Shadowing Problem and this keyword

- If both local variable and instance variable have the same name inside the method then it would result in a name-clash and jvm will always give preference for local variable.

This approach is called the **"Shadowing problem"**.

Example

```java
class Student
{
     private String name;
     private Integer id;
     private String address;

    Student(String name,Integer id, String address){
            name = name;
            id = id;
             address = address;
    }
    public void display()
    {
            System.out.println("Name is    :: "+name);
            System.out.println("Id is      :: "+id);
            System.out.println("Address is :: "+address);
    }
}

public class Demo
{
     public static void main(String[] args)
     {
            Student std = new Student("sachin",10,"MI");
            std.display();
     }
}
```

Output
Name is   :: null
Id is   :: null
Address is :: null

- As noticed in the above program, the variables name,id,address are local variables and these values should be assigned to instance variables of student class.
- Inside the method the jvm will always give preference only for local variables, this problem is termed as "Shadowing".
- To resolve this problem we need to use , "this" keyword.

Note:

this keyword would always point to current object, and this variable would hold the address the active object present in the heap memory.

Program to resolve the problem of shadowing

```java
class Student
{
     private String name;
     private Integer id;
     private String address;

    Student(String name,Integer id, String address){
            this.name = name;
            this.id = id;
            this.address = address;
     }
    public void display()
   {
            System.out.println("Name is   :: "+name);
            System.out.println("Id is     :: "+id);
            System.out.println("Address is :: "+address);
     }
}

class Demo
{
     public static void main(String[] args)
     {
            Student std = new Student("sachin",10,"MI");
            std.display();
     }
}
```

Output
Name is   :: sachin
Id is   :: 10
Address is :: MI