

CODE:

```
import java.util.*;
import java.io.*;

class As6
{
    /*The following grammar has been implemented:
    * E -> TE'
    * E' -> +TE'|sigma
    * T -> FT'
    * T' -> *FT'|sigma
    * F -> (E)|id
    */
    static int index=0;
    static String input;

    public static void E()
    {
        T();
        Eprime();
    }

    public static void Eprime()
    {
        if(input.charAt(index)=='+')
        {
            index++;
            T();
            Eprime();
        }
    }

    public static void T()
    {
        F();
        Tprime();
    }

    public static void Tprime()
    {
        if(input.charAt(index)=='*')
        {
            index++;
            E();
        }
    }

    public static void F()
    {
        if(input.charAt(index)=='i' && input.charAt(index+1)=='d')
        {
            index+=2;
        }
        else if(input.charAt(index)=='(')
        {
            index++;
            E();
            if(input.charAt(index)=='')
            index++;
        }
    }
}
```

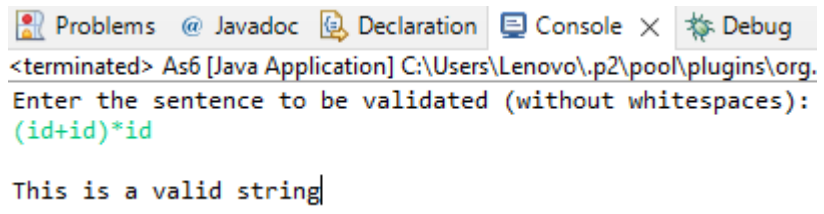
```

}

public static void main(String[] args) throws IOException
{
    Scanner s = new Scanner(System.in);
    System.out.println("Enter the sentence to be validated (without whitespaces):");
    input = s.nextLine();
    input = input.concat("$"); //Terminal character
    E();
    if(input.charAt(index) == '$')
        System.out.println("\nThis is a valid string");
    else
        System.out.println("\nThis is an invalid string");
    s.close();
}
}

```

OUTPUT:



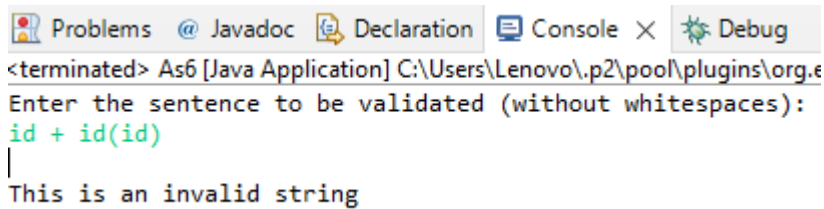
The screenshot shows an IDE window with tabs for Problems, Javadoc, Declaration, Console, and Debug. The Console tab is active, displaying the following text:

<terminated> As6 [Java Application] C:\Users\Lenovo\.p2\pool\plugins\org.

Enter the sentence to be validated (without whitespaces):

(id+id)*id

This is a valid string|



The screenshot shows the same IDE window with the Console tab active, displaying the following text:

<terminated> As6 [Java Application] C:\Users\Lenovo\.p2\pool\plugins\org.e

Enter the sentence to be validated (without whitespaces):

id + id(id)

|

This is an invalid string