



AA 2015-2016

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# **7b. Eccezioni in Java: una visione operazionale**



```
class C {  
    public void via( ) {  
        primo( );  
        System.out.println("siamo al via");  
    }  
  
    public void primo( ) {  
        secondo( );  
        System.out.println("siamo nel primo");  
    }  
  
    public void secondo( ) {  
        throw new Exception( );  
        System.out.println("siamo nel secondo");  
    }  
}
```

Cosa succede con (new C( )).via( );?

# Abstract Stack Machine



Workspace

```
(new C()).via();
```

Stack

Heap

# Abstract Stack Machine



Workspace

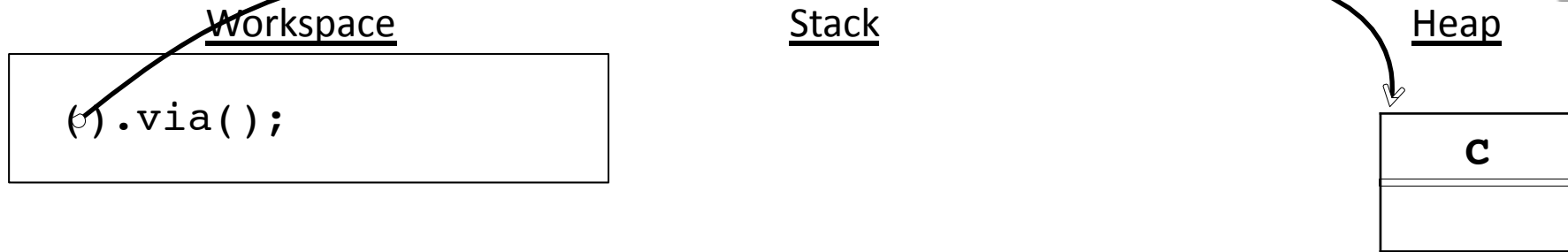
Stack

Heap

```
(new C()).via();
```

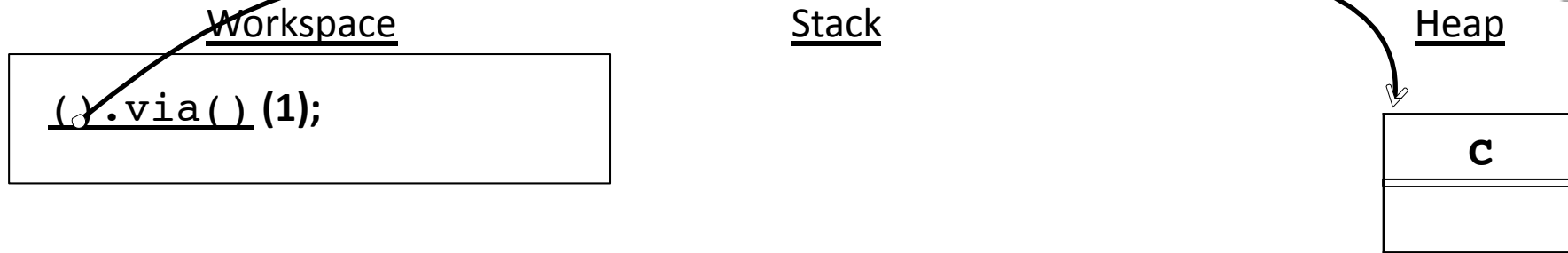


# Abstract Stack Machine



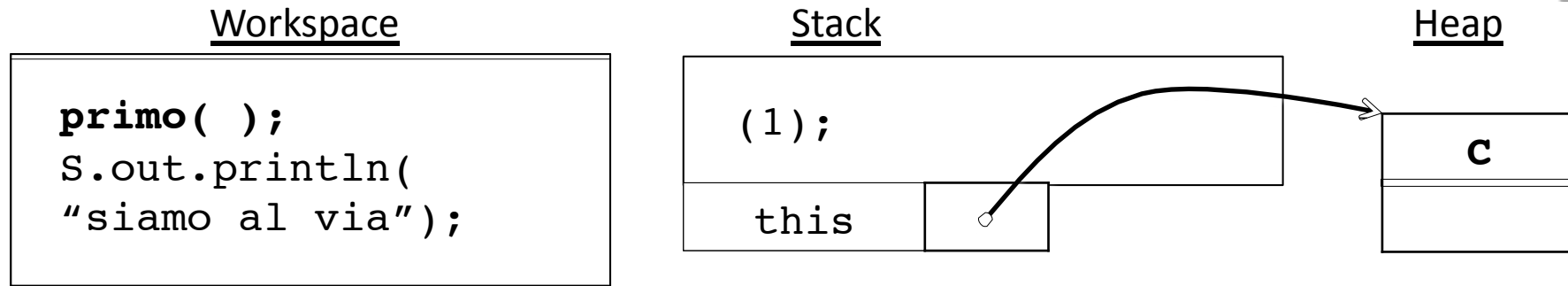
**Allocata una istanza della classe C sullo heap**

# Abstract Stack Machine



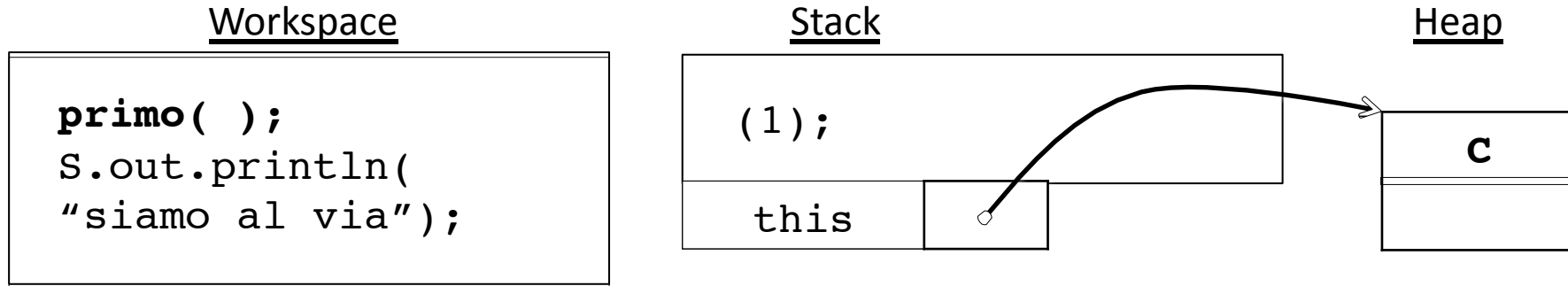


# Abstract Stack Machine



Viene salvato sullo stack la **continuazione** (cosa eseguire) dopo aver invocato “via”  
Viene salvato sullo stack anche il valore corrente di this

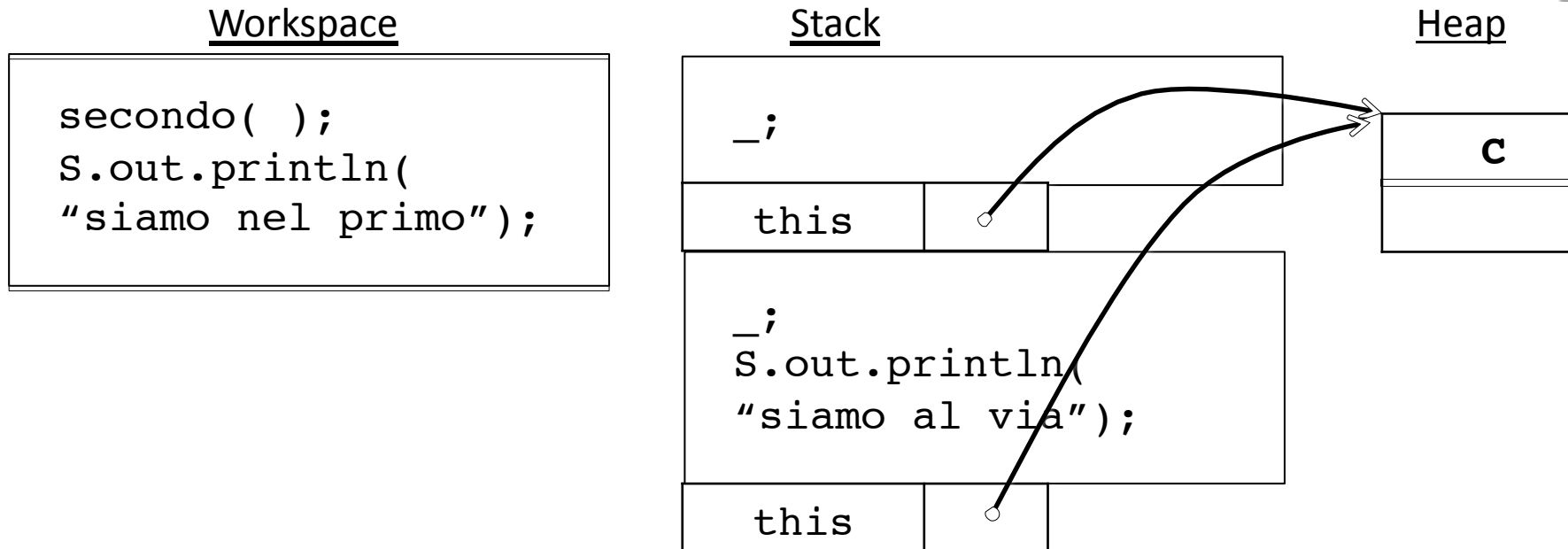
# Abstract Stack Machine





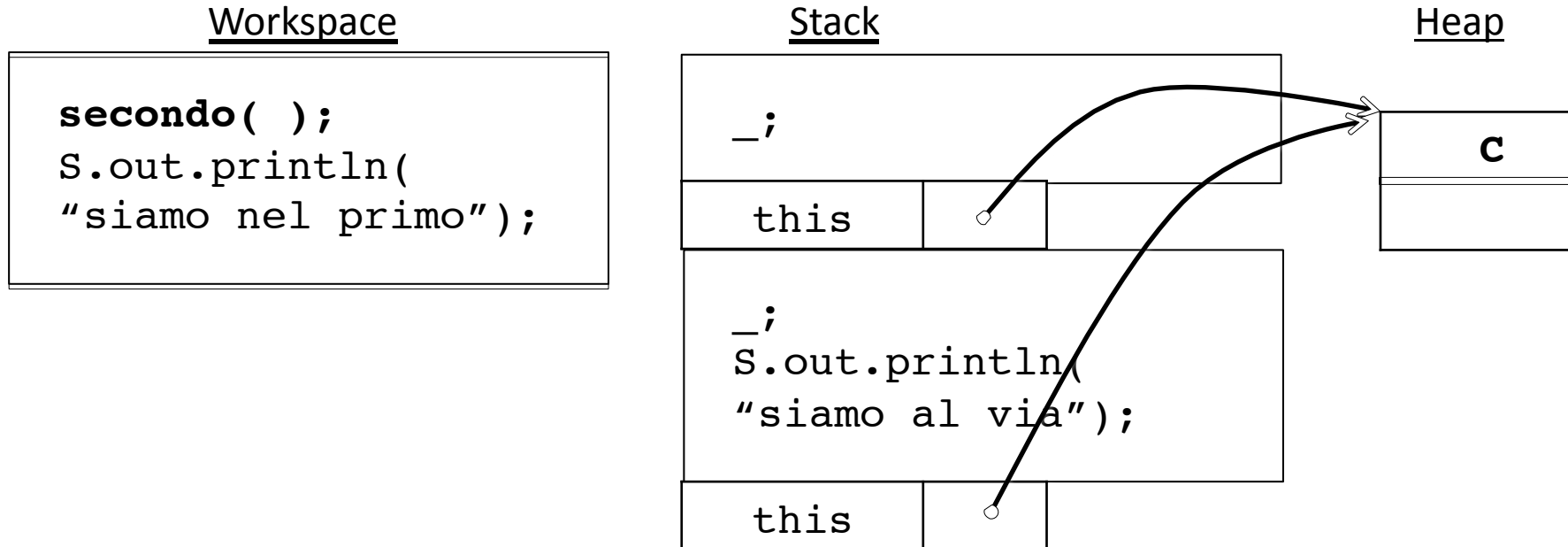


# Abstract Stack Machine



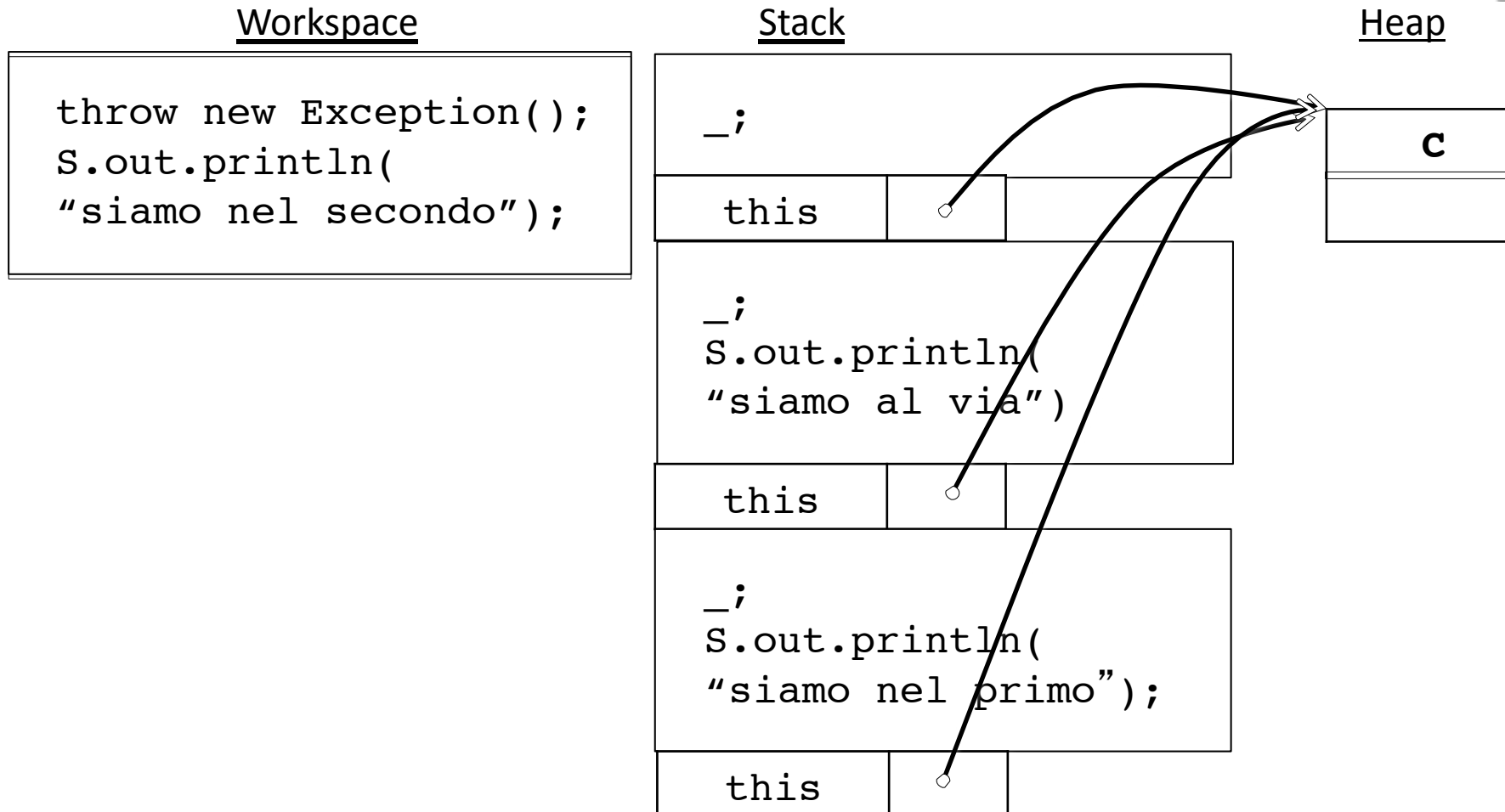


# Abstract Stack Machine



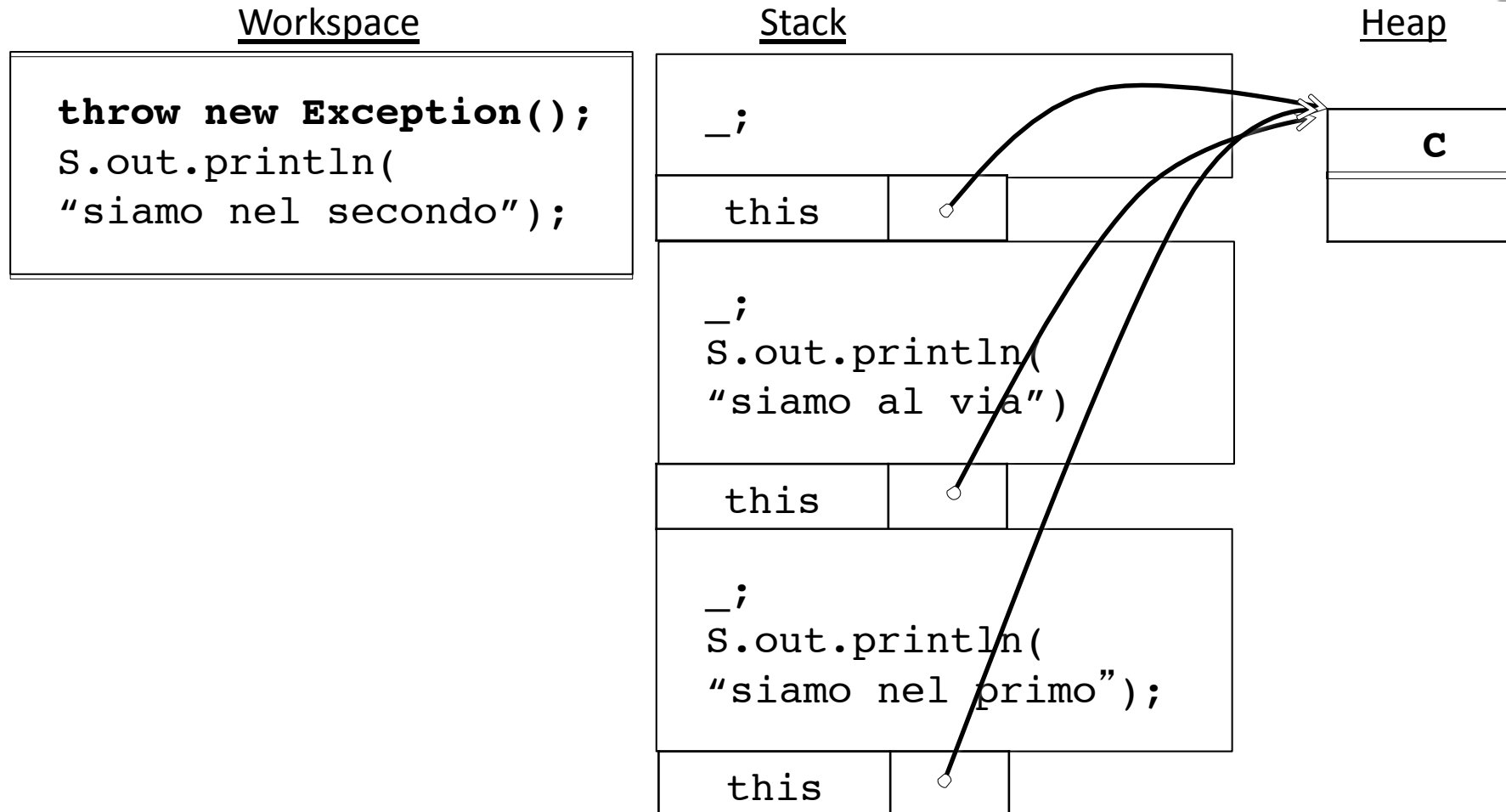


# Abstract Stack Machine



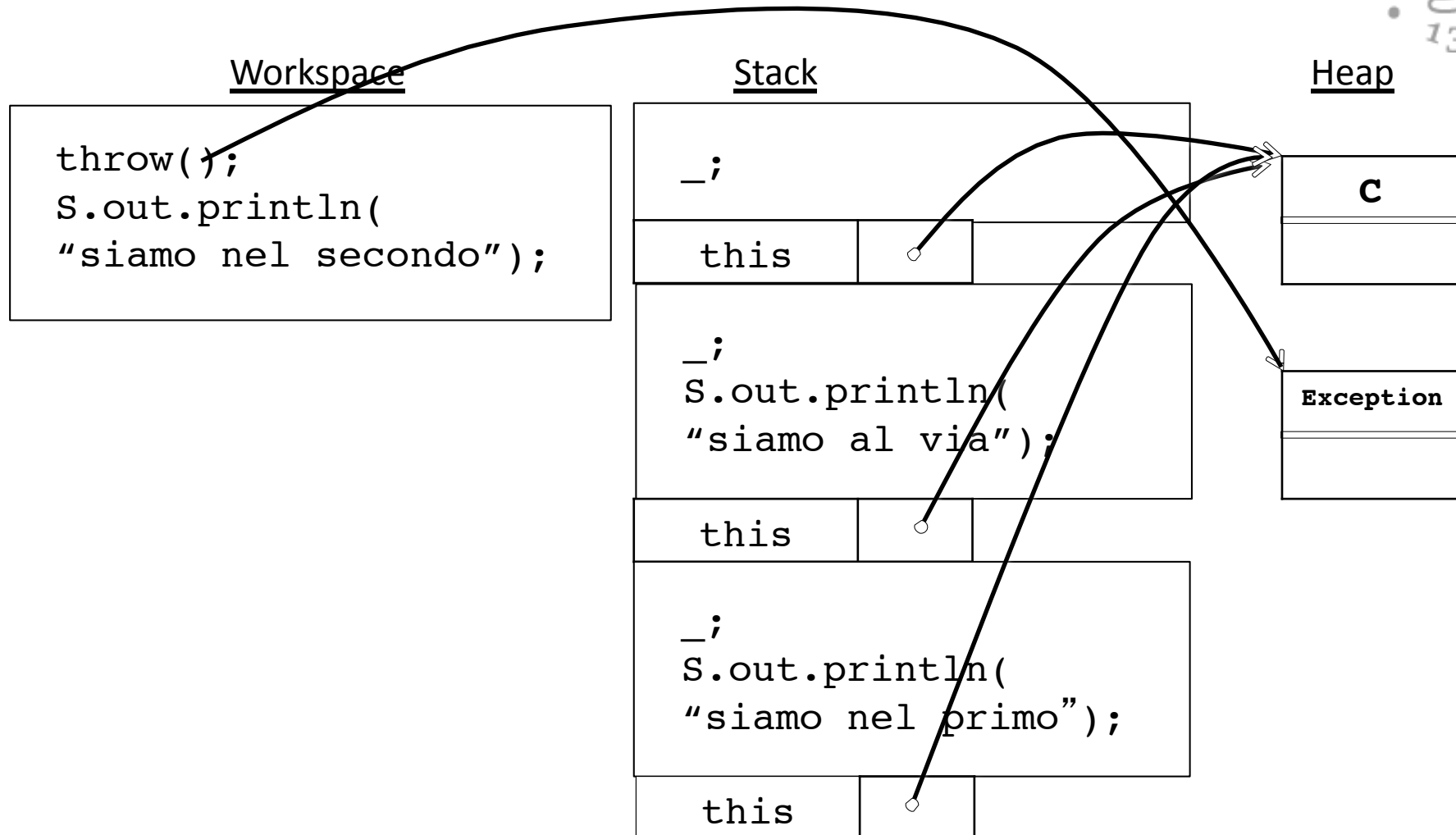


# Abstract Stack Machine



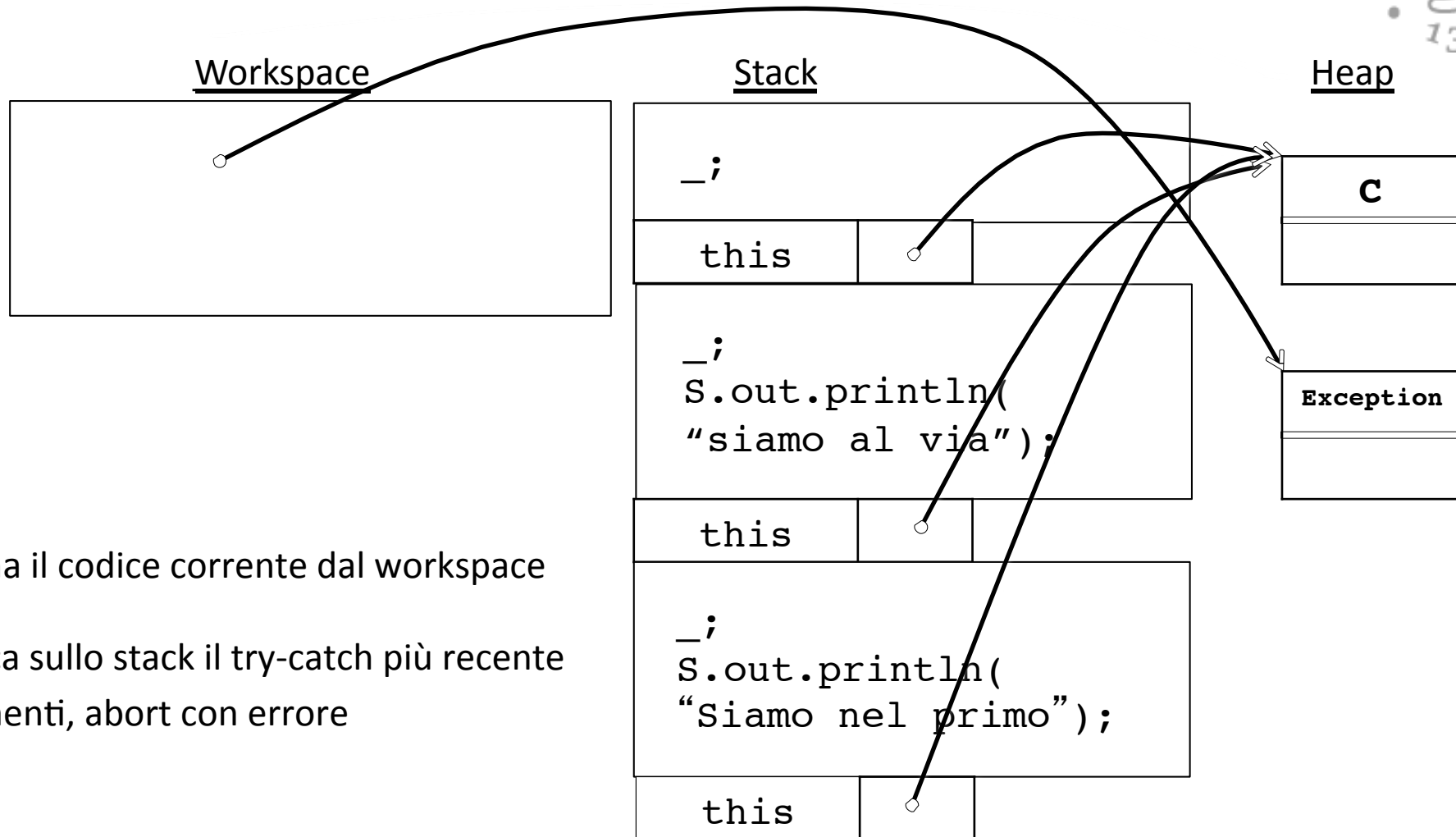


# Abstract Stack Machine





# Abstract Stack Machine



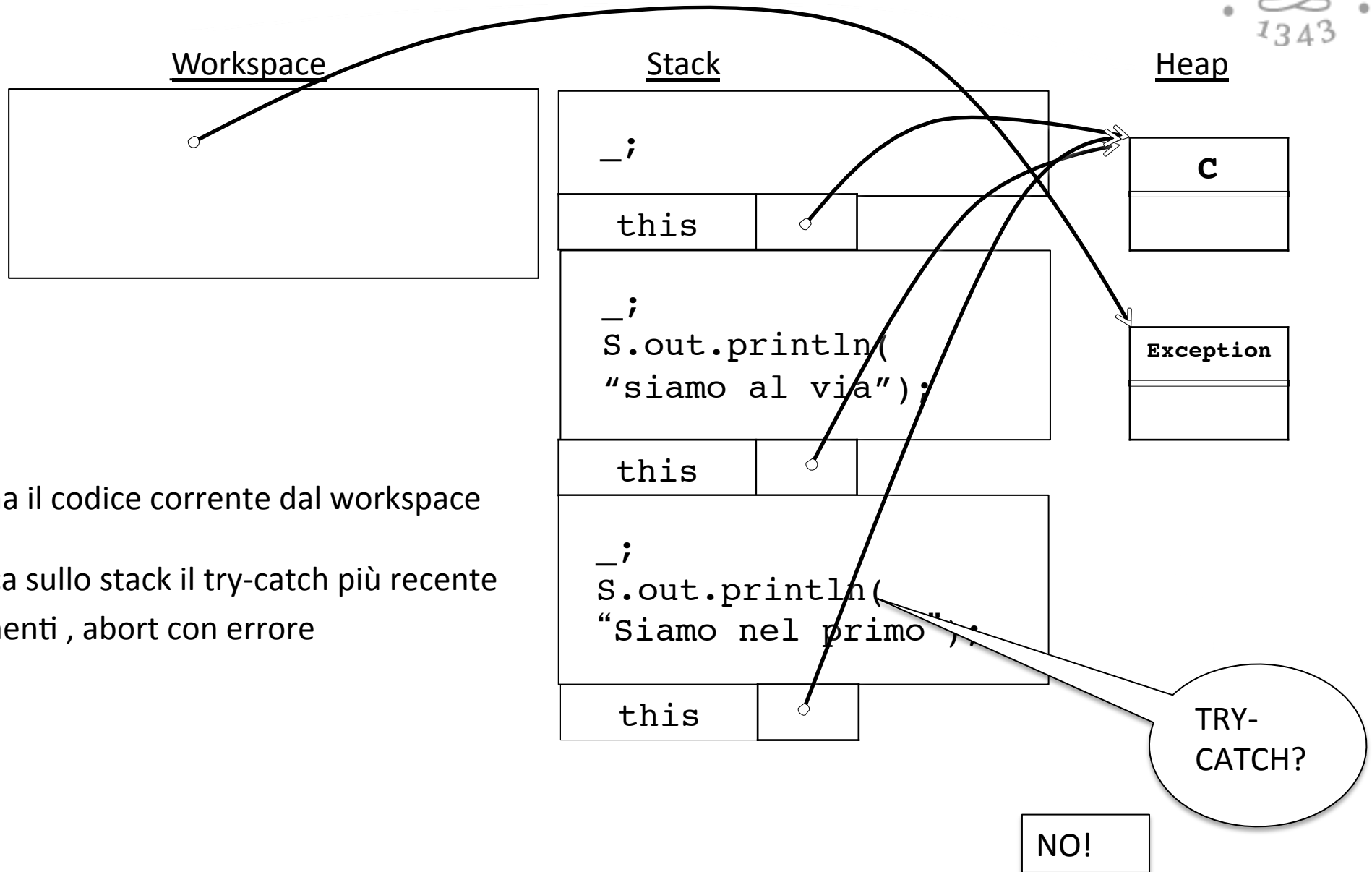
Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti, abort con errore

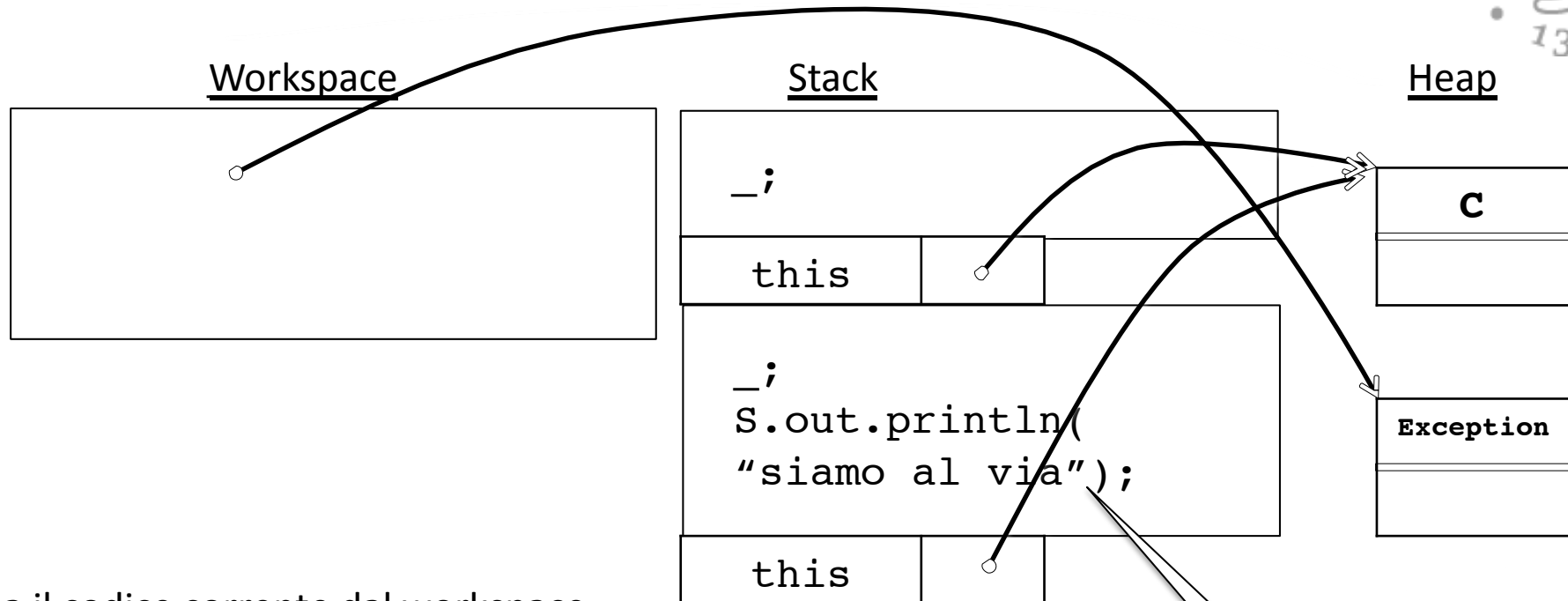


# Abstract Stack Machine





# Abstract Stack Machine



Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti , abort con errore

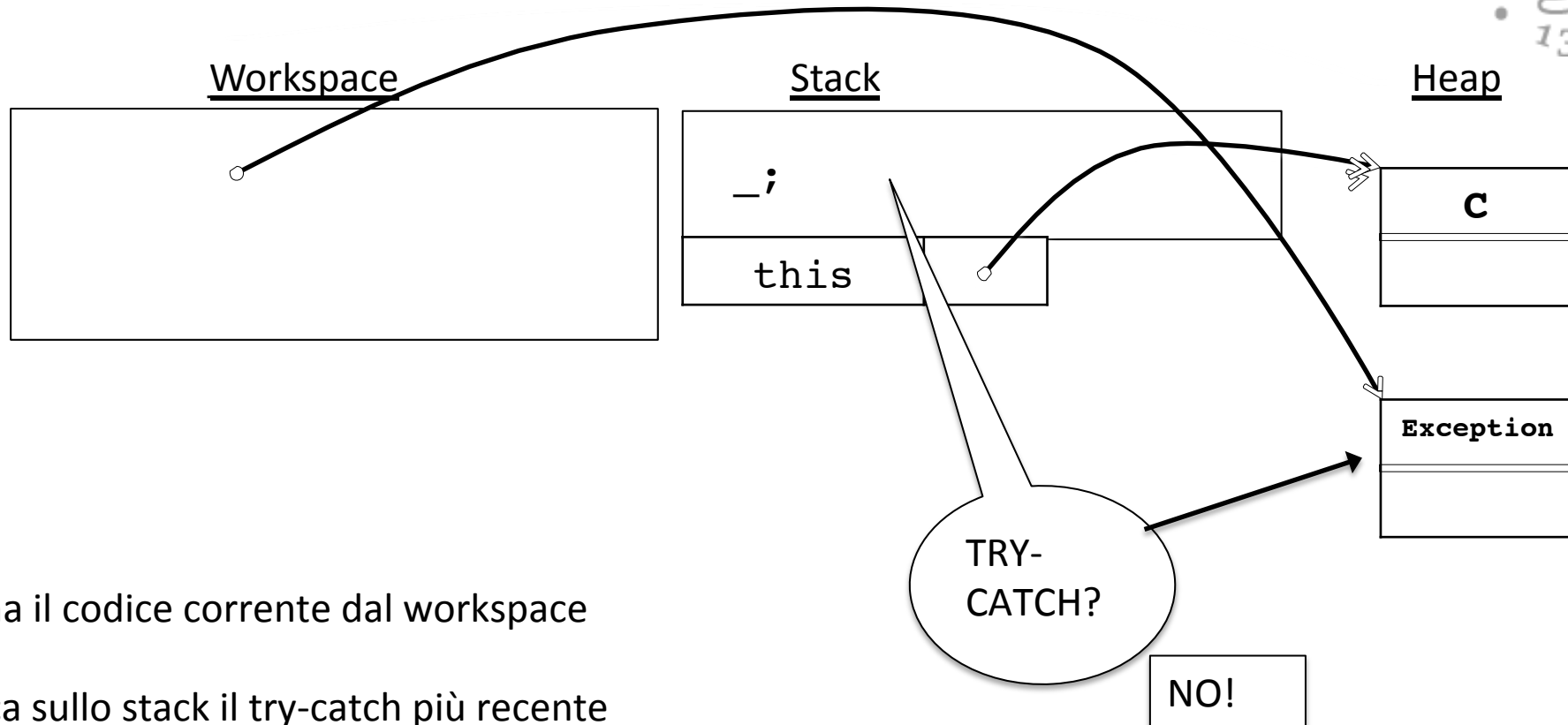
TRY-CATCH?

NO!





# Abstract Stack Machine



Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti , abort con errore

# Abstract Stack Machine



Workspace

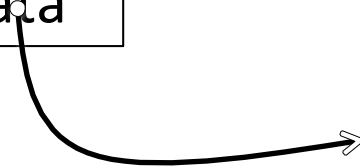
Stack

Heap

Programma terminato  
Eccezione non catturata

<b>C</b>

<b>Exception</b>



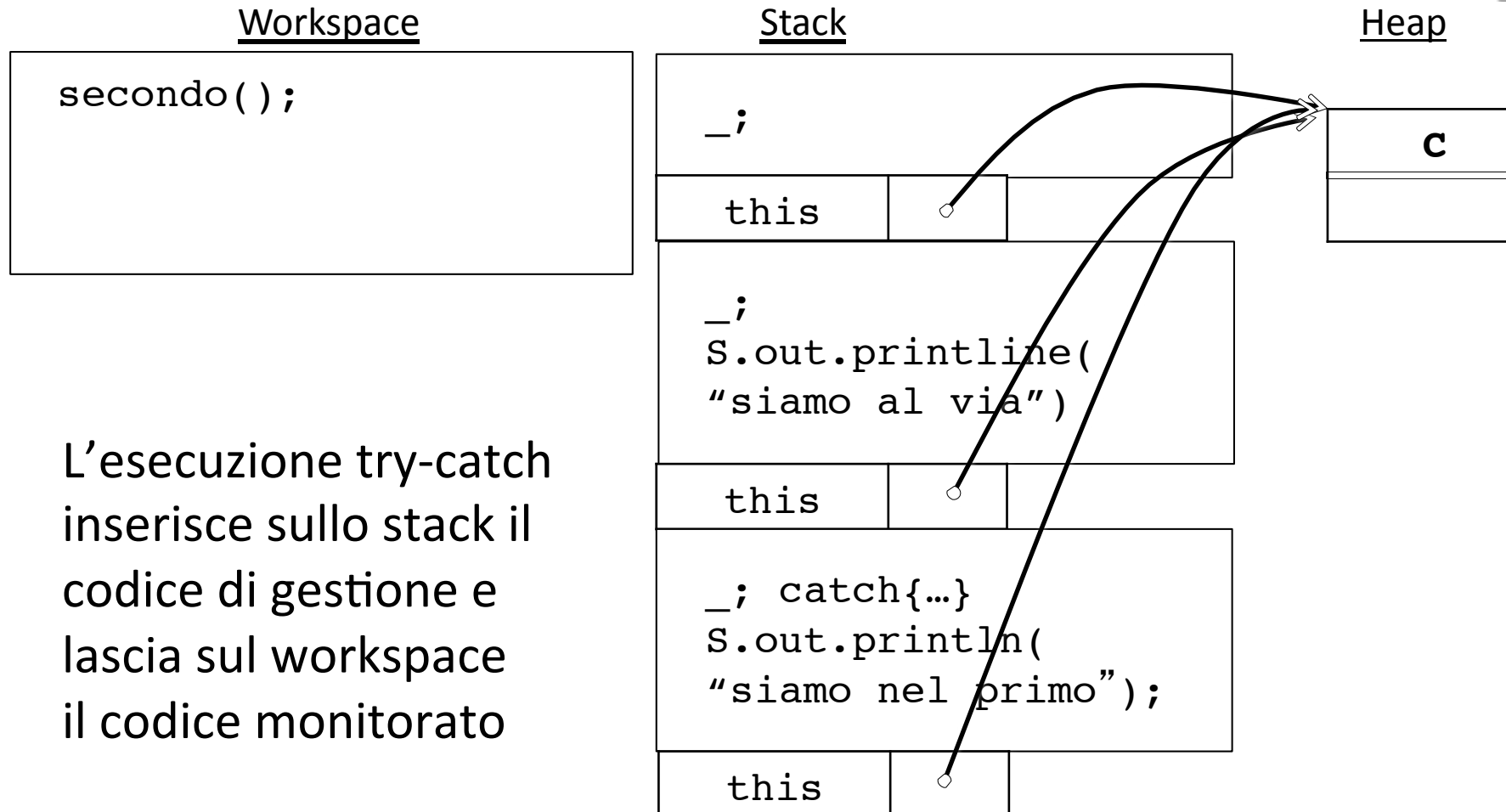


```
class C {  
    public void via( ) {  
        primo( );  
        System.out.println(" siamo al via");  
    }  
  
    public void primo( ) {  
        try { secondo( ); }  
        catch (Exception e) { System.out.println("catturata"); }  
        System.out.println("siamo nel primo");  
    }  
  
    public void secondo( ) {  
        throw new Exception( );  
        System.out.println("siamo nel secondo");  
    }  
}
```

Cosa succede con (new C( )).via( );?



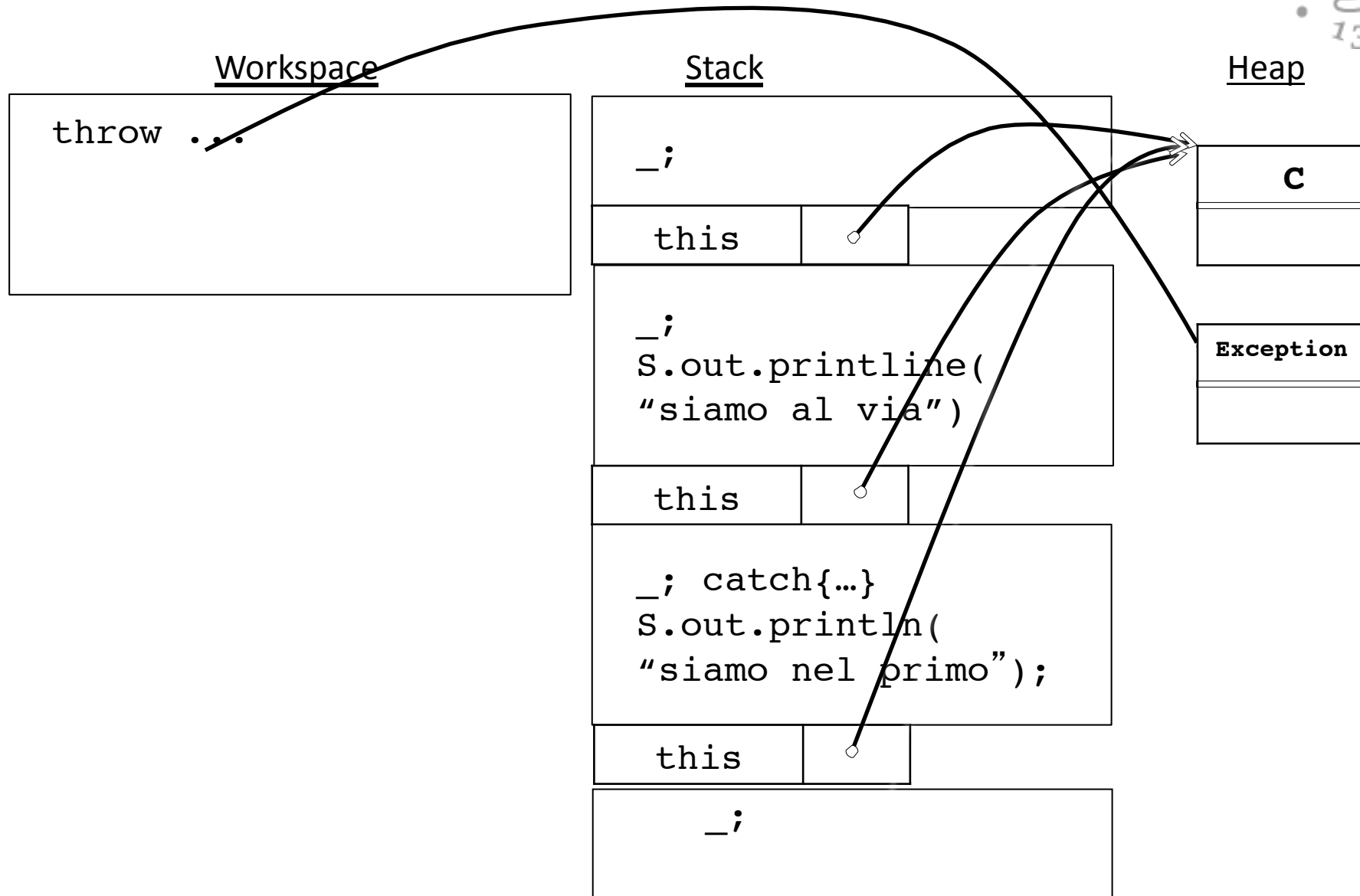
# Abstract Stack Machine



L'esecuzione try-catch inserisce sullo stack il codice di gestione e lascia sul workspace il codice monitorato

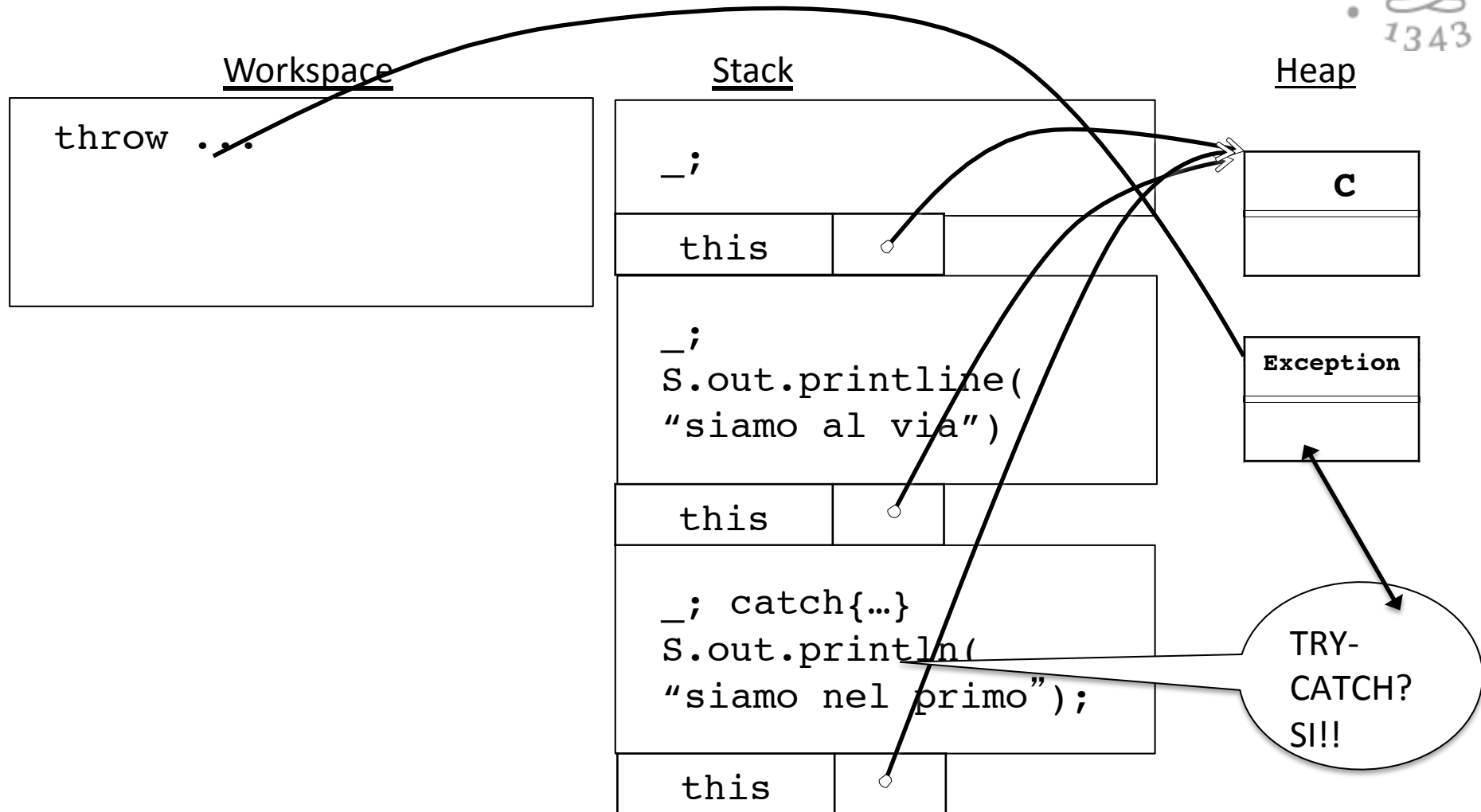


# Abstract Stack Machine



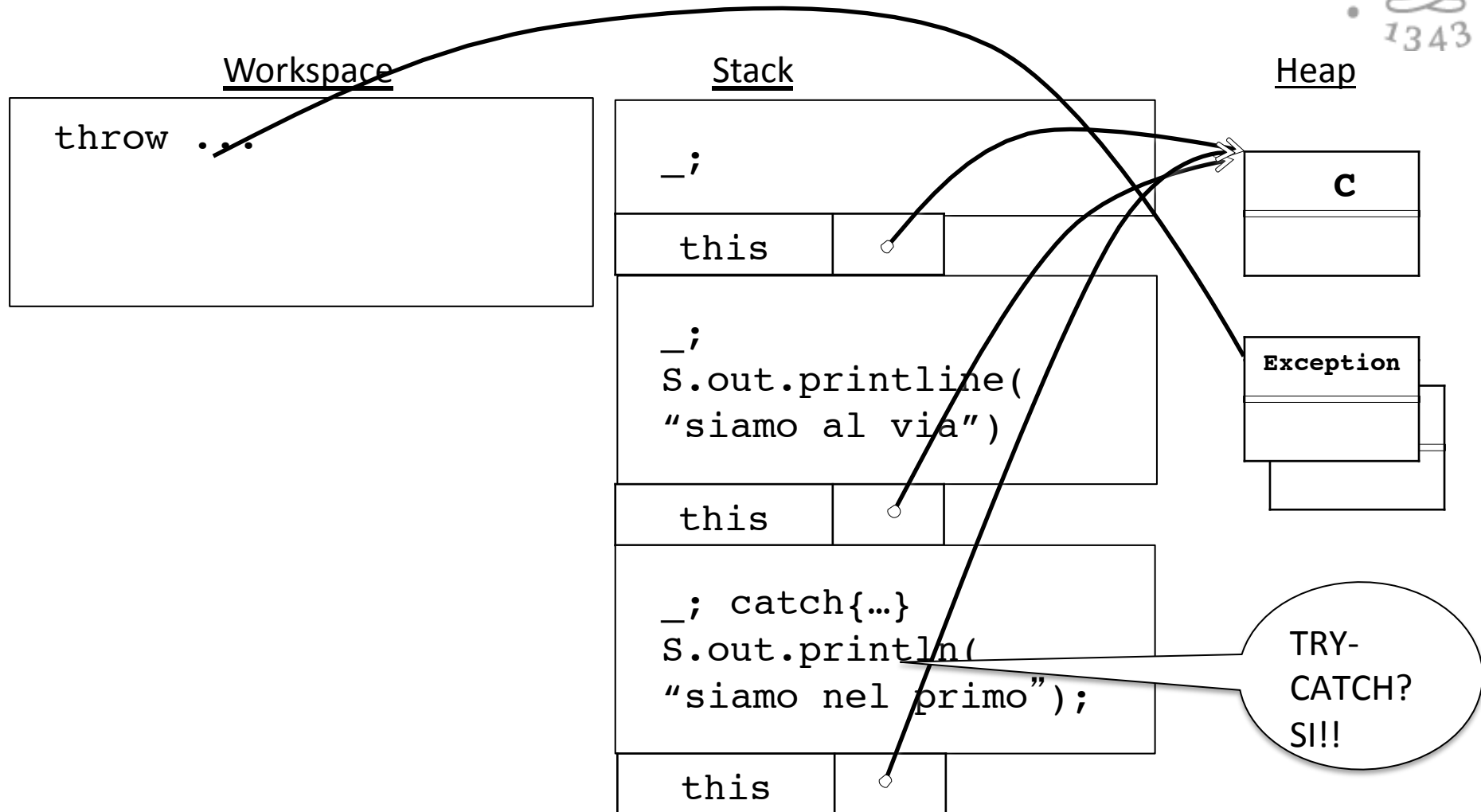


# Abstract Stack Machine





# Abstract Stack Machine





# Abstract Stack Machine

