

Lecture 65

Java – Methods [Customized Method]

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| Coding Session

- **public:** which means they can be invoked (or called) from other classes
- **void:** they don't return a result

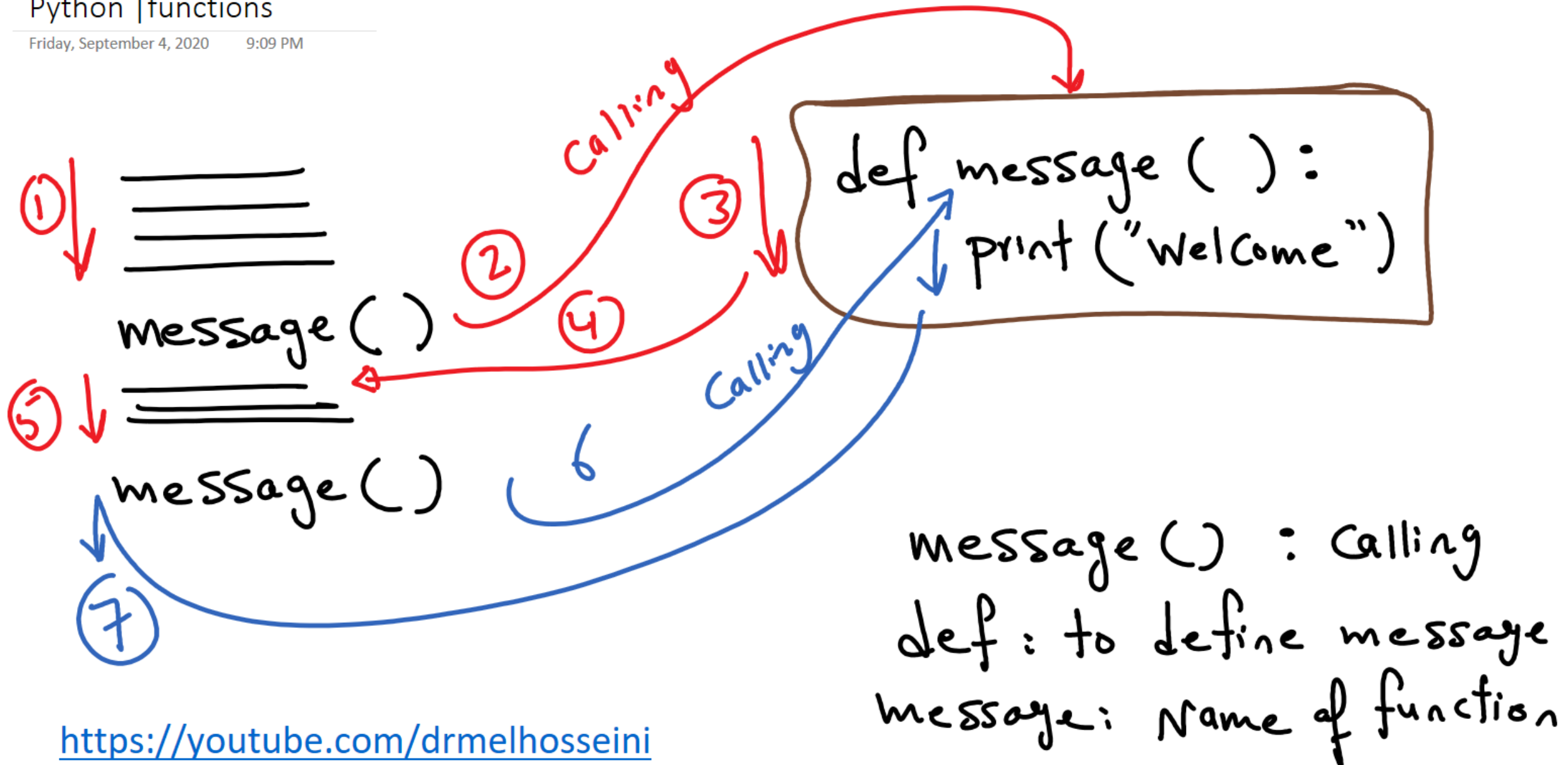
```
public static void newline()  
{  
    System.out.println();  
}
```

```
public static void main(String[] args) {  
    System.out.println("First Line... ");  
    newline();  
    System.out.println("Second Line... ");  
}
```

Python | functions

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9:09 PM



| Parameters and Arguments

- Some of the methods we have used require **arguments**, which are the **values you provide in parentheses when you invoke** the method
 - **println** method takes a String argument
 - `System.out.printf("%d in = %f cmn", inch, cm)`

| Parameters and Arguments

- When you **invoke a method**, you **provide the arguments**.
- When you **define a method**, you **name the parameters**, which are variables that indicate what arguments are required

```
public static void printname(String s)
{
    System.out.println(s);
}
```

```
public static void main(String[] args) {
    printname("Mostafa Elhosseini");
}
```

| Method Arguments

- Mathematical Methods **usually take one argument**, e.g., $\sin(x)$ takes an **x**, which is the measure of an angle.
 - **May accept any number** of arguments
 - Any number includes **zero** - some java Methods **don't need any argument**
 - java Methods strongly demand the presence of a **pair of parentheses** - opening and closing ones, respectively

| Method Arguments

- Before the method executes, the argument gets assigned to the parameter
- This process is called **parameter passing**, because the value gets passed from outside the method to the inside
- The **value you provide as an argument** must have the **same** (or **compatible**) type as the **parameter**
- Sometimes Java can convert an argument from one type to another automatically

| Method Arguments

- Parameters and other variables exist only inside their own methods
- Because variables exist only inside the methods where they are defined, they are often called local variables
- Hint: Arguments and Parameters even have the same name, but each one refer to different memory locations, and they have different values

| References

- Java: How to Program, 9th Edition (Deitel) 9th Edition by Paul Deitel , Harvey M. Deitel
- Head First Java, 2nd Edition 2nd Edition by Kathy Sierra, Bert Bates
- Think Java: How to Think Like a Computer Scientist 1st Edition by Allen B. Downey, Chris Mayfield