Exercice 1

```
int i = 9;
Integer j = new Integer ( i );
```

i

0	0	0	9

j

0x00500

stack
heap

0	0	0	9
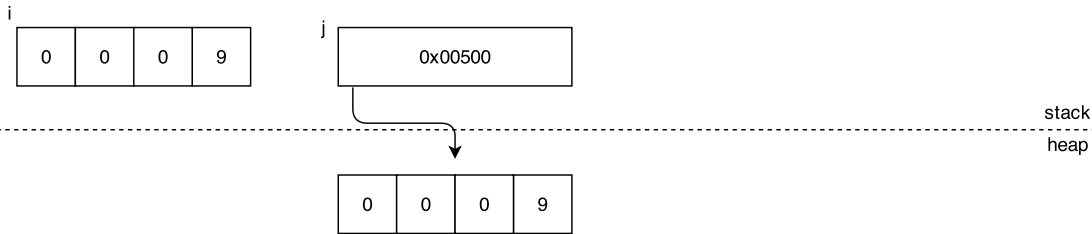
Exercice 2

```
int numbers [] = new int [6];
numbers [3] = 99;
```

numbers

										0	0	9	9										

stack
heap
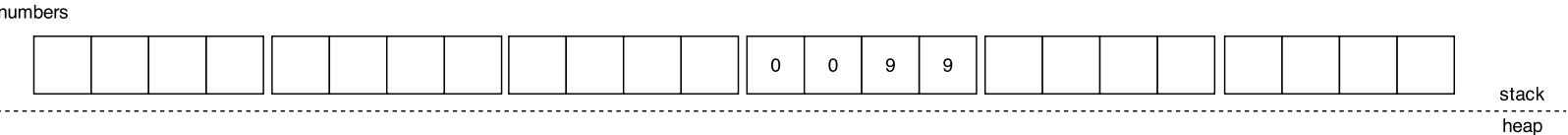
Exercice 3

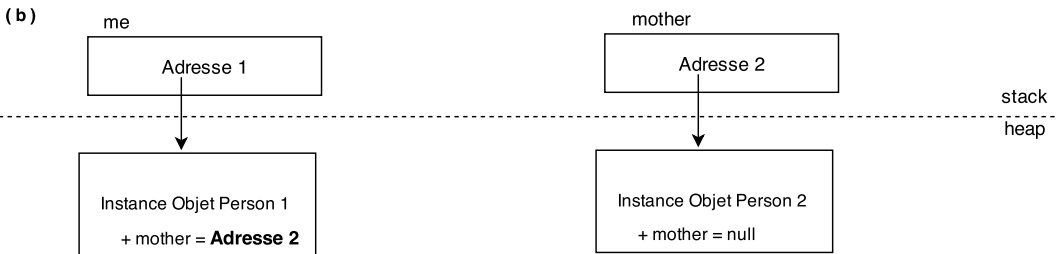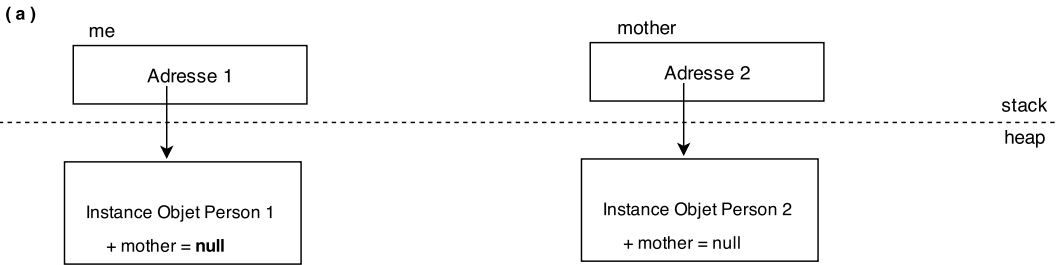```
String name = new String (" Giselle ");
String subname = name . substring (2 , 4);
String subname2 = name . clone (). substring (1 , 3);
```

> *String subname2 = name . clone (). substring (1 , 3);*
> *Provoque une erreur : "The method clone() from the type Object is not visible"*

name

| Adresse 1 |
|-----------|

subname

| Adresse 1 |
|-----------|

subname2

| Adresse 2 |
|-----------|

substring operation    substring operation

stack
heap

| G | i | s | e | l | l | e |
|---|---|---|---|---|---|---|

| G | i | s | e | l | l | e |
|---|---|---|---|---|---|---|
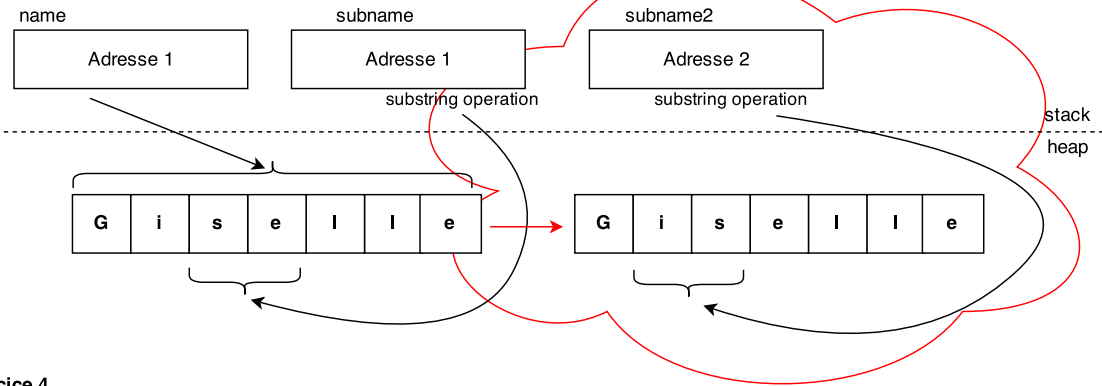
**Exercice 4**

```
public class Person {
    private Person mother ;
    public Person () { mother = null ;}
    public my_mother_is ( Person p) {  mother = p; }
}
Person me = new Person ();
Person mother = new Person ();
//  ( a )
me . my_mother_is ( mother );
//  ( b )
```

(a)

me

Adresse 1

mother

Adresse 2

stack
heap

Instance Objet Person 1   + mother = **null**

Instance Objet Person 2   + mother = null

(b)

me

Adresse 1

mother

Adresse 2

stack
heap

Instance Objet Person 1   + mother = **Adresse 2**

Instance Objet Person 2   + mother = null

Exercice 5

```
public Person {
    private int age ;
    public Person ( int age ) {
        this . age = age ;
    }
    static void make_new ( Person p ) {
        p = new Person (9);
        // ( b )
    }
}
Person person = new Person (1);
// ( a )
Person . make_new ( person );
// ( c )
```

(a)

person

Adresse 1

stack
heap

Instance Objet Person 1   + age = **int 1**

(b)

person

Adresse 1

p

Adresse 2

stack
heap

Instance Objet Person 1   + age = **int 1**   **+ p = Adresse 2**

Instance Objet Person 2   + age = **int 9**

(c)

person

Adresse 1

p

Adresse 2

stack
heap

Instance Objet Person 1   + age = **int 1**   **+ p = Adresse 2**

Instance Objet Person 2   + age = **int 9**