

Test Cases for Compiler Project

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```
/*aa aa aa lot*/
```

```
{
    while true {
        print(" a")
        if true {
            print("a")
        }
        if false {
            print("b")
        }
    }
}$
```

```
/*LONGER if in a while
count by twos to 16*/
```

```
{
    int r r = 2
    while(r != 9+9) {
        print(r)
        if (r == 8) {
            print("half way")
        }
        r = 2+r
    }
}$
```

```
/*immediately no*/
```

```
{
    int z z = 8
    while(z != 8) {
        print(z)
    }
}$
```

```
/*whiles and ifs*/
```

```
{
    int o o=0
    int i i=9
    if (i == 9) {
        i = 8
    }
    while (o != 3) {
        i = 0
        print(o)
        o = 1+o
        if (i==8) {
            i=7
        }
    }
    print(i)
}$
```

```
/*scope hell*/
```

```
{{int i i=1
{{}i=2}
{
{{{print("deep")}}}
}
{i=3}
print(i)}}
}
$
```

```
/*print the alphabet by comparing
strings*/
```

```
{
    string a a = "abc"
    if (a == "abc") {
        print(a)
        a = "def"
    }
    if (a == a) {
        if (a == "def") {
            print("def")
        }
    }
    if (true != false) {
        a = "ghi"
        {
            print(a)
        }
    }
}$
```

```
/*random*/
```

```
{
    int a a=9
    string i
    int c c=8
    if (a==8+1) {
        print(a)
        i="hi"
        int i i=9+8+2+c
        print(i)
    }
    print(i)
}$
```

```
/*this is logical*/
```

```
{
    if true {
        print(true)
    }
}$
```

/*crazy nested if*/

```
{
    /* set the 'space' variable*/
    string s s = " "

    /*if math is wrong*/
    if (2+2 != 4) {
        print("what is real anymore")
    }

    /*if math is right*/
    if (2+2 == 4) {
        print("thats real ")

        /*true*/
        boolean t t=true
        if (t==true) {
            int a a=9
            print(a)
        }

        /*mess with extra scopes*/
        if (t!=true){
            {
                {
                    s="lala"
                }
                /*s="haha"*/
            }
        }

        /*should still be a space*/
        print(s)
    }
    print("done")
}$

/* if equality vs inequality*/
{
    if (1==1) {
        print("ones ")
    }
    if (1!=9) {
        print("big vs small ")
    }
    if (2+9==1+6+4) {
        print("elevens ")
    }
    if (0!=0) {
        print("zeros")
        /*this should not print*/
    }
}$
```

/*reusing printed strings and string variables*/

```
{
    string p p = "pillow"
    print(p)
    print(" is ")
    print("pillow")

    print(" ")

    print("leech")
    print(" is ")
    string l l = "leech"
    print(l)

    print(" ")

    string c c = "copy of "
    print(c)
    print(p)
    print(" is ")
    c = p
    print(c)
}$
```

/*12345 done*/

```
{
    int a a=0
    while (a != 5) {
        a = 1+a
        print(a)
    }
    print(" done")
}$
```

/*smart heap*/

```
{
    print("computers ")
    print("omputers ")
    print("mputers ")
    print("puters ")
    print("uters ")
    print("ters ")
    print("ers ")
    print("rs ")
    print("s ")
}$
```

Error Cases

/*all data types*/

```
{
    int h
    h = 4
    print (1+h)
    string g

    boolean r r = ("your" == "youre")
    if (r) {
        print("grammer")
    }
    if (r == false) {
        print("begin while loop")

        while(h != 8) {
            print(h)
            /*wrong order:*/
            h = h+1
            g = "bye"
        }
    }
    print(g)
}$
```

/*overloaded boolean operations*/

```
{
    boolean a
    a = true
    int b
    b = 6

    boolean c
    c = ((a==false) != (6==b))
    print(c)
} $
```

/*too many ids*/

```
{
    {int a int b int c
    int d int e int f
    int g int h int i int j }
    {int a int b int c
    int d int e int f
    int g int h int i int j }
    {int a int b int c
    int d int e int f
    int g int h int i int j }
    {int a int b int c
    int d int e int f
    int g int h int i int j }
    {int a int b int c
    int d int e int f
    int g int h int i int j }
}$
```

/*big heap*/

```
{
    print("the vowels are as follows")
    print(" aaaaaaaaaaaaaaaaaaaaaaaaaa")
    print(" eeeeeeeeeeeeeeeeeeeeeeeeeee")
    print(" iiiiiiiiiiiiiiiiiiiiiiiiiiiii")
    print(" ooooooooooooooooooooooooooooo")
    print(" uuuuuuuuuuuuuuuuuuuuuuuuuuuu")
    print(" and sometimes yyyyyyyyyyy")
    print(" and maybe even wwwwwwwww")

    /*
    print("heap is too big if this gets
    printed")
    */
}$
```

/*v is everything*/

```
{
    int v
    v = 2
    {
        print(v)
        string v
        print(v)
        v = "v"
        print(v)
    }
    }
    string b
    b = "b"
    if (v == 2) {
        print(b)
    }
}
```

/*type mismatch error*/

```
{ v = "w"
    { v = false
    }
}
}$
```

EXTREME Cases

/* counting in base n */

```
{
    int a a = 0
    int b b = 0
    int c c = 0

    int n n = 2 /*count in base 2*/
    /*try 3, it takes awhile*/
    print("base ")
    print(n)

    while (a != n) {
        while (b != n) {
            while (c != n) {
                print(" ")
                print(a)
                print(b)
                print(c)

                c = 1 + c
            }
            c = 0
            b = 1 + b
        }
        b = 0
        a = 1 + a
    }
}$
```

/* compare addition and inc */

```
{
    int a
    int b
    b = 1
    while (8 + 9 + b != 1 + a) {
        a = 1 + a
        print(a)
        print(" ")
    }
    print("done")
}$
```

/* static collides with heap */

```
{
    string a
    a = "static area might collide
into heap because i am filling the
heap with data to cause that
collision"
    string b
    b = "some work"
    string c
    string d
    string e
    string f
    string g
    string h
    string i
    string j
    string k
    string l
    string m
    string n
    string o
    string p
    string q
    string r
    string s
    string t
    string u
    string v
    string w
    string x
    string y
    string z
    print (b)
}$
```

/* too long for my code gen */

```
{
    print(
        (
            (
                (5 + 2 + 3 == 9 + 1)
                ==
                ("wow" != "wow")
            )
            ==
            (
                (3==5)
                !=
                (true == true)
            )
        )
    )
}$
```