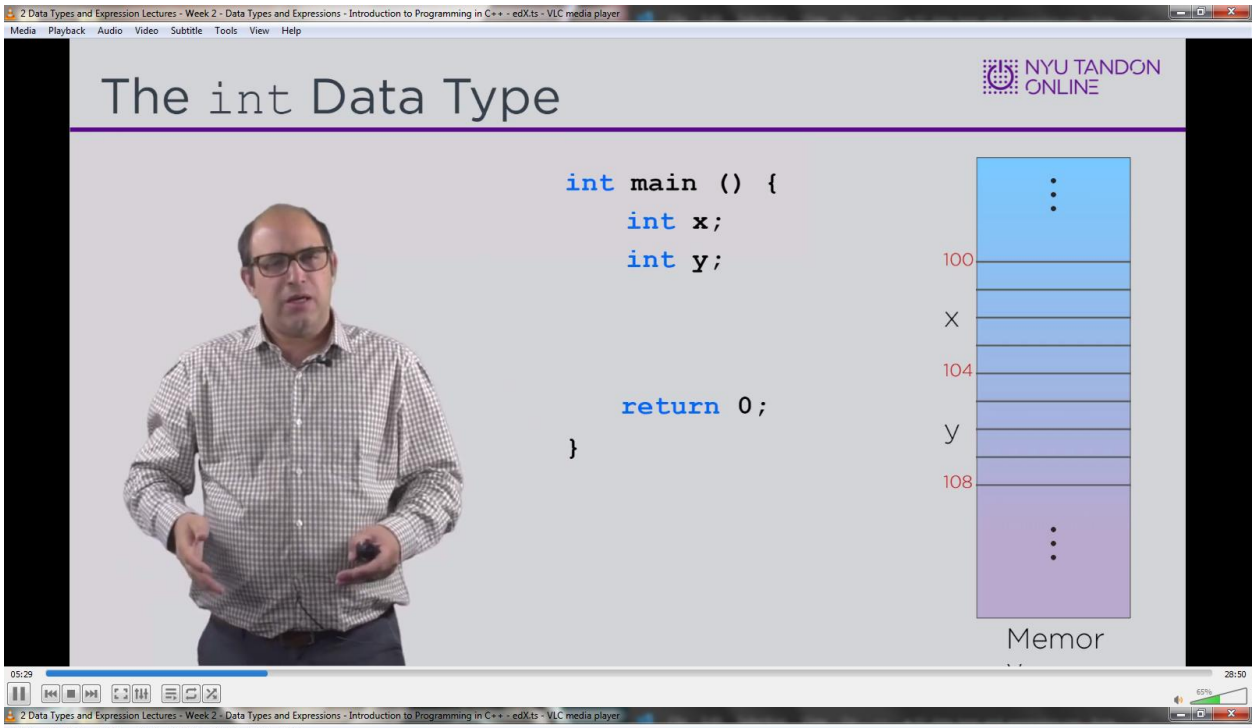
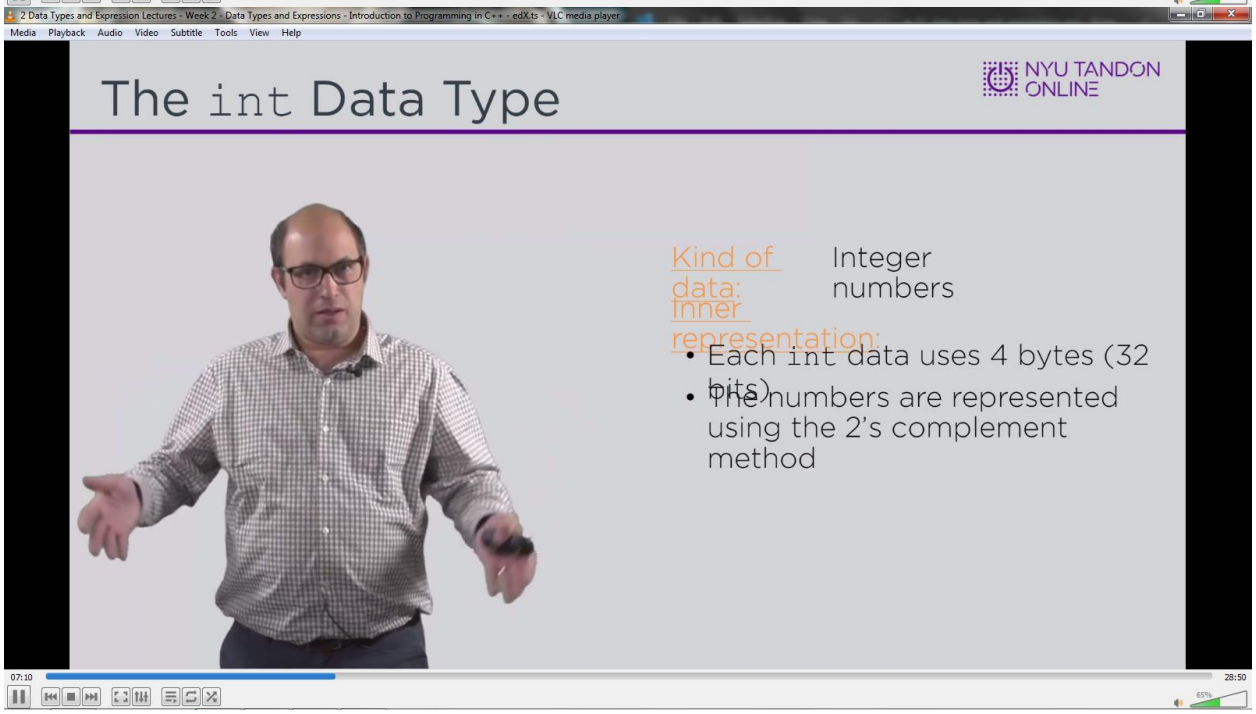
Media Playback Audio Video Subtitle Tools View Help
Data Types and Expressions
NYU TANDON ONLINE
Data
int
Expression
I/O s
expressions
Arithmetic
expressions
Control Flow
Sequential
02:40
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
Data Types and Expressions
NYU TANDON ONLINE
Data
int
float
doubl
e
char
string
bool
Expression
I/O s
expressions
Arithmetic
expressions
Control Flow
Sequential
03:46
28:50
8:08 PM
23-May-21


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data:
Integer numbers
03:47
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data:
Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
04:54
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main () {
int x;
int y;
return 0;
}
100
X
104
y
108
Memor
05:29
28:50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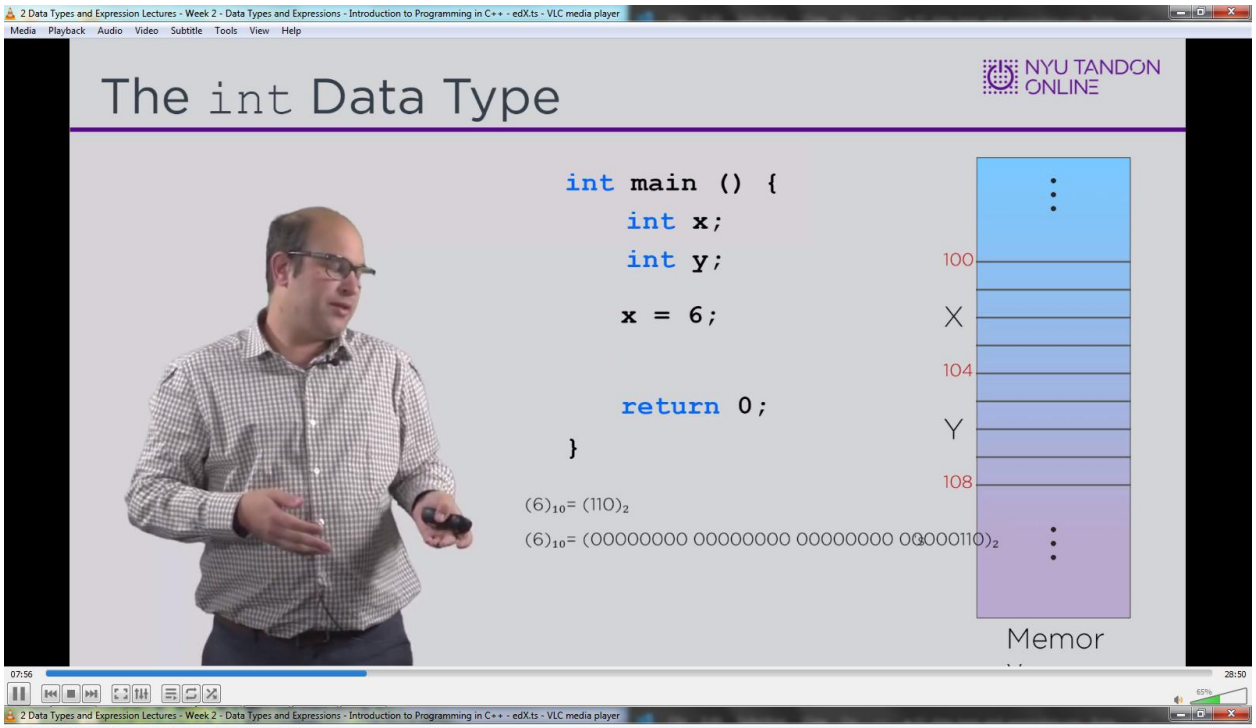
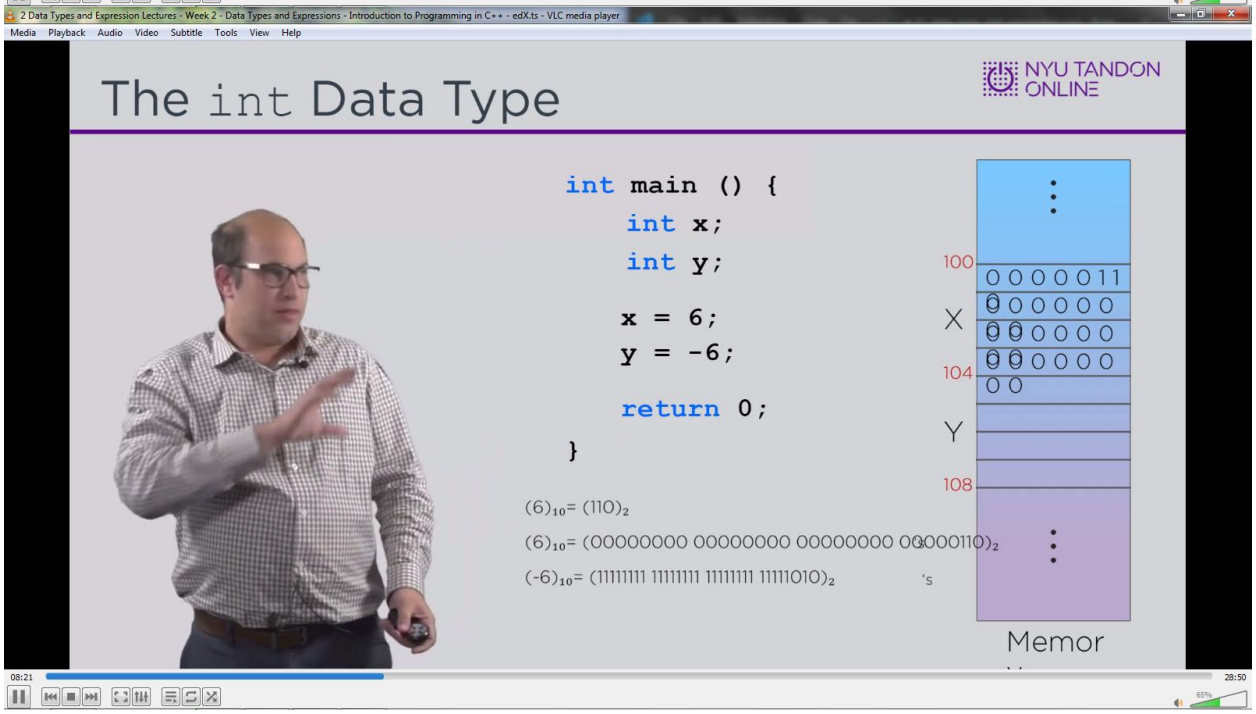
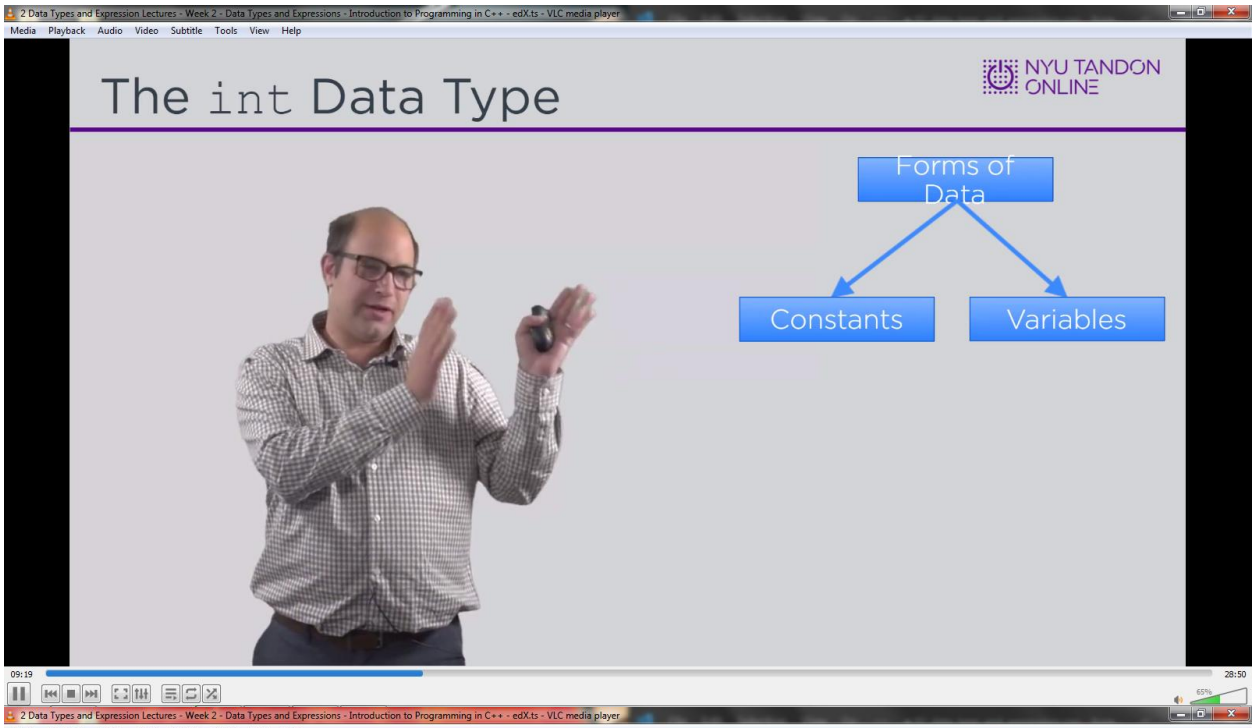
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data: Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
07:10
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main () {
int x;
int y;
x = 6;
return 0;
}
100
X
104
Y
108
$(6)_{10} = (110)_2$
$(6)_{10} = (00000000\ 00000000\ 00000000\ 00000110)_2$
Memor
07:56
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main () {
int x;
int y;
x = 6;
y = -6;
return 0;
}
100
X
104
Y
108
$(6)_{10} = (110)_2$
$(6)_{10} = (00000000\ 00000000\ 00000000\ 00000110)_2$
$(-6)_{10} = (11111111\ 11111111\ 11111111\ 11111010)_2$
Memor
08:21
28:50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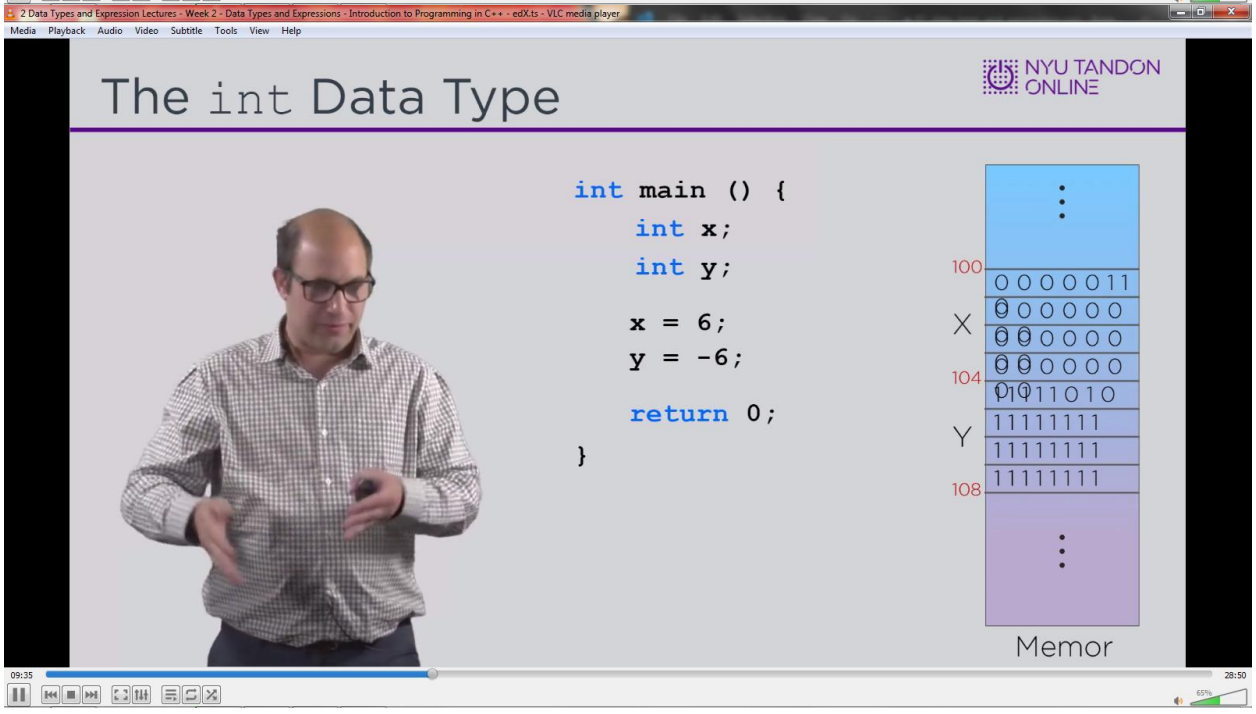
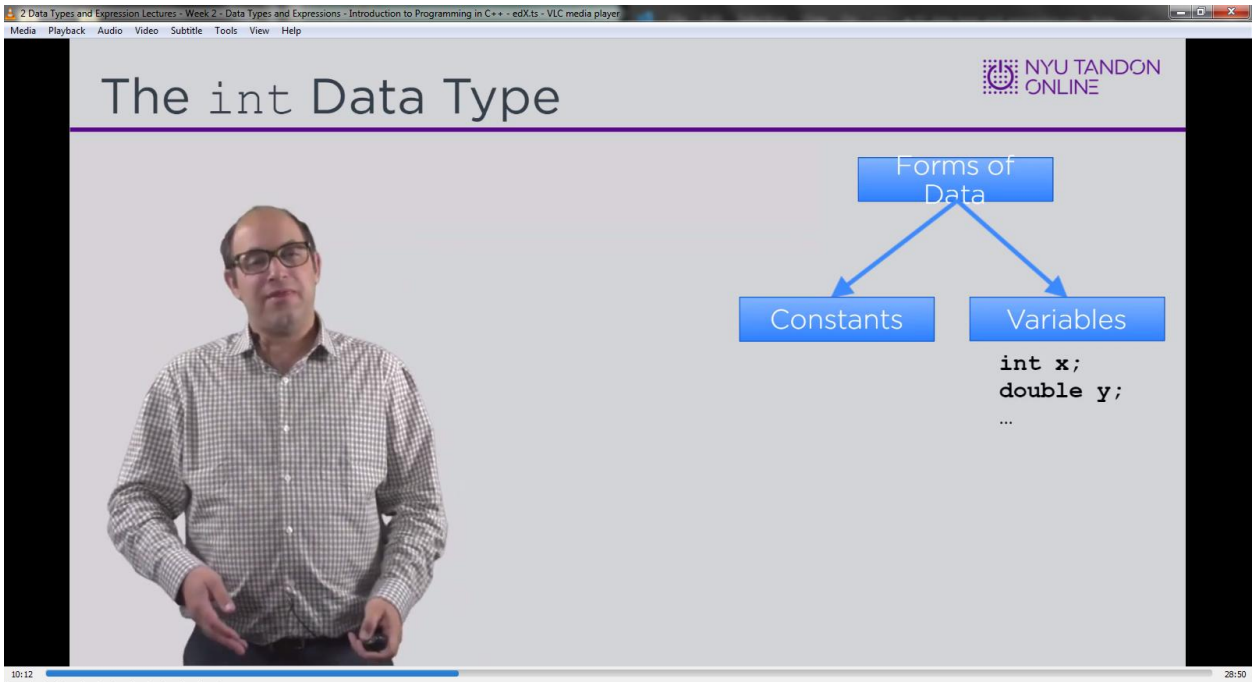
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Forms of Data
Constants
Variables
09:19
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main () {
int x;
int y;
x = 6;
y = -6;
return 0;
}
100
X
104
Y
108
Memor
09:35
28:50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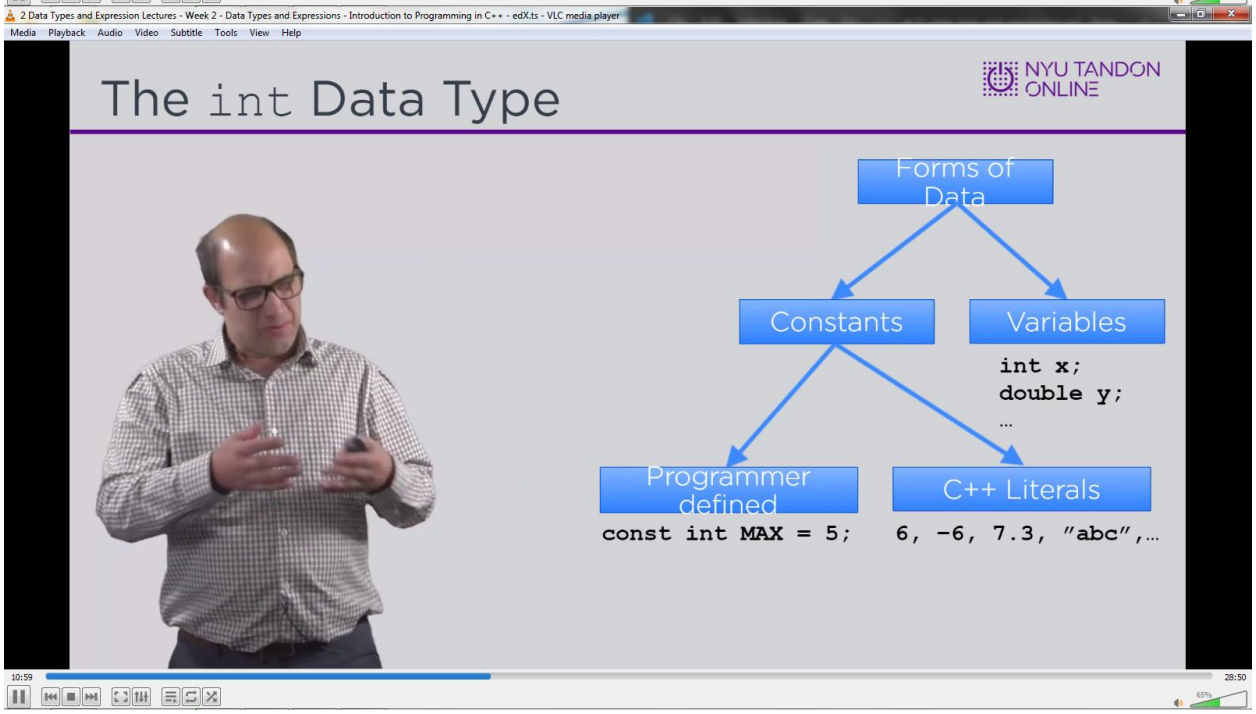
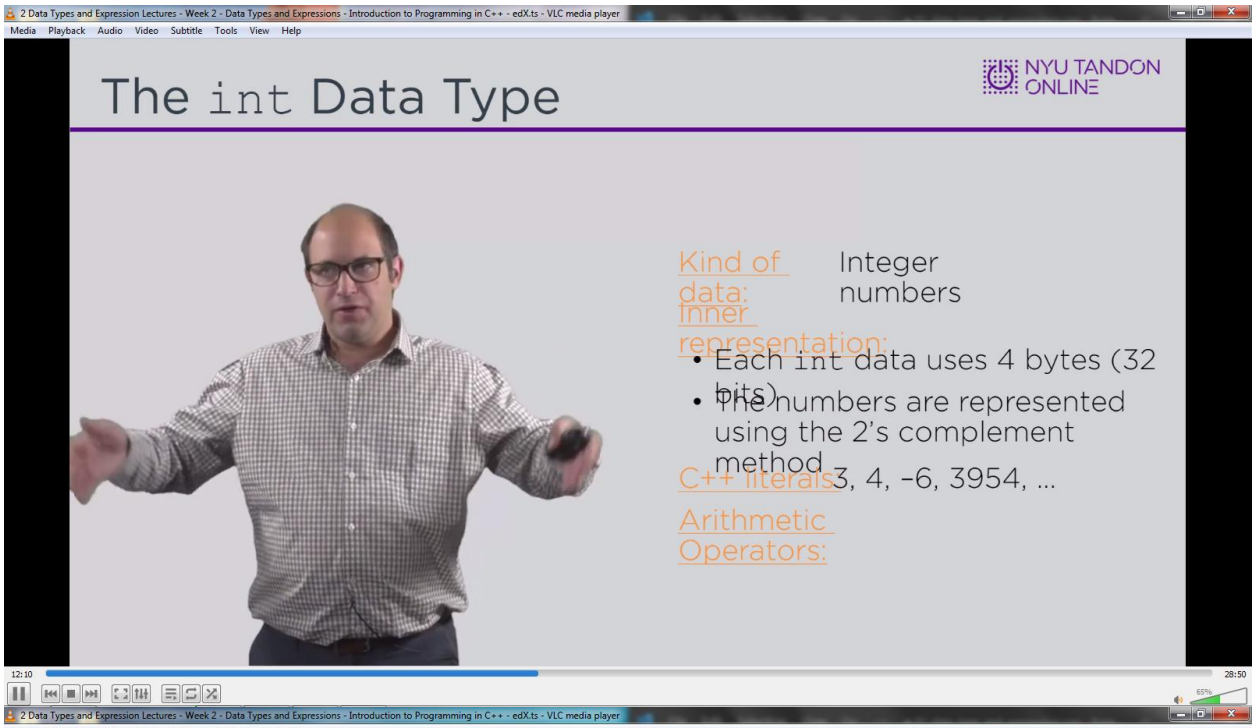
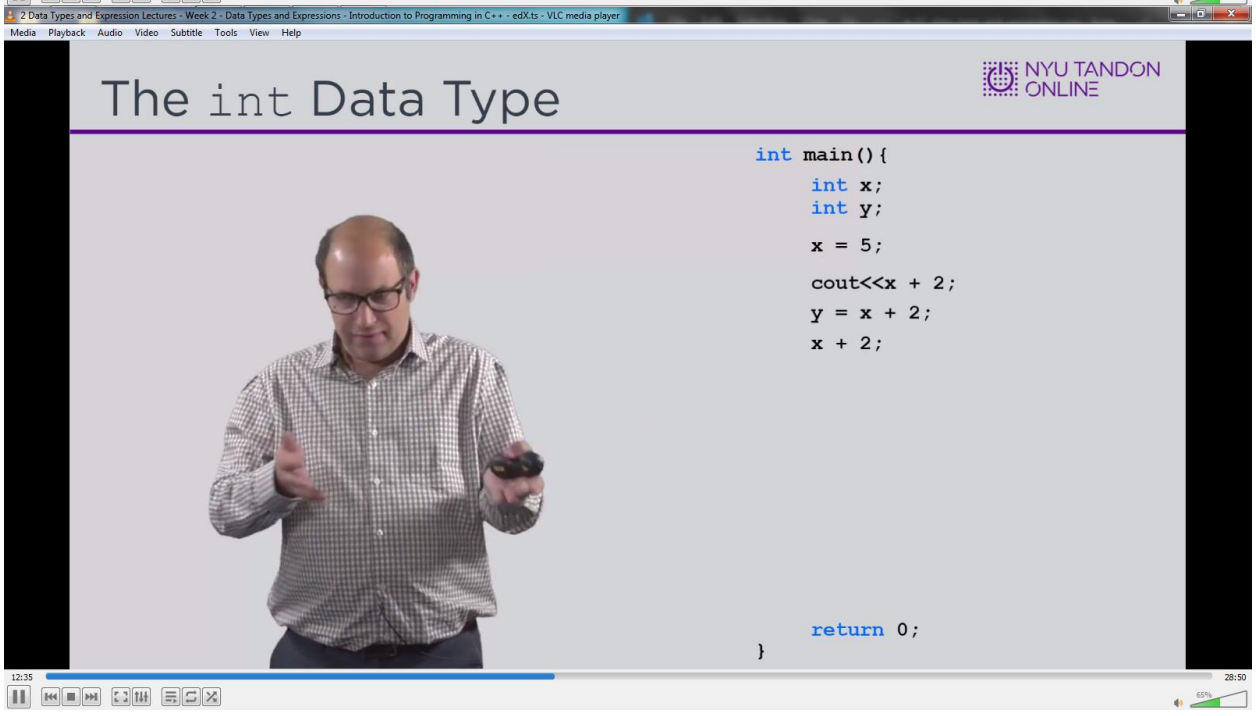
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Forms of Data
Constants
Variables
int x;
double y;
...
10:12
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Forms of Data
Constants
Variables
int x;
double y;
...
Programmer defined
const int MAX = 5;
C++ Literals
6, -6, 7.3, "abc",...
10:59
28:50


2 Data Types and Expression Lectures - Week 2 - Data Types and Expressions - Introduction to Programming in C++ - edX.ts - VLC media player
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data:
Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
C++ literals:
3, 4, -6, 3954, ...
Arithmetic Operators:
12:10
28:50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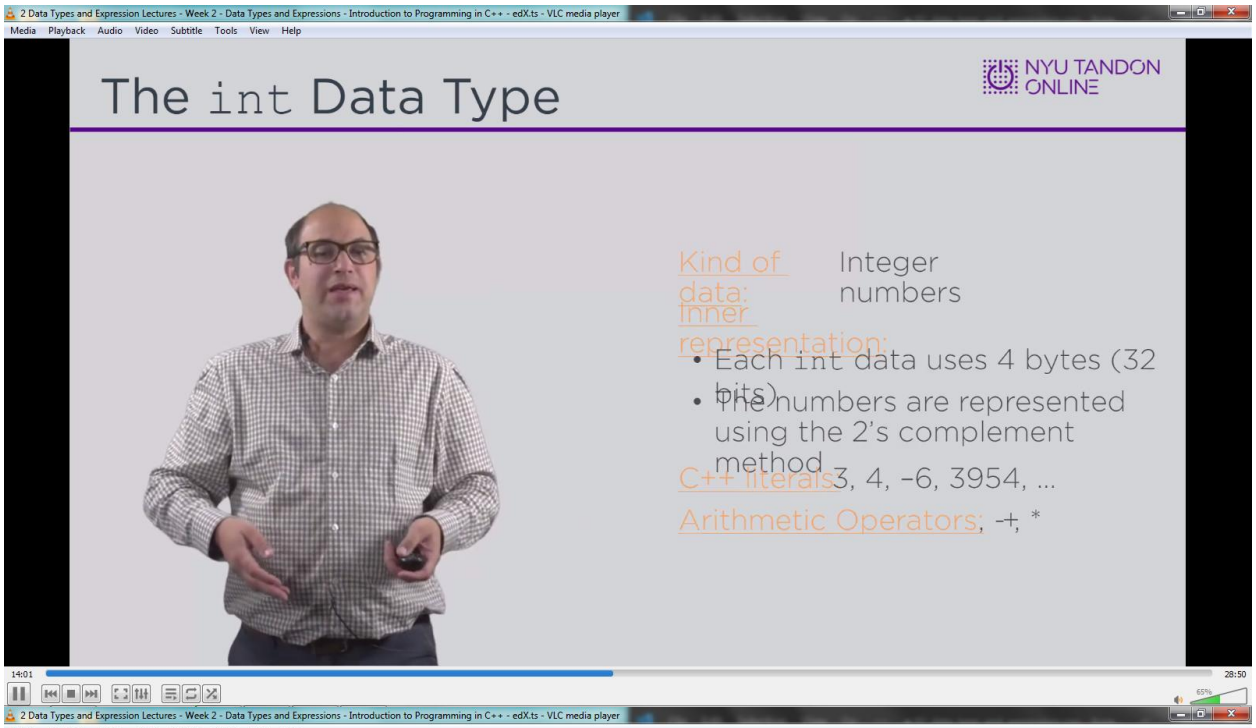
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main(){
int x;
int y;
x = 5;
cout<<x + 2;
y = x + 2;
x + 2;
return 0;
}
12:35
28:50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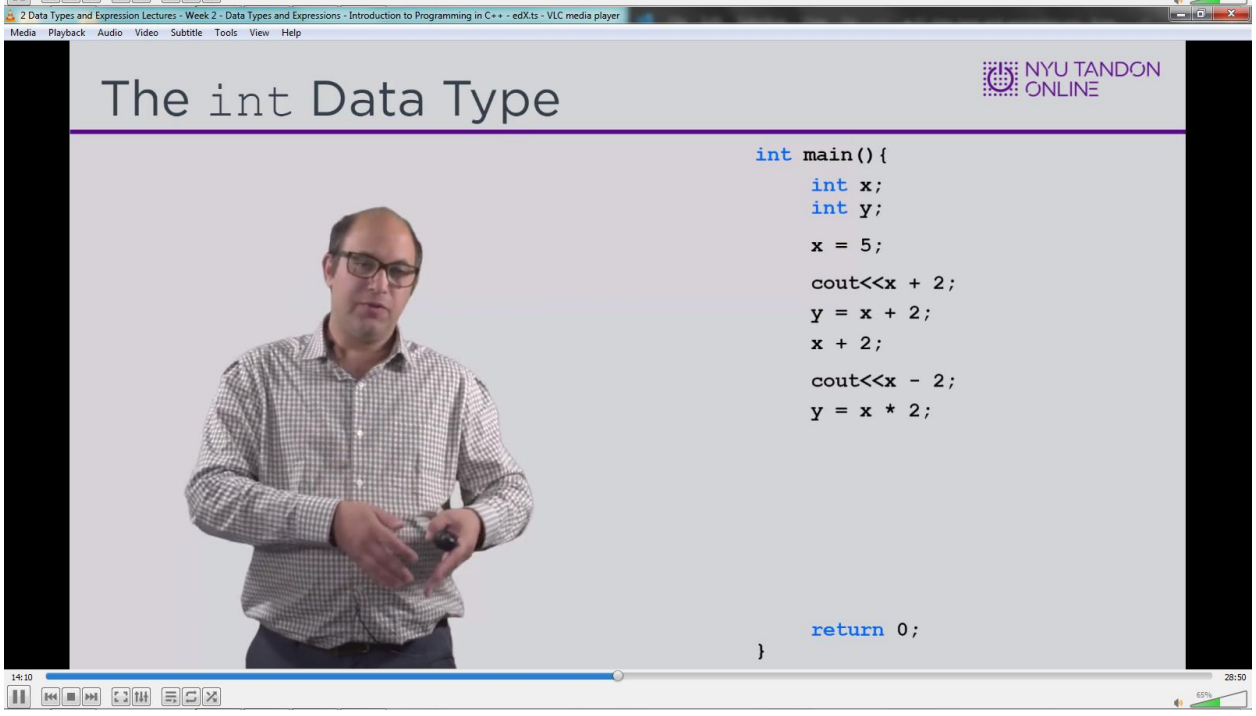
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data: Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
C++ literals: 3, 4, -6, 3954, ...
Arithmetic Operators: -, +, *
14:01
28:50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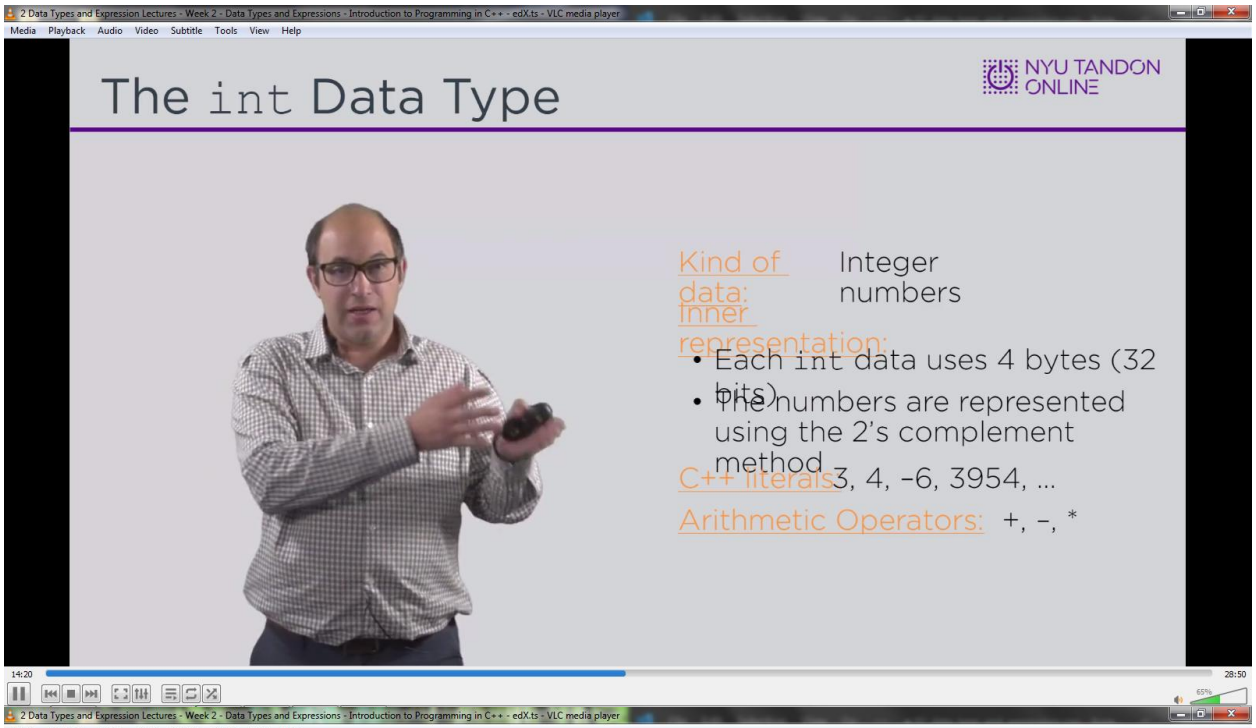
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main(){
int x;
int y;
x = 5;
cout<<x + 2;
y = x + 2;
x + 2;
cout<<x - 2;
y = x * 2;
return 0;
}
14:10
28:50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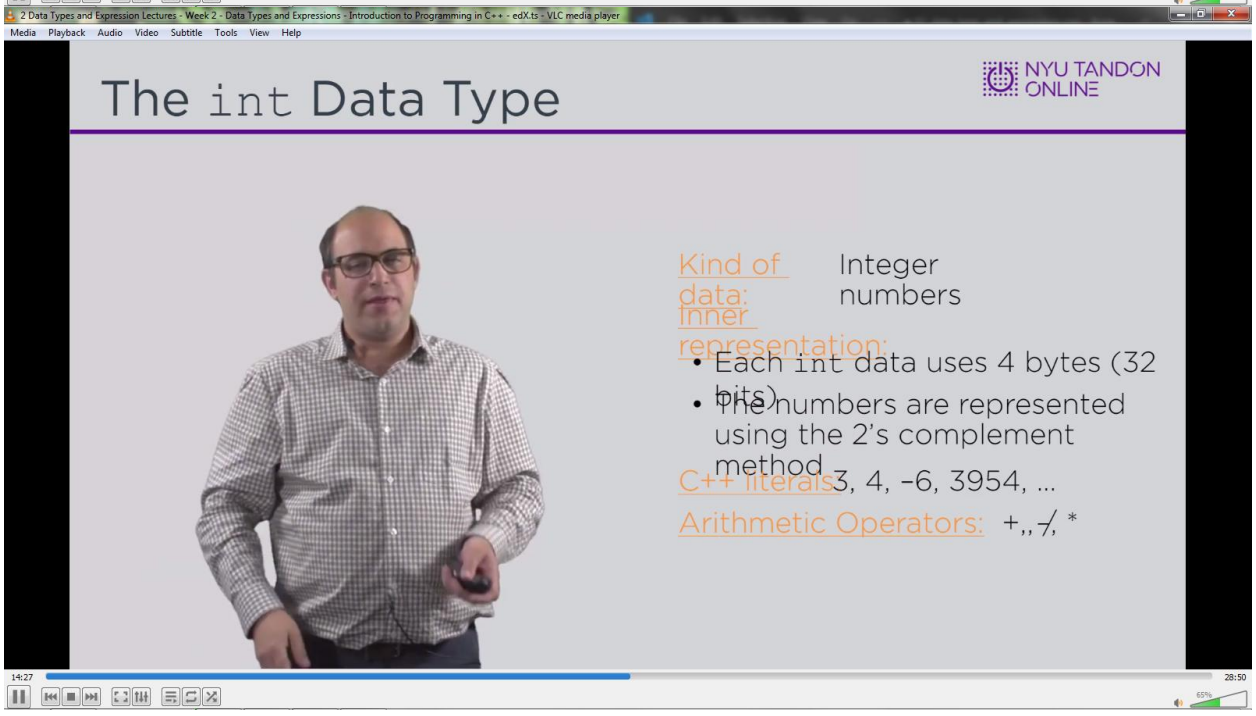
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data: Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
C++ literals: 3, 4, -6, 3954, ...
Arithmetic Operators: +, -, *
14:20
28:50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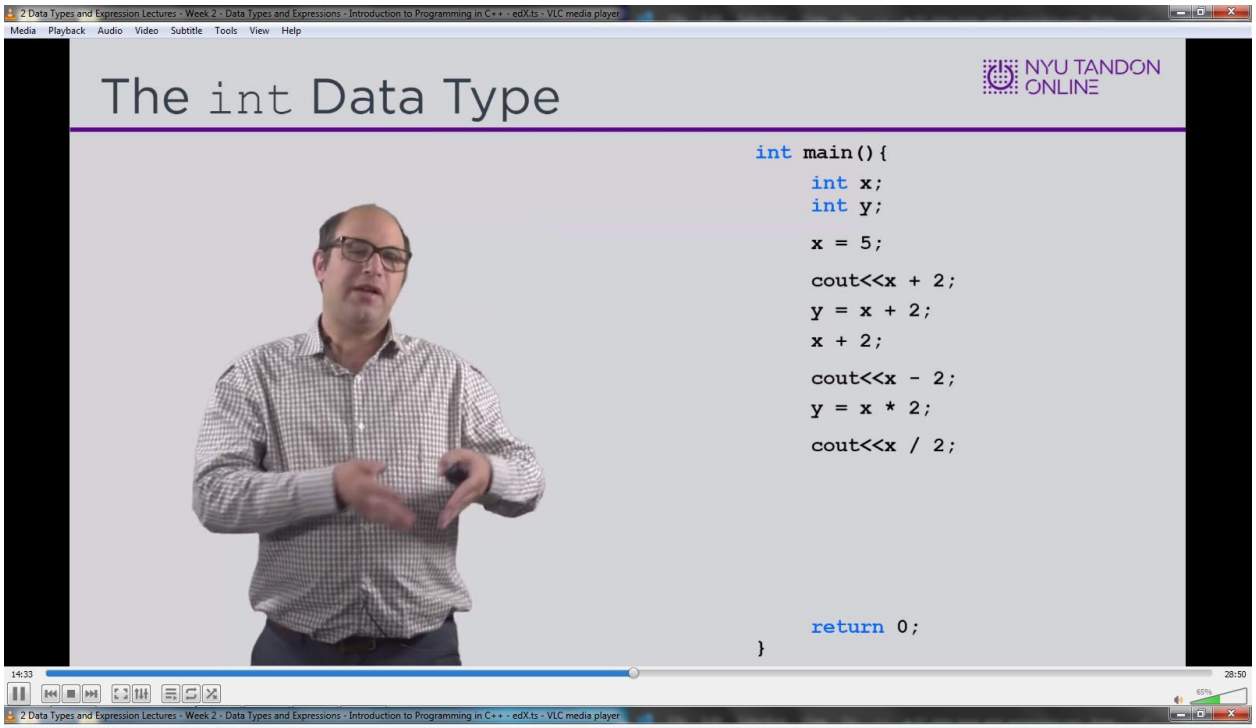
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data: Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
C++ literals: 3, 4, -6, 3954, ...
Arithmetic Operators: +, -, *
14:27
28:50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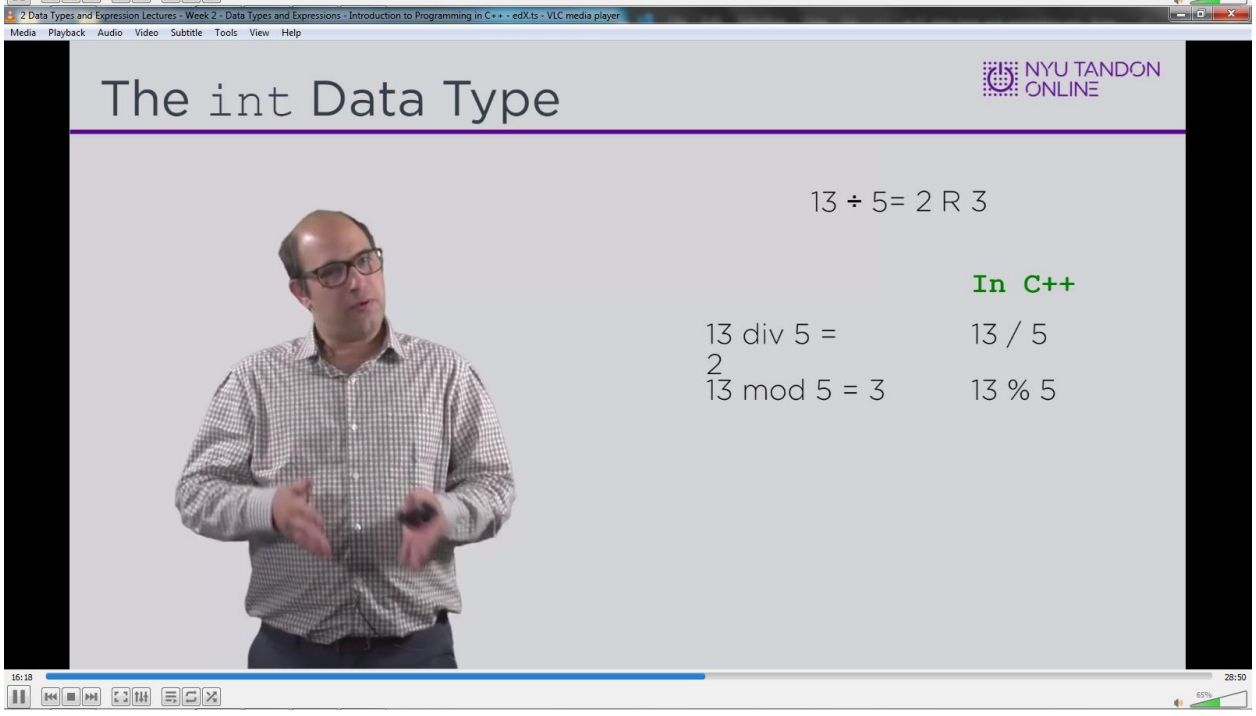
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main(){
int x;
int y;
x = 5;
cout<<x + 2;
y = x + 2;
x + 2;
cout<<x - 2;
y = x * 2;
cout<<x / 2;
return 0;
}
14:33
28:50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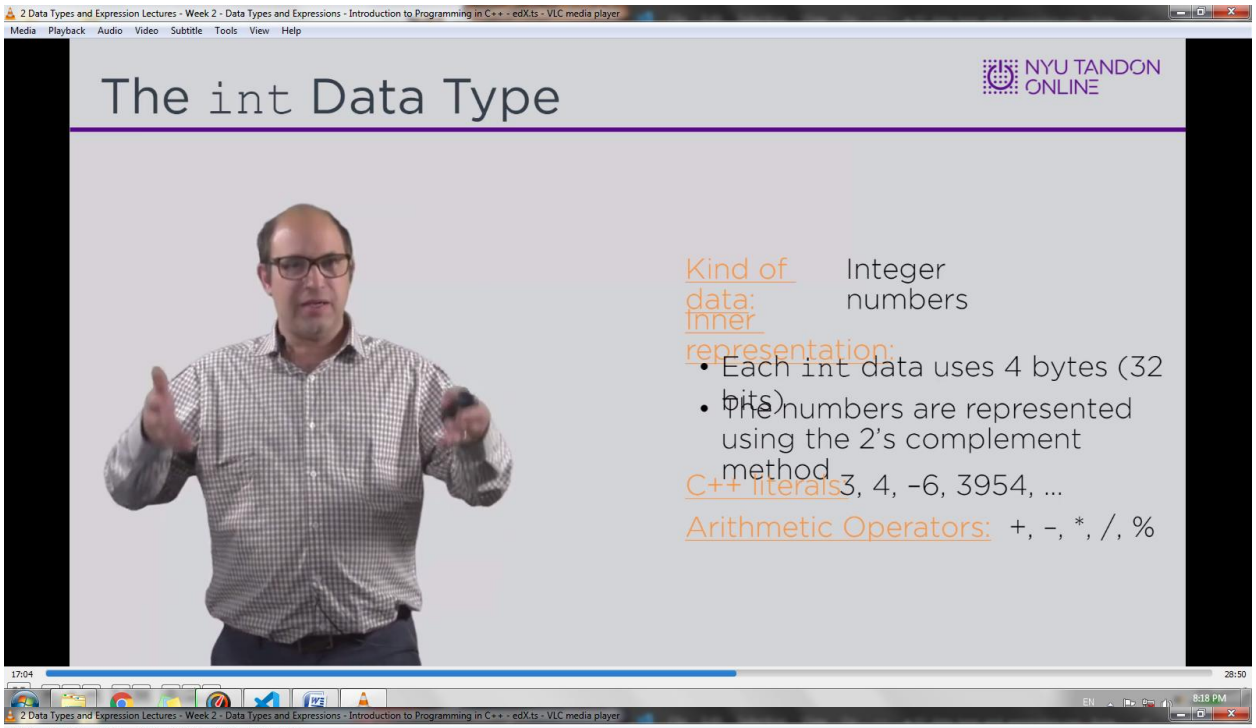
The int Data Type
NYU TANDON ONLINE
13 ÷ 5= 2 R 3
In C++
13 div 5 = 2
13 / 5
13 mod 5 = 3
13 % 5
16:18
28:50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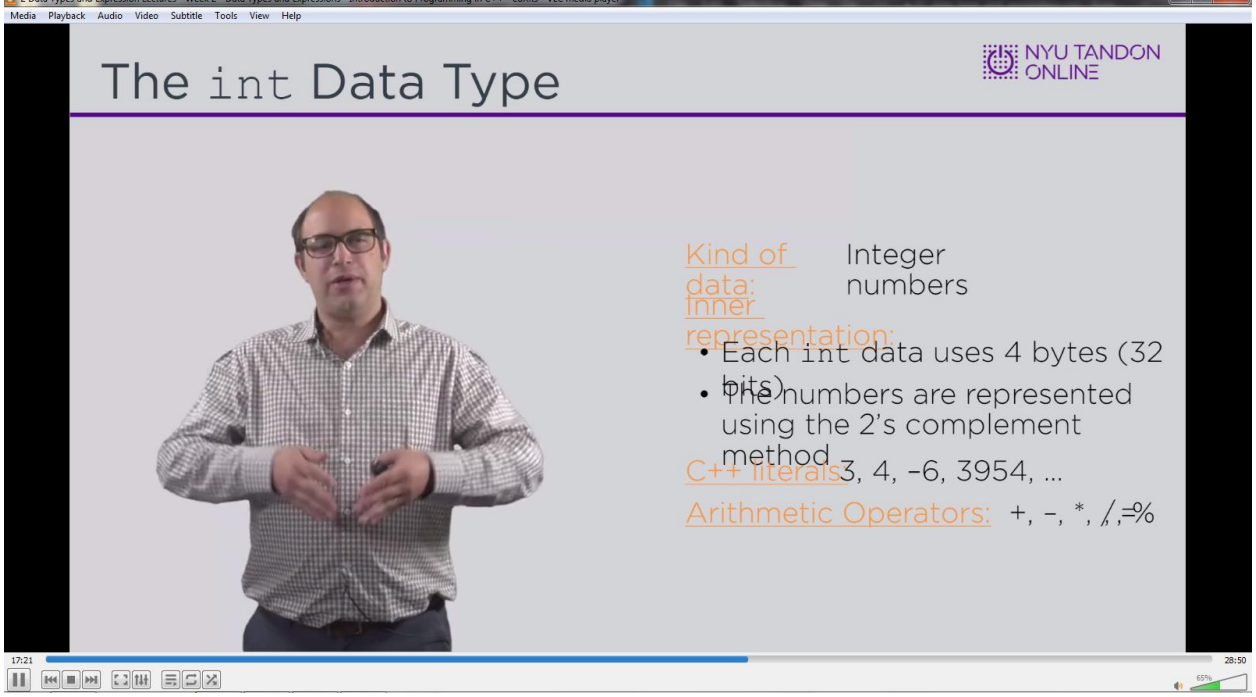
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data: Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
C++ literals: 3, 4, -6, 3954, ...
Arithmetic Operators: +, -, *, /, %
17:04
28:50
8:18 PM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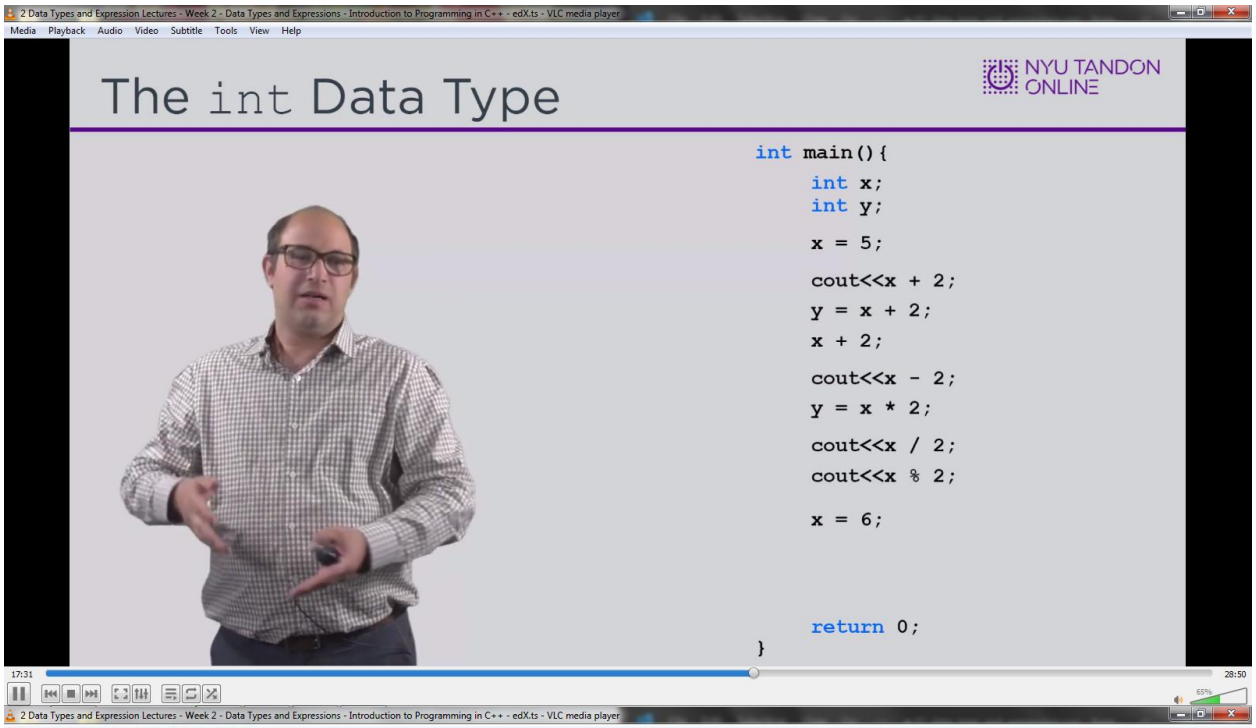
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
Kind of data: Integer numbers
Inner representation:
• Each int data uses 4 bytes (32 bits)
• The numbers are represented using the 2's complement method
C++ literals: 3, 4, -6, 3954, ...
Arithmetic Operators: +, -, *, /, %
17:21
28:50
65%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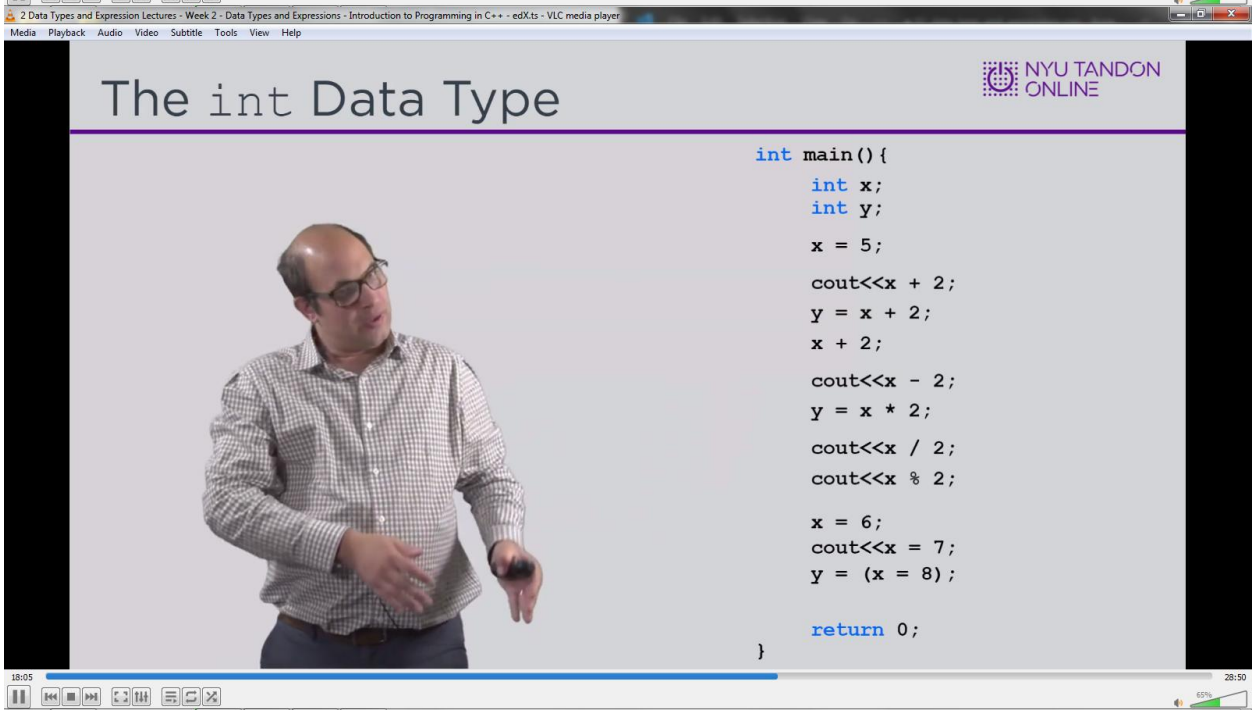
Media Playback Audio Video Subtitle Tools View Help
The int Data Type
NYU TANDON ONLINE
int main(){
int x;
int y;
x = 5;
cout<<x + 2;
y = x + 2;
x + 2;
cout<<x - 2;
y = x * 2;
cout<<x / 2;
cout<<x % 2;
x = 6;
return 0;
}
17:31
28:50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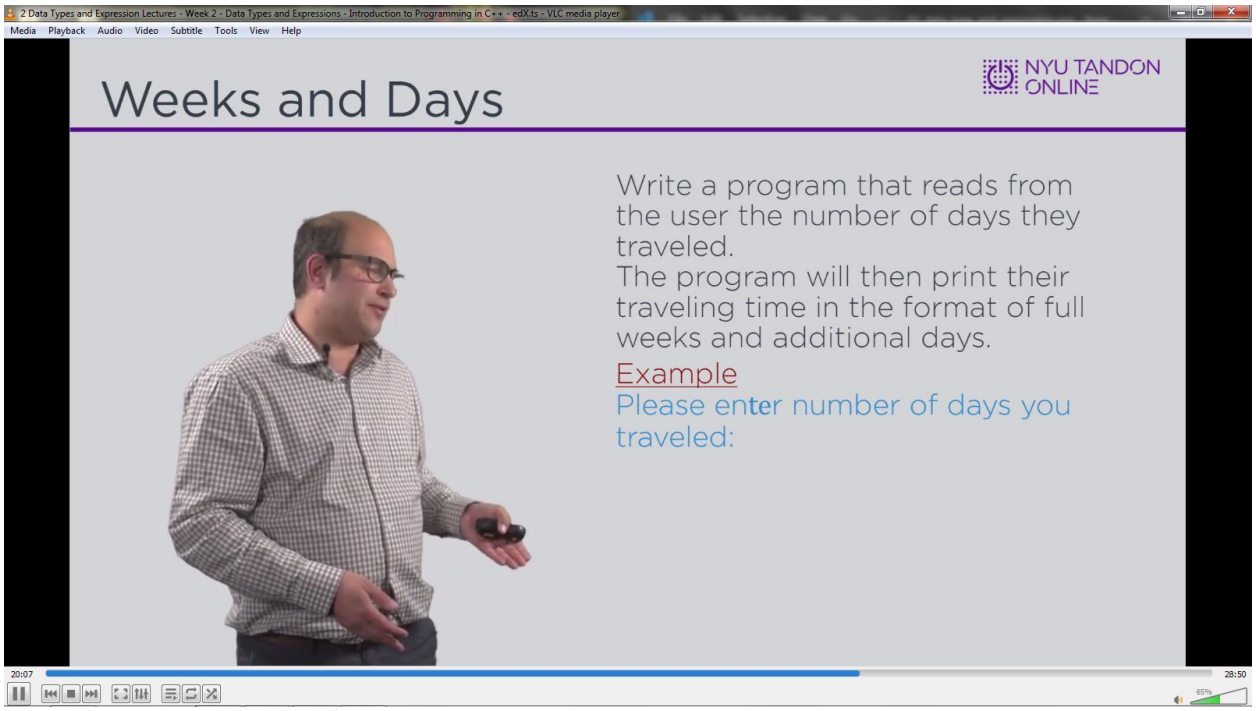
The int Data Type
NYU TANDON ONLINE
int main(){
int x;
int y;
x = 5;
cout<<x + 2;
y = x + 2;
x + 2;
cout<<x - 2;
y = x * 2;
cout<<x / 2;
cout<<x % 2;
x = 6;
cout<<x = 7;
y = (x = 8);
return 0;
}
18:05
28:50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Weeks and Days
NYU TANDON ONLINE
Write a program that reads from the user the number of days they traveled.
The program will then print their traveling time in the format of full weeks and additional days.
Example
Please enter number of days you traveled:
20:07
28:50
65%