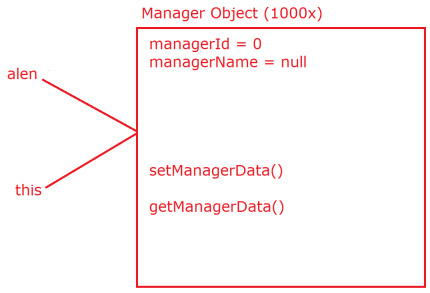
this keyword :

Diagram for this keyword program :

```
public class ManagerDemo {

    public static void main(String[] args)
    {
        Manager alen = new Manager();
        alen.setManagerData(111, "Alen");
        alen.getManagerData();
    }

}
```



* Whenever we create an object in java then that object is refered by this keyword so, we can say this keyword is used to refer the current object.

* By using this keyword, we can represent our object properties (Non static field) and Our object behavior (non static methods) anywhere in the class.

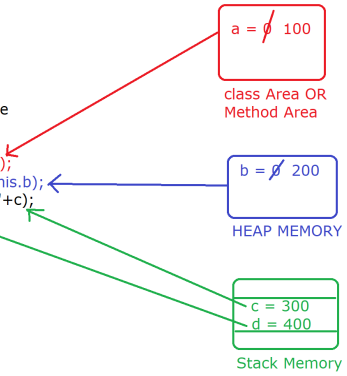
What is local search algorithm ?

```
package com.ravi.this_keyword;

class Test
{
    static int a = 100;  //static Field
    int b = 200; //Non static Field

    public void accept(int c)  //Parameter Variable
    {
        int d = 400;  //Local Variable
        System.out.println("Static Field :"+Test.a);
        System.out.println("Non Static Field :"+ this.b);
        System.out.println("Parameter Variable :"+c);
        System.out.println("Local Variable :"+d);
    }
}
public class LocalSearchAlgorithm
{
    public static void main(String[] args)
    {
        Test t1 = new Test();
        t1.accept(300);
    }

}
```



In java, whenever we execute a method, block OR constructor, if we use any variable inside the method OR block OR Constructor then compiler will search the variable declaration inside the method OR block OR constructor body first, If variable is not **declared inside the method OR block OR constructor then compiler will serach the same variable at class level, This is called Method search algorithm.**

After finding the class level variable, if it is a staic then compiler will add className with variable (Test.a), if it is a non static variable then compiler will add this keyword with the variable, compiler will not add anything with local and parameter variable as shown in the above diagram.

Memory allocation and Initialization for different variables :
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1) Static Field : Memory will be allocated at class area OR method area at the time of loading the .class file into JVM Memory.

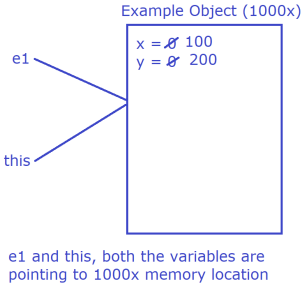
2) Non static Field :Memory will be allocated at HEAP area at the time of Object creation and initialized with default value with the help of new keyword.

3) Local and Parameter Variable : Memory will be allocated in the stack area in a separate Stack Frame.

Compiler activity on this keyword :

```
public class Example
{
  int x,y;

  public void accept(final Example this, int x, int y)
  {
      x = x;
      y = y;
  }
}
  Example e1 = new Example();
        e1.accept(e1, 100,200);
```



e1 and this, both the variables are pointing to 1000x memory location

In every non static method and constructor aytomatically compiler provides this keyword as a first parameter which is final.

this keyword we can't use from static area, static method, static block OR static nested inner class