



能力 100.0

1个小圆点代表1个学生

红色水滴表示当前学生的计算结果值

小圆圈越大,评测次数越少

横坐标: 对完成实训的总时间取log

纵坐标: 实训总分数/评测次数

## 实训详情

### 第1关 全加器设计

评测次数	评测信息
第1次	共有1组测试集，其中有1组测试结果不匹配。
最后一次	compile successfully

#### 最近通过的代码

```
1 module fa_behavioral(a,b,ci,s,co);//考虑进位的加法器模块
2     input a,b;
3     input ci;
4     output s;
5     output co;
6 // 请在下面添加代码，完成一位全加器功能
7 /* Begin */
8     assign s=a^b^ci;
9     assign co=a&b|a&ci|b&ci;
10
11 /* End */
12
13 endmodule
14
```

### 第2关 无符号二进制数加法器的实现

评测次数	评测信息
第1次	./adder.v:9: syntax error ./adder.v:9: error: Invalid module instantiation
第2次	./adder.v:9: syntax error ./adder.v:9: error: Invalid module instantiation
最后一次	compile successfully

#### 最近通过的代码

```
1 module adder(a,b,cin,cout,sum);
2     parameter bit_width=8;
3     output[bit_width-1:0] sum;
4     output cout;
5     input [bit_width-1:0] a,b;
6     input cin;
7 // 请在下面添加代码，完成n=8位的无符号二进制数加法器功能
8 /* Begin */
9     assign {cout,sum}=a+b+cin;
10 /* End */
11 endmodule
12
```

### 第3关 减法运算器

评测次数	评测信息
第1次	./subtractor.v:9: error: Unable to bind parameter `a' in `subtractor_tb.m' ./subtractor.v:9: error: Unable to bind parameter `b' in `subtractor_tb.m' ./subtractor.v:9: error: Unable to bind parameter `cin' in `subtractor_tb.m' ./subtractor.v:9: error: Cannot evaluate genvar conditional expression: (a)<((b)+(cin)) 4 error(s) during elaboration.
第2次	./subtractor.v:9: error: Unable to bind parameter `a' in `subtractor_tb.m' ./subtractor.v:9: error: Unable to bind parameter `b' in `subtractor_tb.m' ./subtractor.v:9: error: Cannot evaluate genvar conditional expression: (a)<(b) ./subtractor.v:9: error: Unable to bind parameter `a' in `subtractor_tb.m' ./subtractor.v:9: error: Unable to bind parameter `b' in `subtractor_tb.m' ./subtractor.v:9: error: Cannot evaluate genvar conditional expression: (a)<(b) 6 error(s) during elaboration.
第3次	共有1组测试集，其中有1组测试结果不匹配。
最后一次	compile successfully

最近通过的代码

```
1 module subtractor(a,b,cin,cout,sum);
2   parameter bit_width=8;
3   output[bit_width-1:0] sum;
4   output cout;
5   input [bit_width-1:0] a,b;
6   input cin;//carry
7   // 请在下面添加代码，完成n位的无符号二进制数减法器功能
8   /* Begin */
9     assign cout=(a<b)?1'b1:1'b0;
10    assign sum={cout,a}-b-cin;
11  /* End */
12 endmodule
13
```

第4关 定点二进制数的补码加减法运算器

评测次数	评测信息
第1次	./add_sub.v:11: syntax error ./add_sub.v:12: error: invalid module item. ./add_sub.v:13: syntax error ./add_sub.v:13: error: Invalid module instantiation ./add_sub.v:16: error: Invalid module instantiation ./add_sub.v:17: error: Invalid module instantiation ./add_sub.v:19: syntax error ./add_sub.v:19: error: invalid module item. ./add_sub.v:20: syntax error ./add_sub.v:20: error: invalid module item. ./add_sub.v:21: syntax error ./add_sub.v:21: error: Invalid module instantiation ./add_sub.v:22: syntax error ./add_sub.v:22: error: Invalid module instantiation ./add_sub.v:23: error: Invalid module instantiation add_sub_tb.v:3: error: invalid module item. add_sub_tb.v:4: error: duplicate definition for parameter 'bit_width' in 'add_sub'. add_sub_tb.v:5: sum wire definition conflicts with reg definition at ./add_sub.v:5. ./add_sub.v:5: error: Net ``sum" has already been declared. add_sub_tb.v:6: cout wire definition conflicts with reg definition at ./add_sub.v:5. ./add_sub.v:5: error: Net ``cout" has already been declared. add_sub_tb.v:6: overflow wire definition conflicts with reg definition at ./add_sub.v:5. ./add_sub.v:5: error: Net ``overflow" has already been declared.
第2次	./add_sub.v:11: syntax error ./add_sub.v:12: error: invalid module item. ./add_sub.v:19: syntax error ./add_sub.v:19: error: invalid module item. ./add_sub.v:20: syntax error ./add_sub.v:20: error: invalid module item. ./add_sub.v:21: syntax error ./add_sub.v:21: error: Invalid module instantiation ./add_sub.v:22: syntax error ./add_sub.v:22: error: Invalid module instantiation ./add_sub.v:23: error: Invalid module instantiation add_sub_tb.v:3: error: invalid module item. add_sub_tb.v:4: error: duplicate definition for parameter 'bit_width' in 'add_sub'. add_sub_tb.v:5: sum wire definition conflicts with reg definition at ./add_sub.v:5. ./add_sub.v:5: error: Net ``sum" has already been declared. add_sub_tb.v:6: cout wire definition conflicts with reg definition at ./add_sub.v:5. ./add_sub.v:5: error: Net ``cout" has already been declared. add_sub_tb.v:6: overflow wire definition conflicts with reg definition at ./add_sub.v:5. ./add_sub.v:5: error: Net ``overflow" has already been declared.
第3次	./add_sub.v:12: tgt-vvp sorry: procedural continuous assignments are not yet fully supported. The RHS of this assignment will only be evaluated once, at the time the assignment statement is executed. ./add_sub.v:13: tgt-vvp sorry: cannot %cassign signal to a part select (a2[3:0]). ./add_sub.v:16: tgt-vvp sorry: procedural continuous assignments are not yet fully supported. The RHS of this assignment will only be evaluated once, at the time the assignment statement is executed. ./add_sub.v:17: tgt-vvp sorry: cannot %cassign signal to a part select (b2[3:0]). error: Code generation had 2 error(s).
最后一次	compile successfully

最近通过的代码

```

1 module add_sub(a,b,control,cout,overflow,sum);
2 parameter bit_width=4;
3 output[bit_width-1:0] sum;    output cout,overflow;
4 input [bit_width-1:0] a,b;    input control;//carry
5 reg overflow,cout;           reg [bit_width-1:0] sum;
6 reg [bit_width:0] a2,b2,sum2;
7 // 请在下面添加代码，完成定点二进制数的补码加减法运算器功能
8 /****** Begin *****/
9 always@(a,b,control)
10 /****** End *****/
11 begin
12     a2[bit_width]=a[bit_width-1]; //将a符号位扩展成2位并赋值给a2
13     a2[bit_width-1:0]=a[bit_width-1:0];
14     // 请在下面添加代码，将b符号位扩展成2位并赋值给b2
15     /****** Begin *****/
16     b2[bit_width]=b[bit_width-1]; //将b符号位扩展成2位并赋值给a2
17     b2[bit_width-1:0]=b[bit_width-1:0];
18     /****** End *****/
19     if (control==0) {cout,sum2}=a2+b2;
20     else {cout,sum2}=a2+(~b2)+control;
21     if((sum2[bit_width]^sum2[bit_width-1])==1) overflow=1;
22     else overflow=0; //用双符号位判溢出
23     sum[bit_width-1:0]=sum2[bit_width-1:0];
24 end
25 endmodule

```