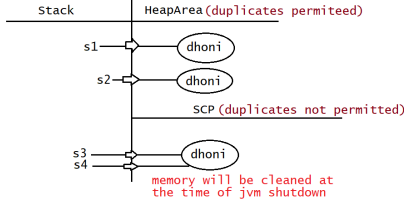## Section 1 (top-left)

```
String s1=new String("dhoni");
String s2=new String("dhoni");

System.out.println(s1==s2); //false

String s3="dhoni";
String s4="dhoni";

System.out.println(s3==s4);//true
```
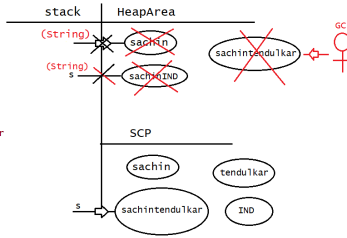
Stack   **HeapArea** (duplicates permiteed)

s1 → dhoni
s2 → dhoni

SCP (duplicates not permitted)

s3
s4 → dhoni

memory will be cleaned at
the time of jvm shutdown

Section 2 (need of SCP, top-right)

Adhar Card Application

```
NAME          [_____]
FATHERNAME    [_____]
DOB           [_____]
CITY          [_____]
PHOTO         [_____]
     [ submit ]
```

(Immutable)
(String)
SCP AREA

p1
p2   Bengaluru   HeapArea
                           hyderabad

p1cr   p3

Section (stack/heap - sachin concat)

```
String s = new String("sachin");
s.concat("tendulkar");
s=s.concat("IND");
s="sachintendulkar";
System.out.println(s); //sachintendulkar
```

stack   **HeapArea**

(String) → sachin   sachintendulkar   GC
(String) s → sachinIND

SCP

sachin   tendulkar
s → sachintendulkar   IND

Section (array charAt)

```
String s =new String("sachin");
System.out.println(s[3]);//CE

System.out.println(s.charAt(3));//h

System.out.println(s.charAt(-1));//StringIndexOutOfBoundsException

System.out.pritnln(s.charAt(500));//StringIndexOutOfBoundsException
```

HeapArea

s → | 0 | 1 | 2 | 3 | 4 | 5 |
    | s | a | c | h | i | n |

Section (s1 concat IND MI)

```
String s1= new String("sachin");

s1.concat("tendulkar");

s1+="IND"; s1 = s1 + "IND";

String s2=s1.concat("MI");

System.out.println(s1); //sachinIND
System.out.println(s2); //sachinINDMI
```

stack   **Heaparea**

s1 → sachin
     sachintendulkar
s1 → sachinIND
s2 → sachinINDMI

SCP (duplicates are not permitted)

sachin   tendulkar
IND   MI

total objects = 8(4+4)
eligible for gc = 2

```
String + "IND"

addition
  both operands are number type

addition
  if one operand is string  then concatination
```
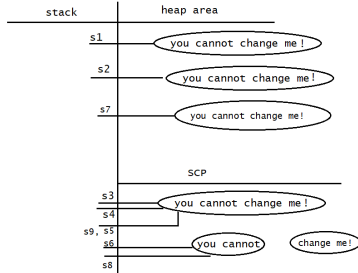
Section (you cannot change me)
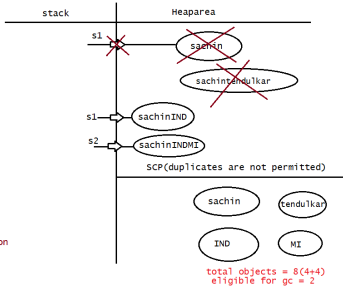
```
String s1=new String("you cannot change me!");
String s2=new String("you cannot change me!");
System.out.println(s1==s2);//false

String s3="you cannot change me!";
System.out.println(s1==s3);//false
String s4="you cannot change me!";
System.out.println(s3==s4);//true

String s5="you cannot " + "change me!";//you cannot change me!
System.out.println(s3==s5);//true

String s6="you cannot ";
String s7=s6+"change me!";
System.out.println(s3==s7);//false

final String s8="you cannot ";
String s9=s8+"change me!";//you cannot change me!
System.out.println(s3==s9);//true
System.out.println(s6==s8);//true
```
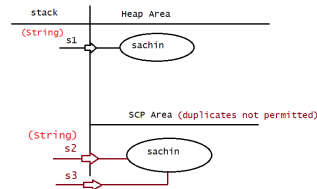
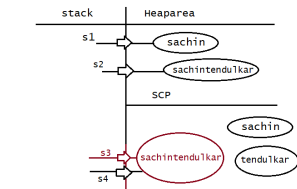**stack**   **heap area**

s1 → you cannot change me!
s2 → you cannot change me!
s7 → you cannot change me!

SCP

s3
s4 → you cannot change me!
s9, s5
s6 → you cannot   change me!
s8

Section (intern - false/true)

```
String s1 = new String("sachin");
String s2 =s1.intern();
System.out.println(s1==s2);//false

String s3  = "sachin";
System.out.println(s2==s3); //true
```

stack   **Heap Area**

(String) s1 → sachin

SCP Area (duplicates not permitted)

(String)
s2
s3 → sachin

Section (intern sachintendulkar)

```
String s1 = new String("sachin");
String s2 = s1.concat("tendulkar");

String s3 = s2.intern();

String s4 = "sachintendulkar";
System.out.println(s3==s4);//true
```

stack   **Heaparea**

s1 → sachin
s2 → sachintendulkar

SCP

sachin
s3 → sachintendulkar   tendulkar
s4