AA 2014-2015

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

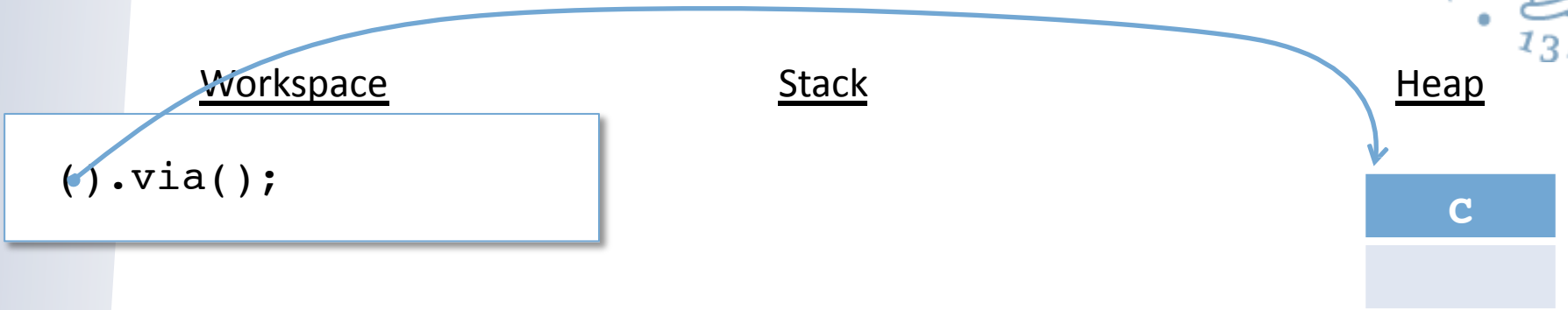
Heap

Abstract Stack Machine

Workspace | Stack | Heap

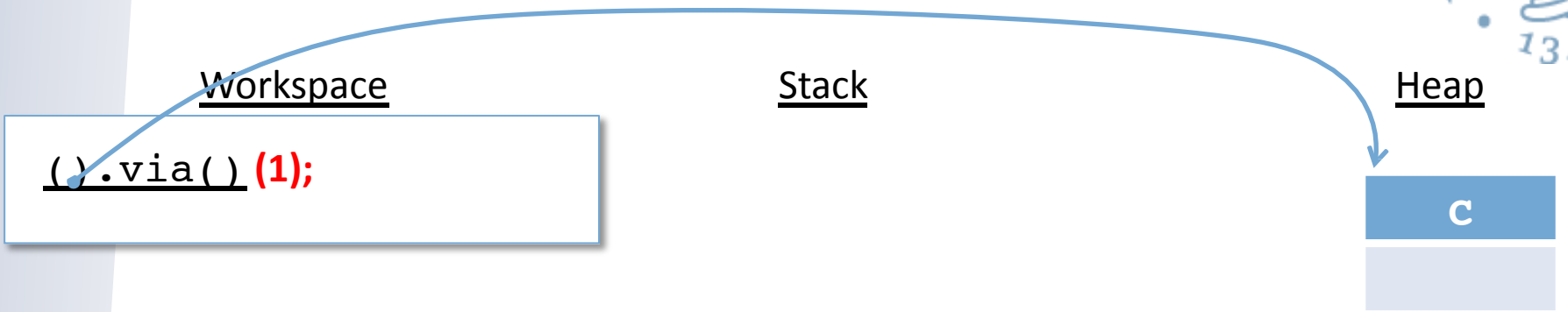
```
(new C()).via();
```

Abstract Stack Machine

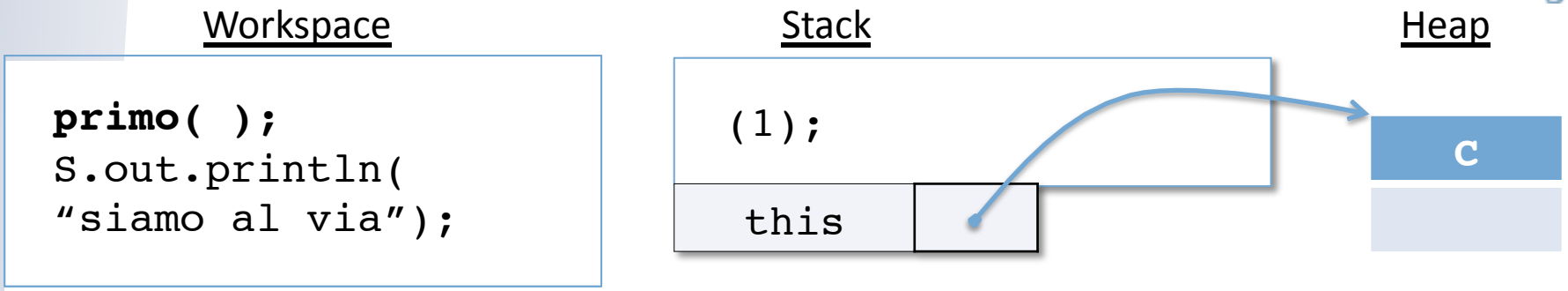


Allocata una istanza della classe C sullo heap

Abstract Stack Machine

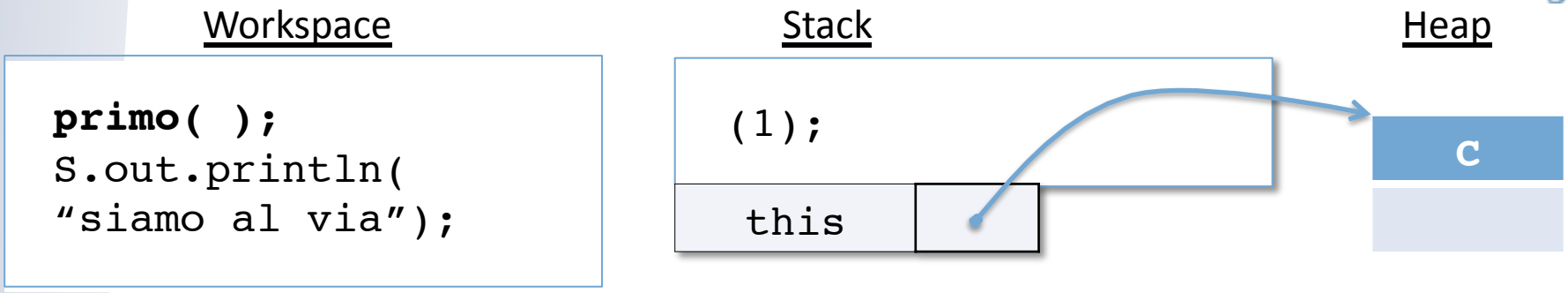


Abstract Stack Machine

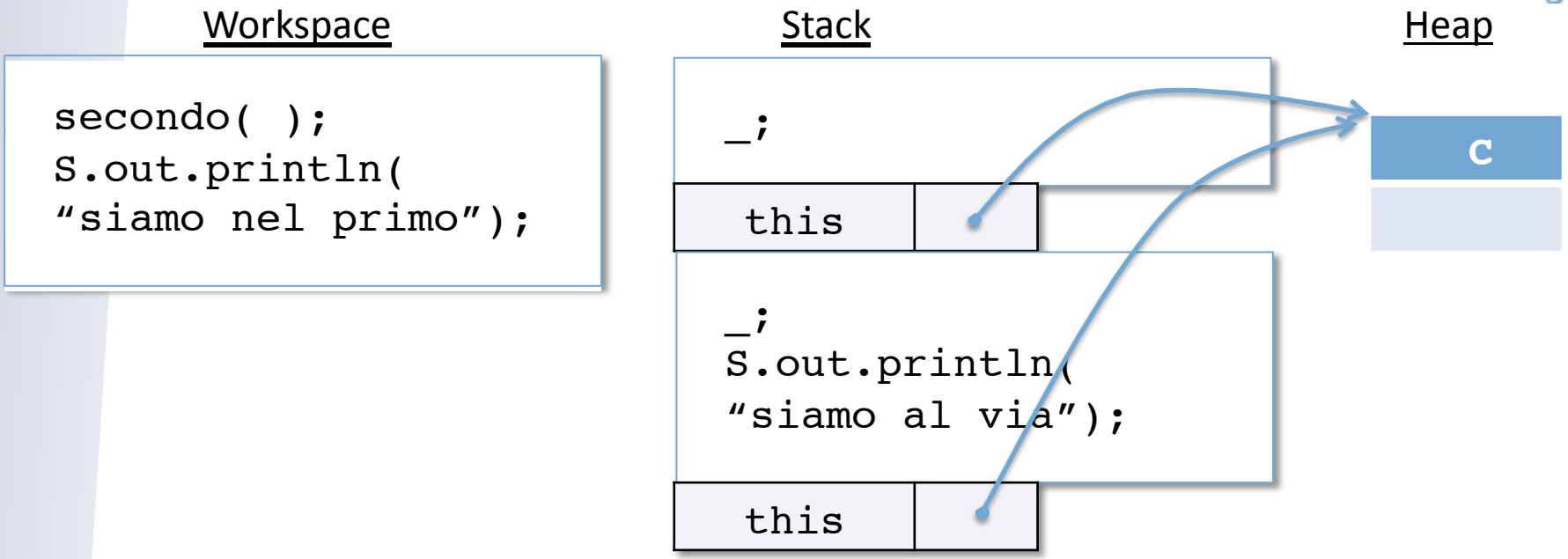


Viene salvato sullo stack la **continuazione** (cosa eseguire) dopo aver invocato “via”
Viene salvato sullo stack anche il valore corrente di this

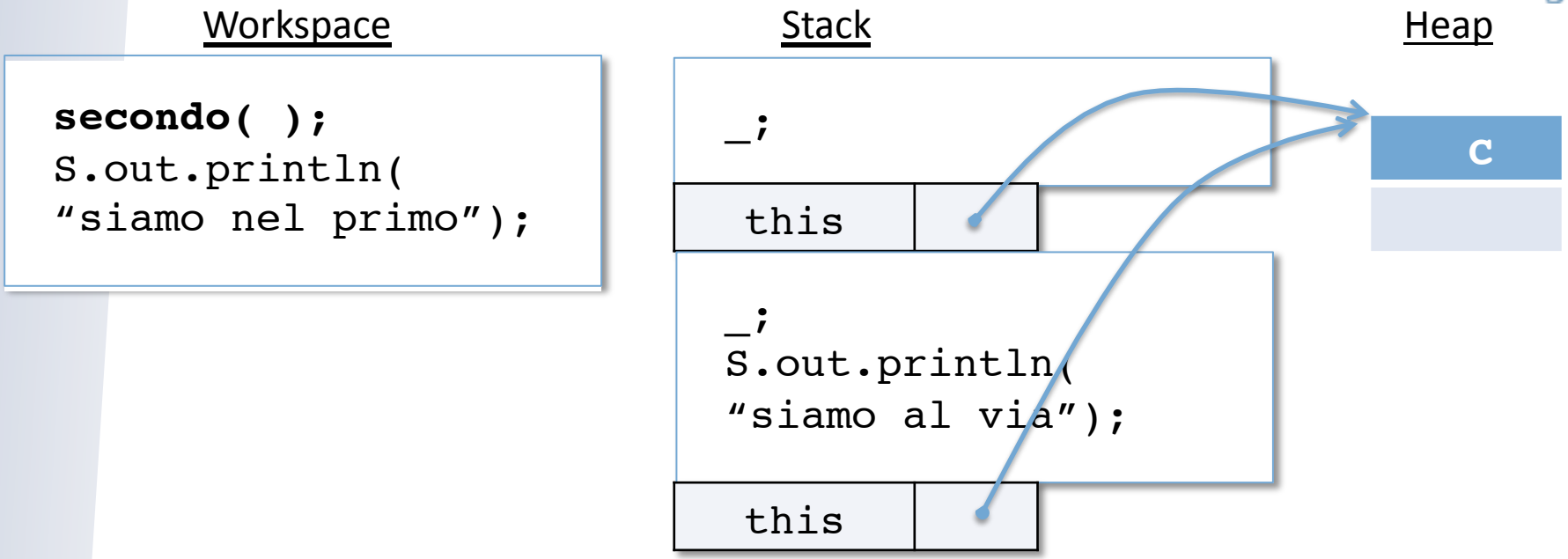
Abstract Stack Machine



Abstract Stack Machine



Abstract Stack Machine



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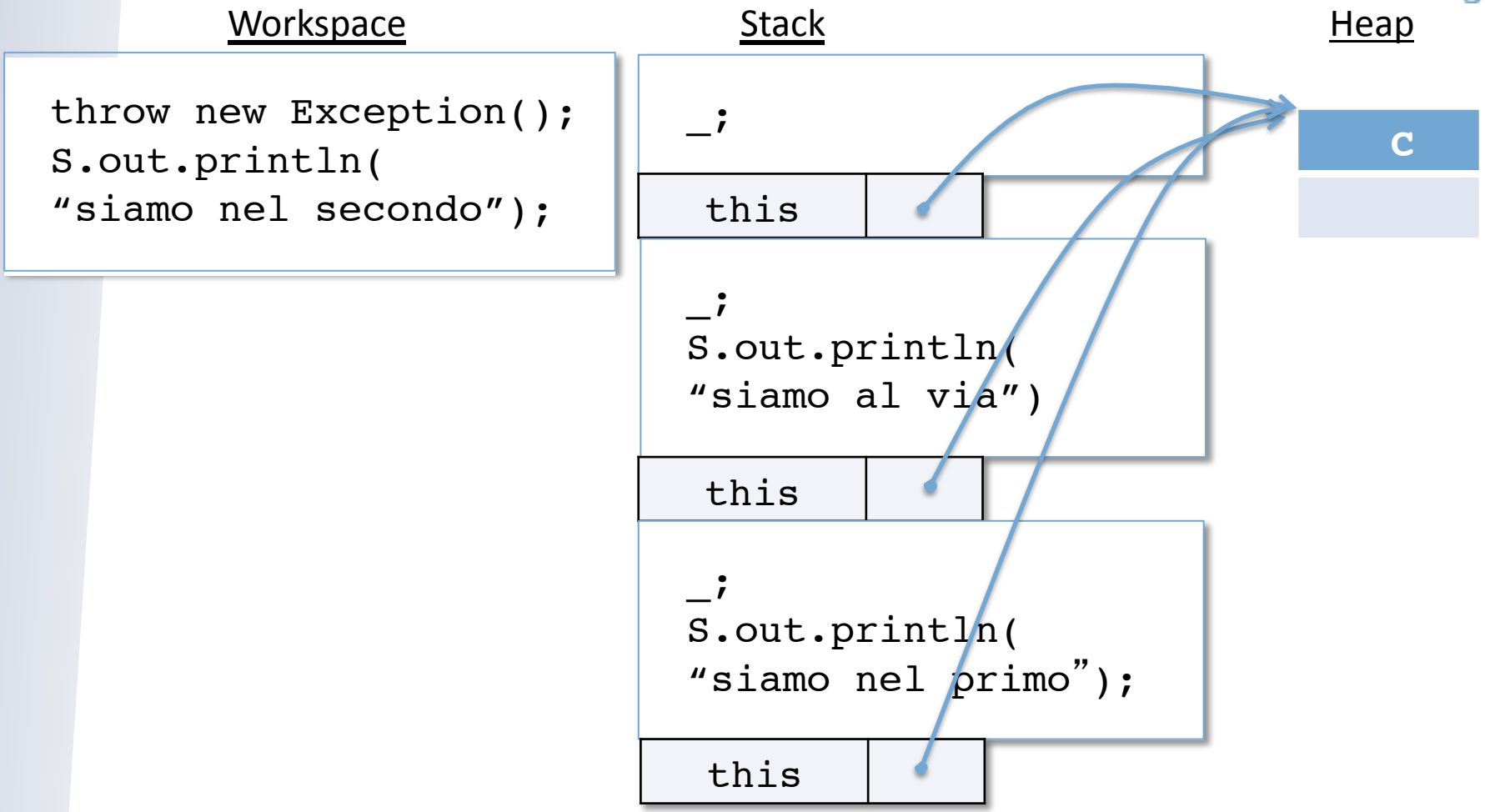
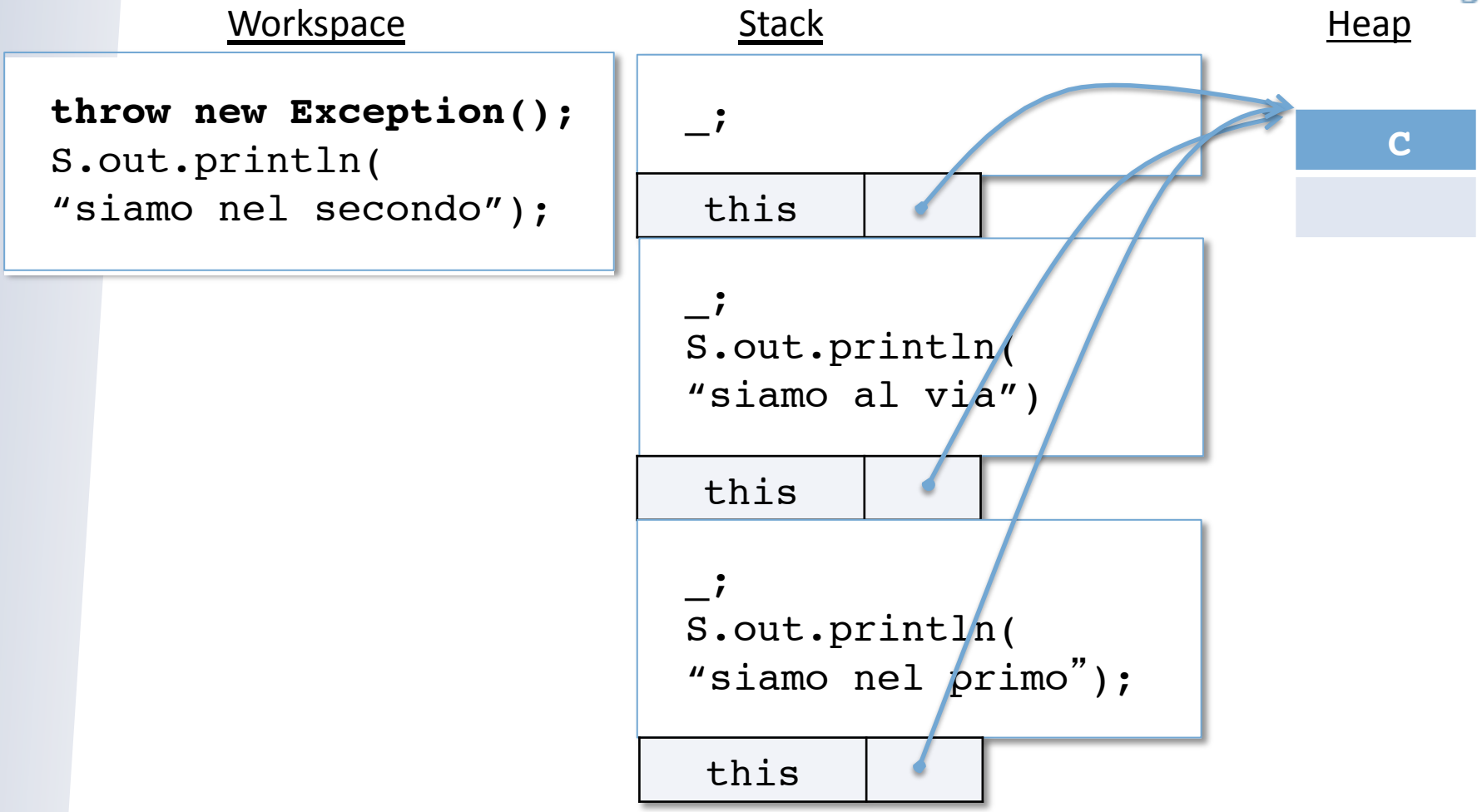
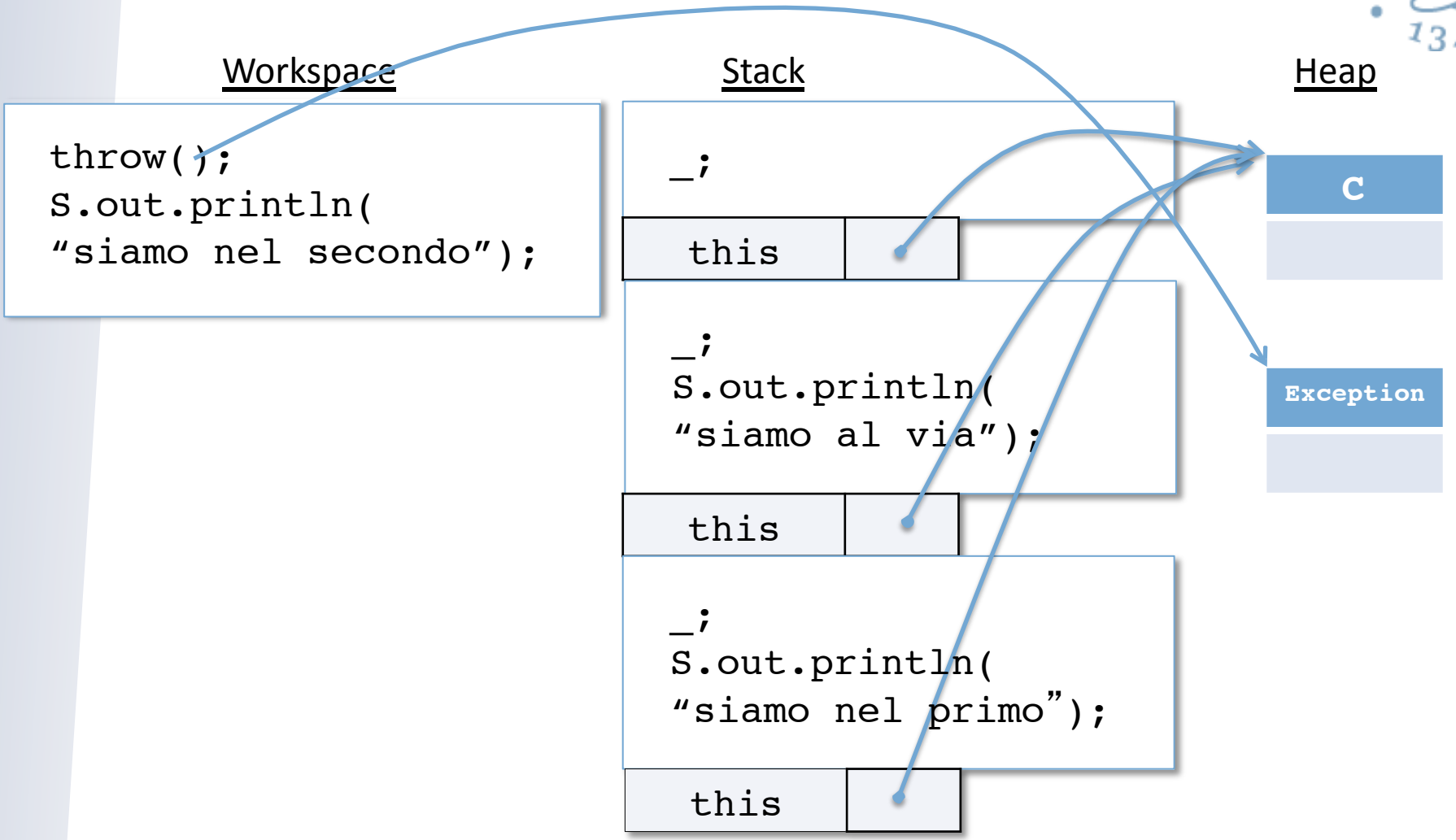


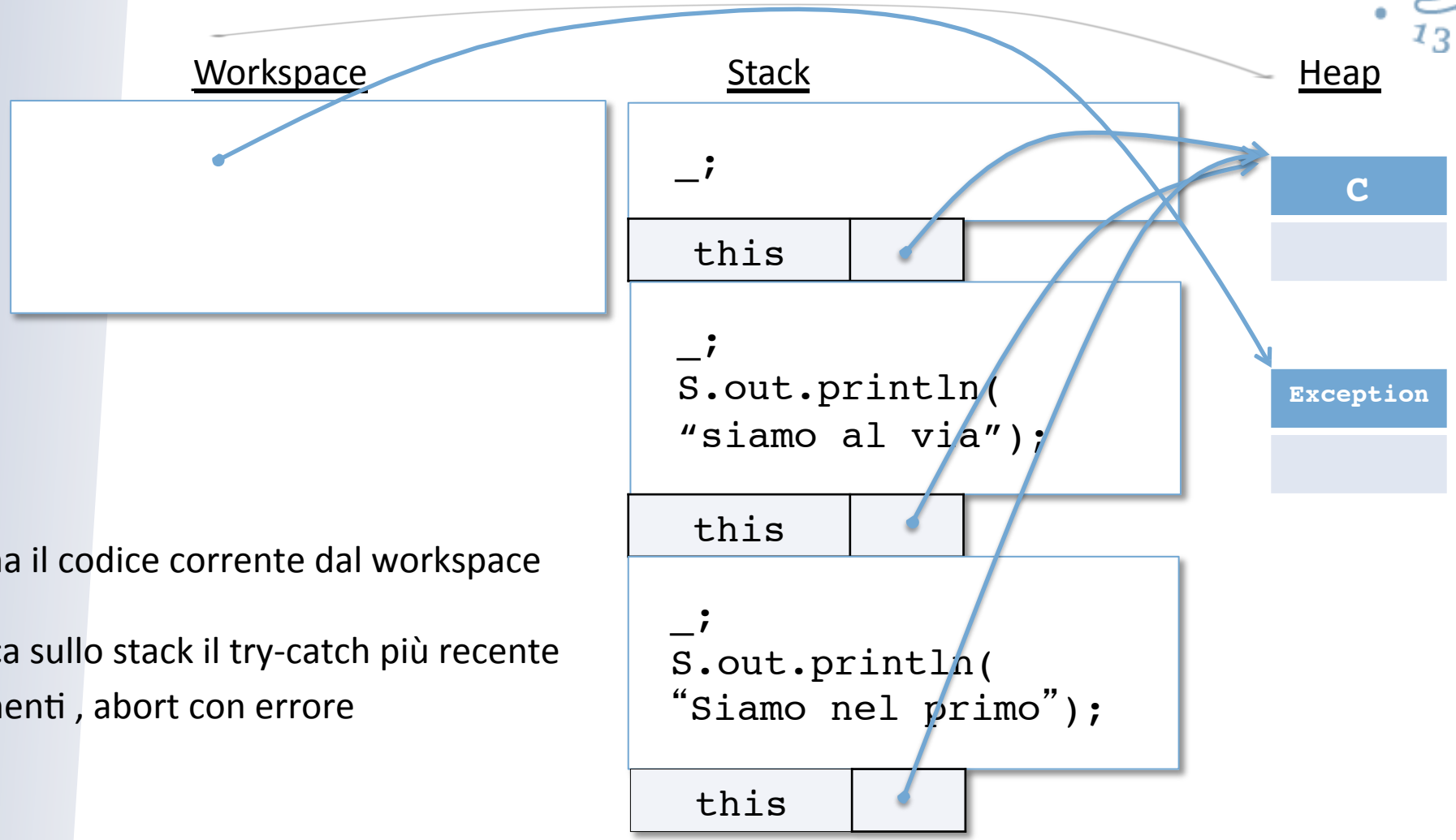
Abstract Stack Machine



Abstract Stack Machine



Abstract Stack Machine

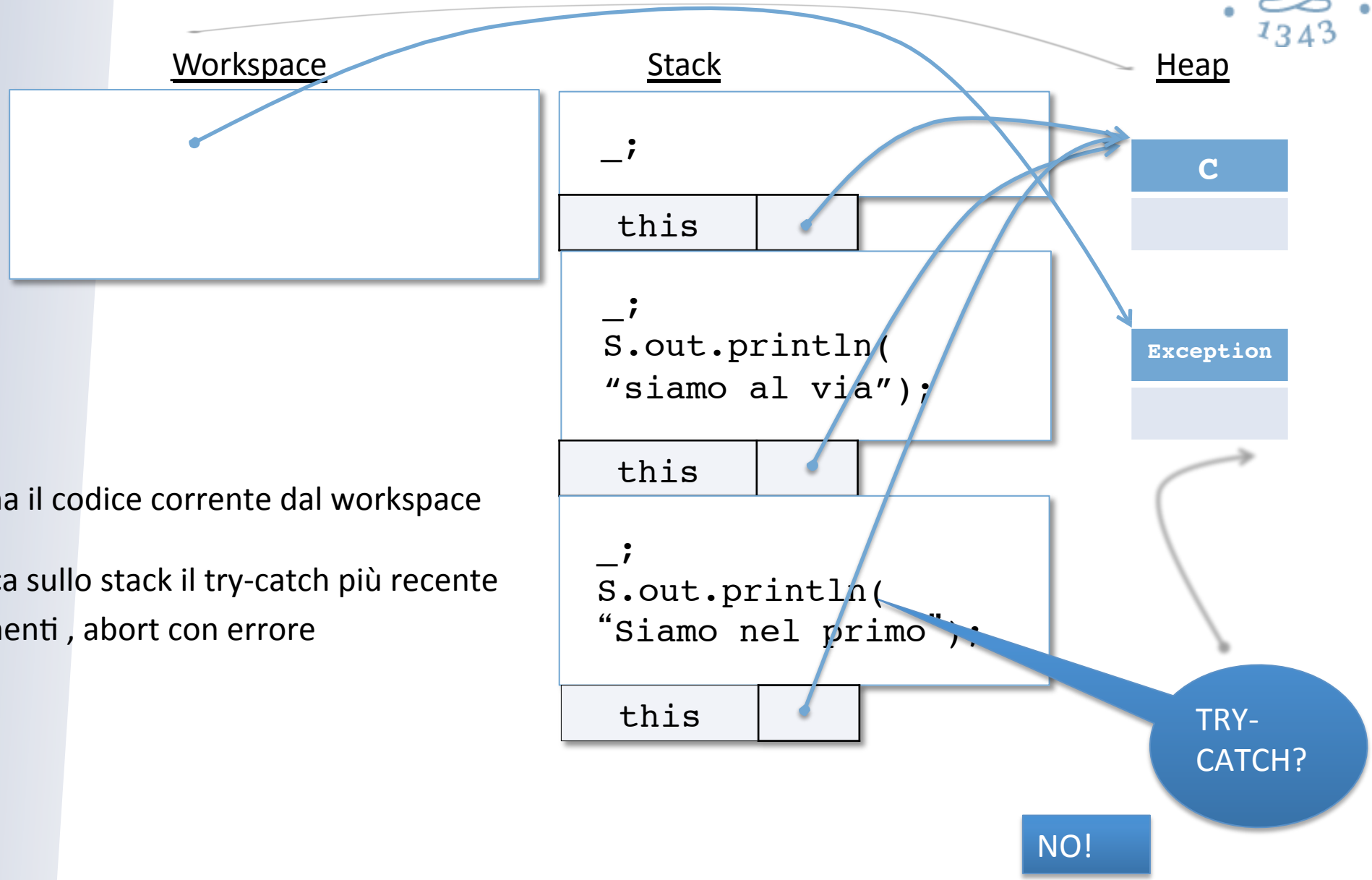


Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti , abort con errore

Abstract Stack Machine



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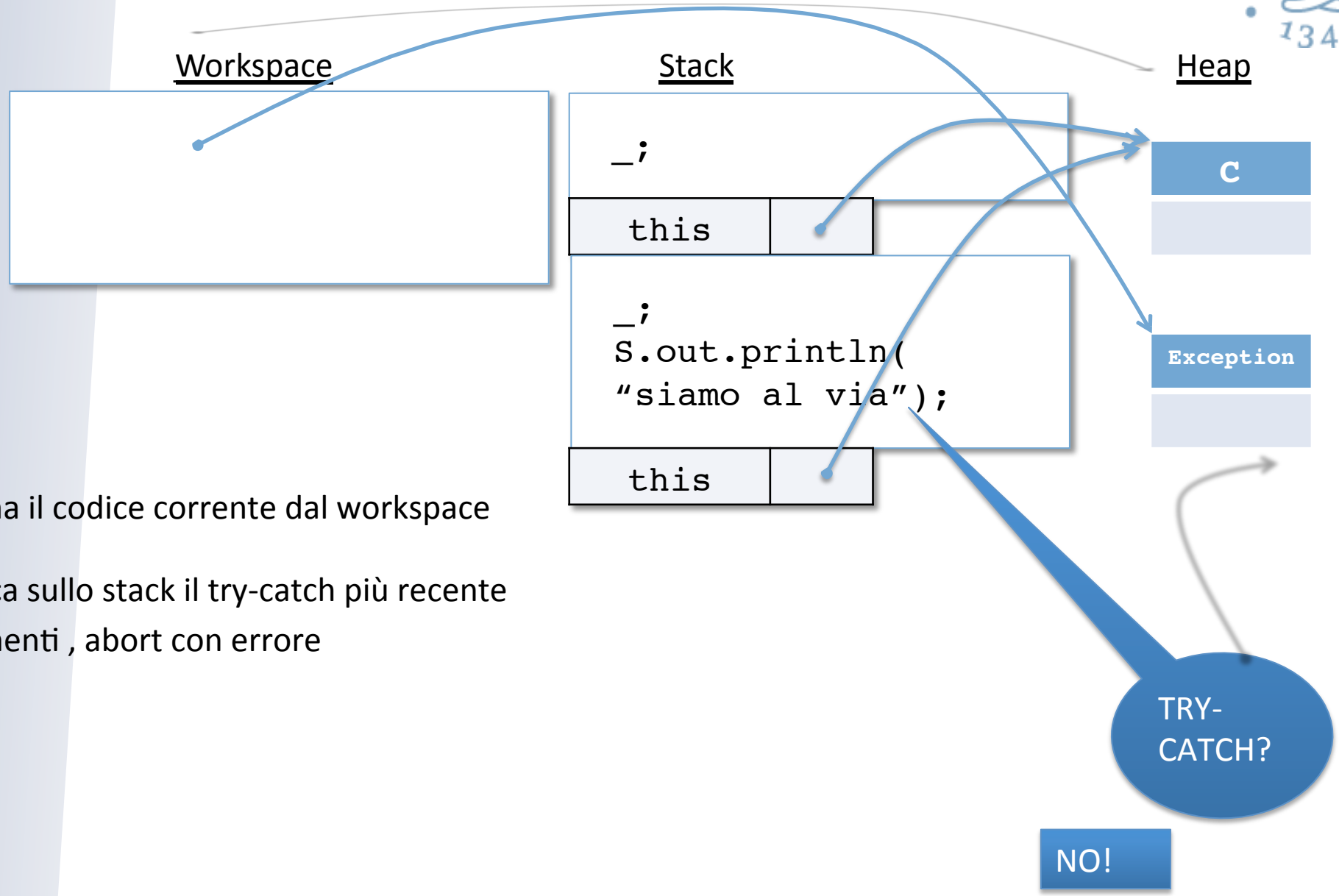
Abstract Stack Machine



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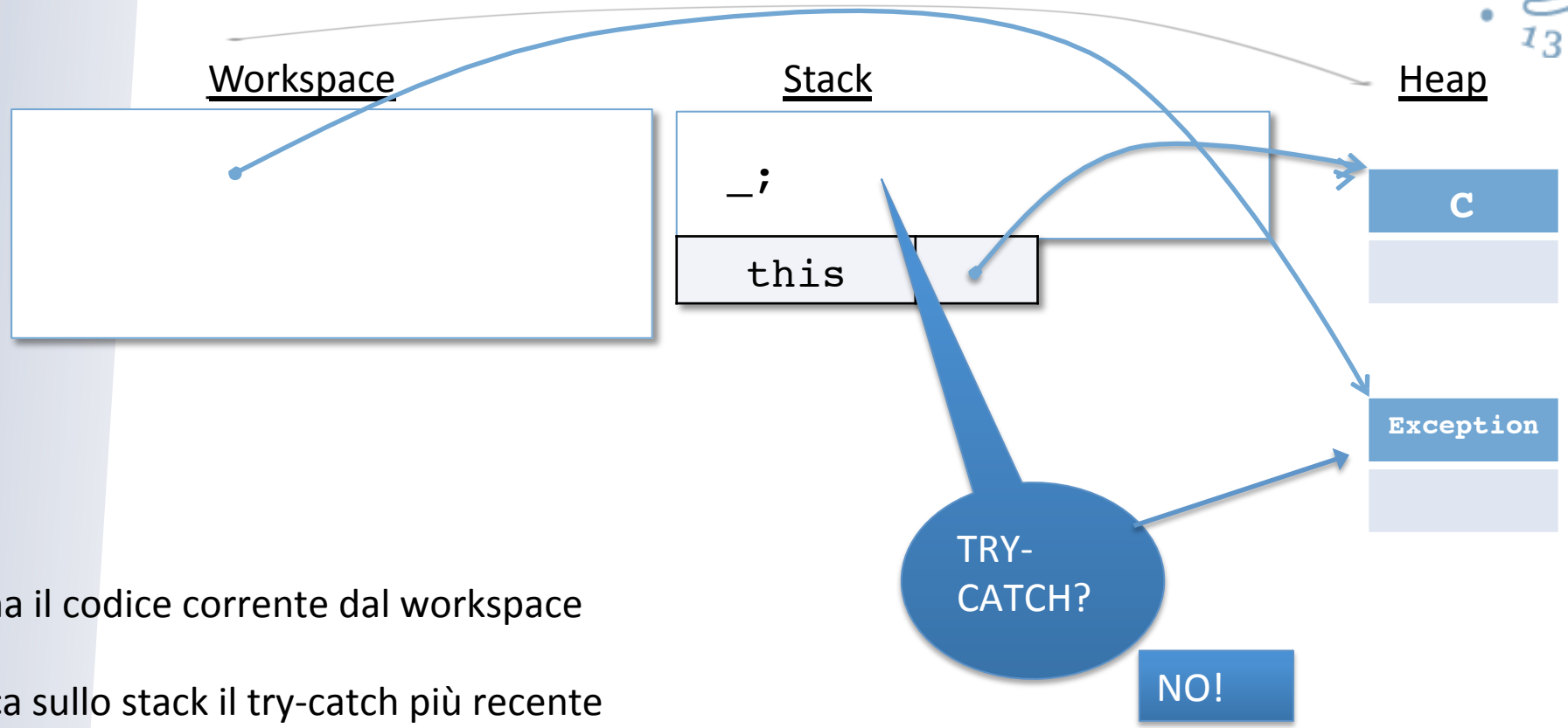
Abstract Stack Machine



Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti , abort con errore

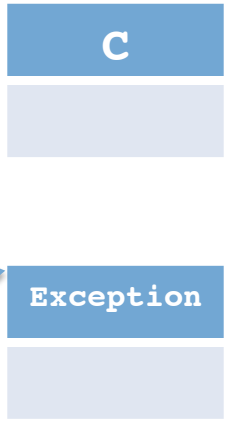
Abstract Stack Machine

Workspace

Stack

Heap

Programma terminato
Eccezione non catturata



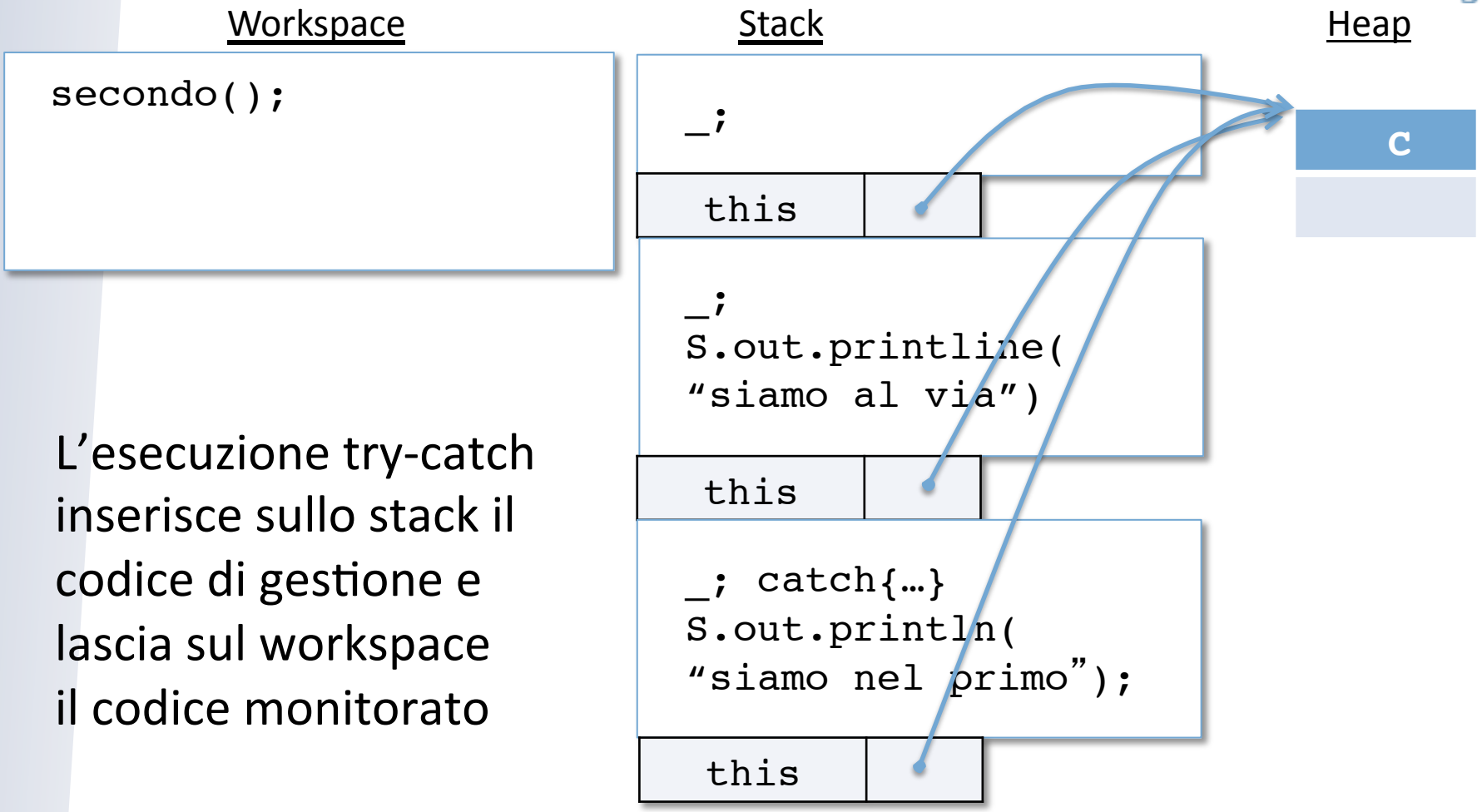

```
class C {
        public void via( ) {
                primo( );
                System.out.println(“ siamo al via”);
        }

        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”);
        }
}
```

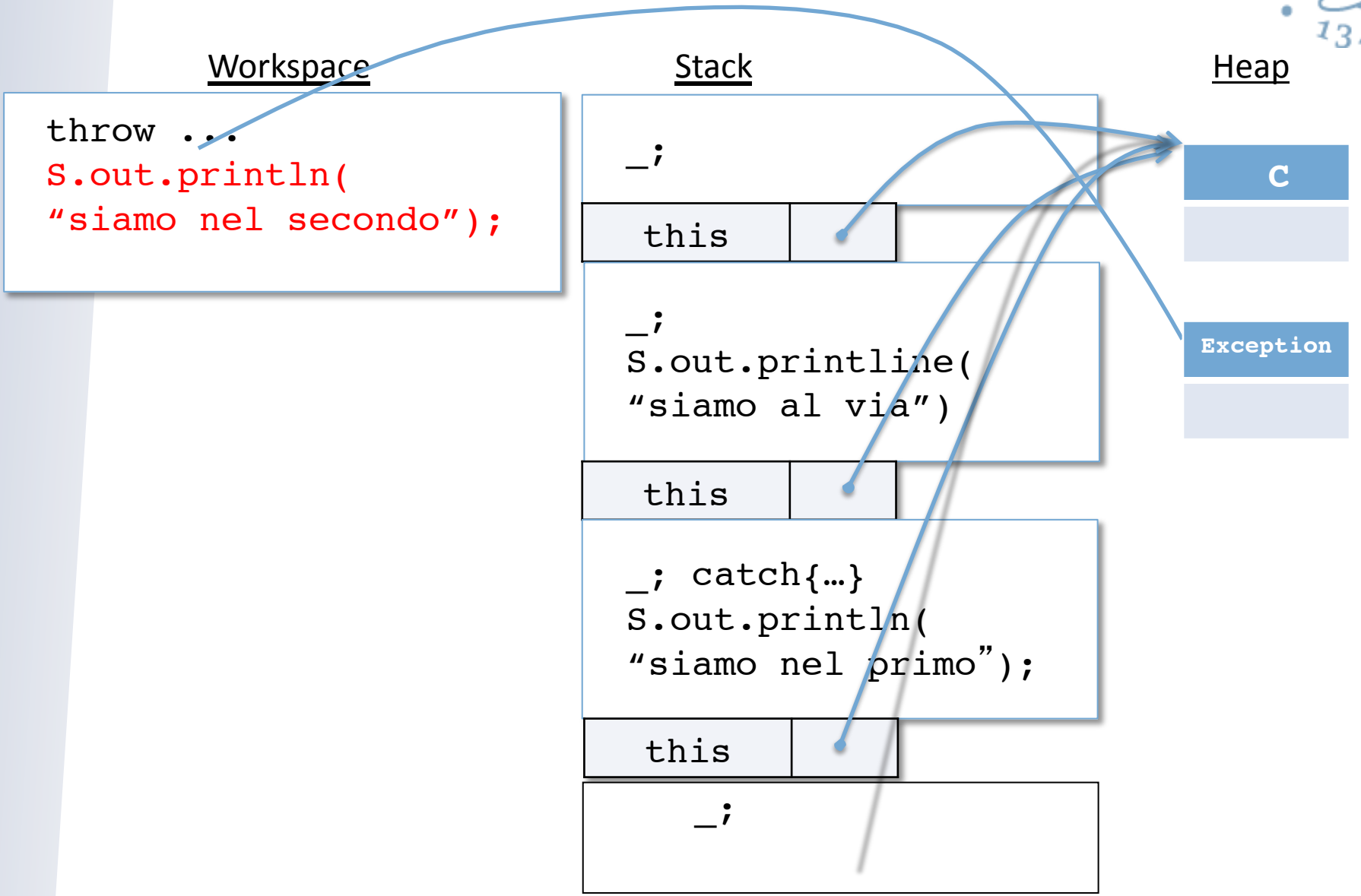
Cosa succede con (new C( )).via( );?

Abstract Stack Machine

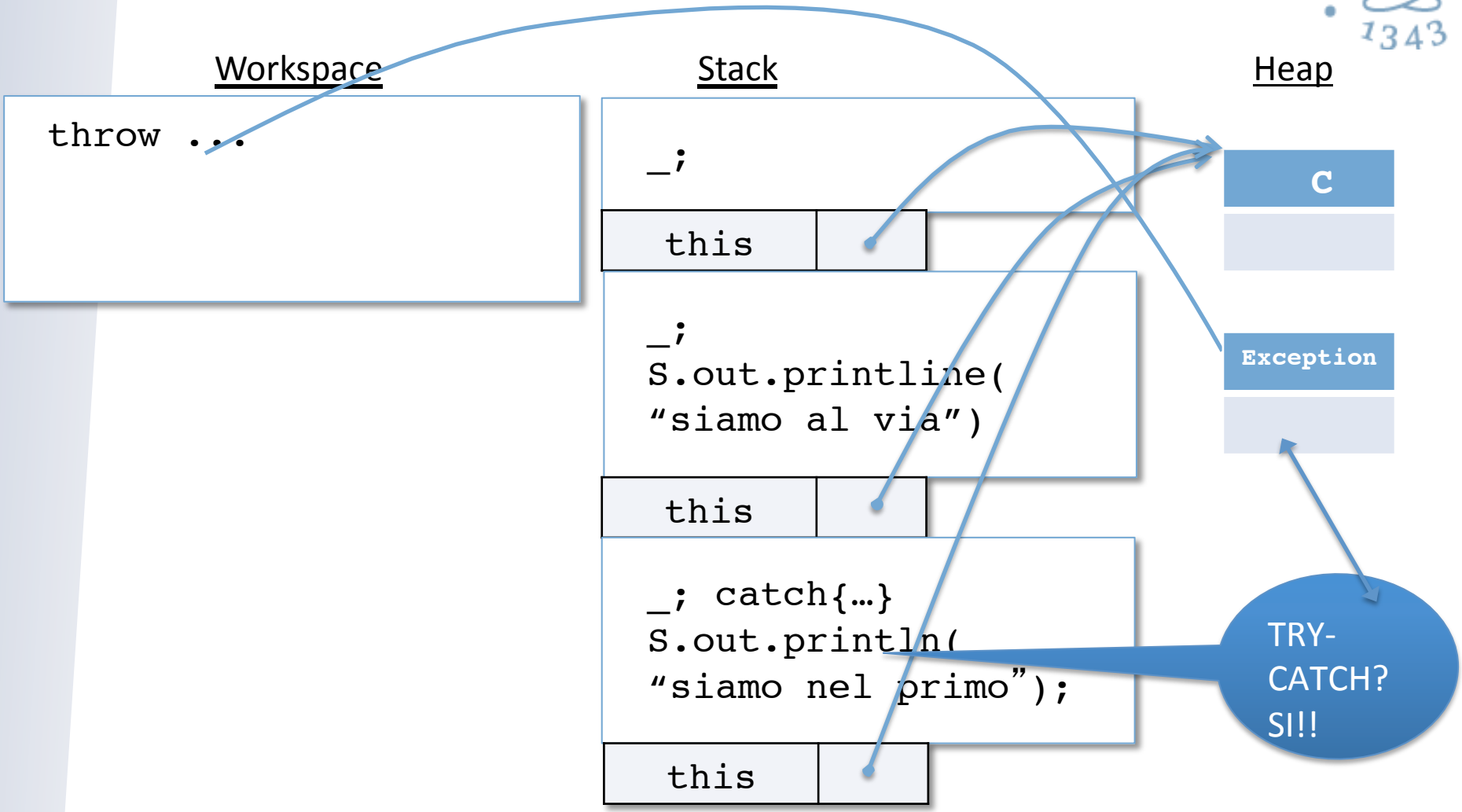


L’esecuzione try-catch inserisce sullo stack il codice di gestione e lascia sul workspace il codice monitorato

Abstract Stack Machine



Abstract Stack Machine



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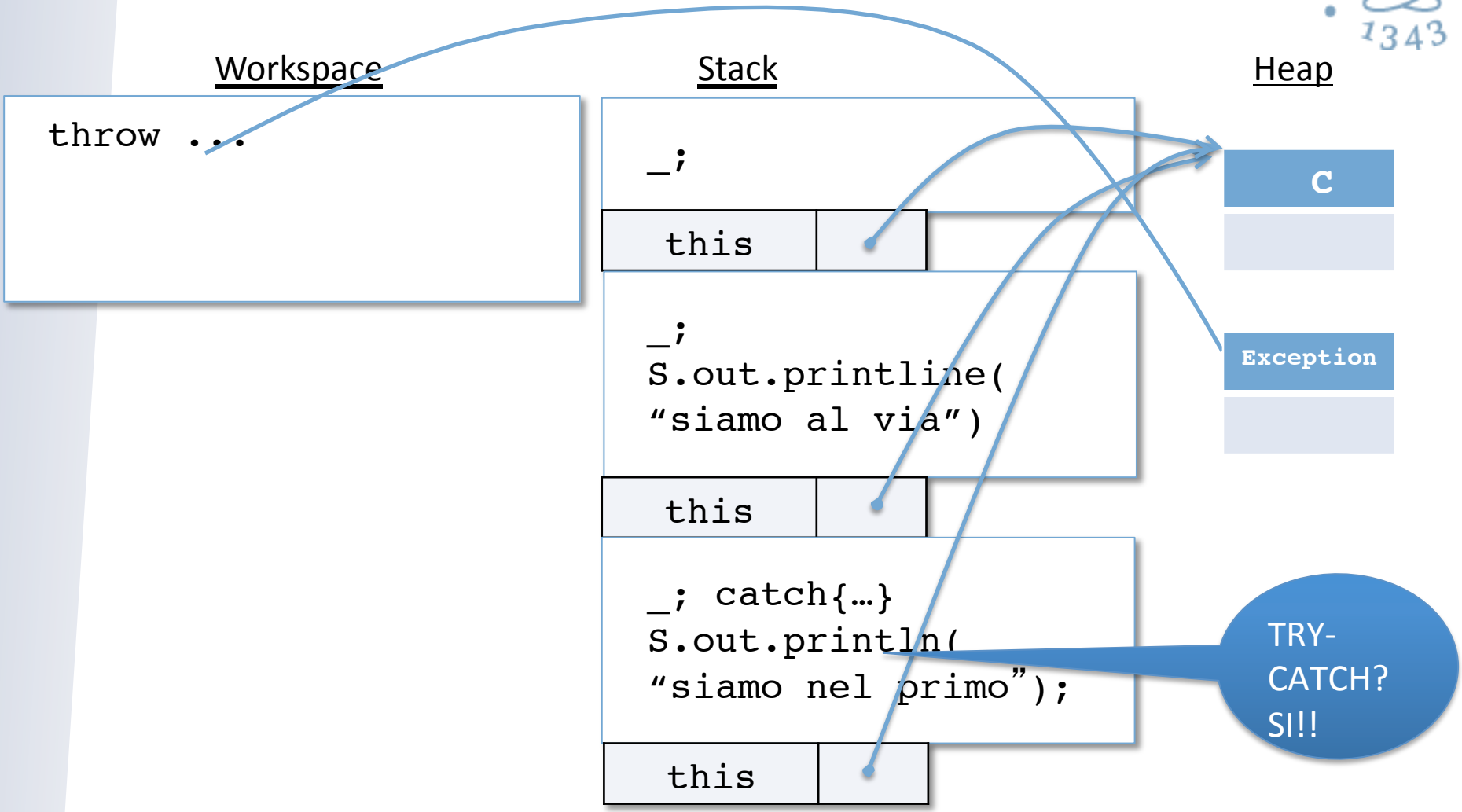

Abstract Stack Machine