# Data Types and Expressions

Module 2 Part 2 Itay Tal



## float and double Data Types



Control Flow



### Data

- int • float
- double

# Expressions

- I/O expressions
  - Sequential
- Arithmetic expressions



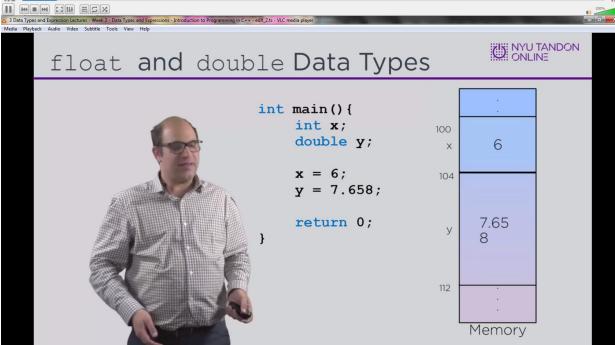




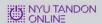
Kind of data: Real numbers (could have fractiona

#### Inner representation:

- double Each data uses 8 bytes (64 bits)
- float Each data uses 4 bytes (32 bits)



### float and double Data Types

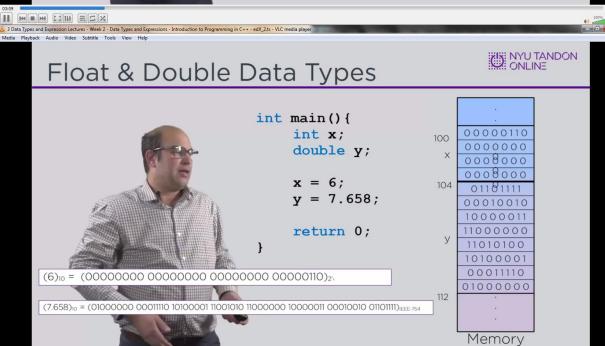




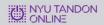
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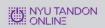
For double: 3.4, -8.975, 6.0, ... For float: 3.4f, -8.975f, ...



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Arithmetic Operators: +, -, \*, /, =, ...







Write a program that reads from the user a radius of a circle.

The program will then print area of this circle.

### Example

Please enter the radius: 2.6

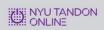
The area of a circle with radius of 2.6 is 21 2372



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### Area of a Circle

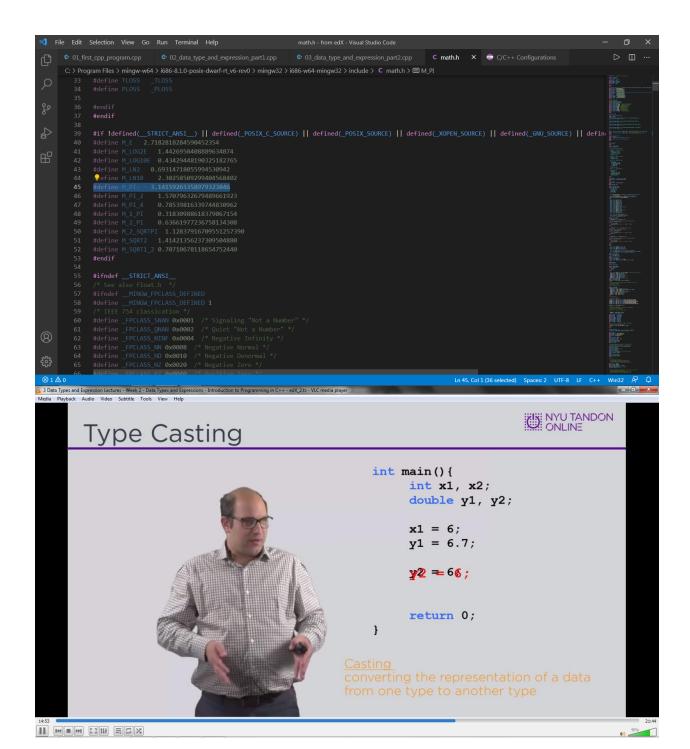




### Theorem:

Let  ${\bf C}$  be a circle with a radius of length  ${\bf r}$ .

We have: (Area of C) =  $\mathbb{P} \cdot \mathbf{r}^2$ 



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# Type Casting

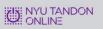


```
int main(){
     int x1, x2;
     double y1, y2;
     x1 = 6;
     y1 = 6.7;
     y2 = (double) 6;
     return 0;
```

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# Type Casting





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