German University in Cairo
Department of Computer Science
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Assignment 2
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Here is the submission using antler code .

```
start: s EOF{System.out.println("the result is "+$s.check);};
s returns [int check]:o {$check=0;}
                 | e {$check=$e.chk;}
                 |   {$check=0;};
o : 'a'o'a'|'a'o'b'|'b'o'a'|'b'o'b'|'a'|'b';
e returns[int left,int right,int chk]:
    'a'E1=e'a'{$right=$E1.right;$left=$E1.left;$chk=$E1.chk;}
    |'a'E1=e'b' {$chk=(($E1.left==$E1.right)?1:$E1.chk);$left=$E1.left+1;$right=$E1.right;}
    |'b'E1=e'a' {$chk=(($E1.left==$E1.right+1)?0:$E1.chk);$right=$E1.right+1;$left=$E1.left;}
    |'b'E1=e'b' {$right=$E1.right;$left=$E1.left;$chk=$E1.chk;}
    |'a''a'
    |'a''b'{$left=1;$chk=1;}
    |'b''a'{$right=1;$chk=0;}
    |'b''b';
```

```
start: s EOF{System.out.println("the result is "+$s.check);};
s returns [int check]:o {$check=0;}
                    | e {$check=$e.chk;}
                    |   {$check=0;};


o : 'a'o'a'|'a'o'b'|'b'o'a'|'b'o'b'|'a'|'b';


e returns[int left,int right,int chk]:
    'a'E1=e'a'{$right=$E1.right;$left=$E1.left;$chk=$E1.chk;}
   |'a'E1=e'b'
{$chk=(($E1.left==$E1.right)?1:$E1.chk);$left=$E1.left+1;$right=$E1.right;}
   |'b'E1=e'a'
{$chk=(($E1.left==$E1.right+1)?0:$E1.chk);$right=$E1.right+1;$left=$E1.left;}
   |'b'E1=e'b' {$right=$E1.right;$left=$E1.left;$chk=$E1.chk;}
   |'a''a'
   |'a''b'{$left=1;$chk=1;}
   |'b''a'{$right=1;$chk=0;}
   |'b''b';
```