```
var x;
var multiplier;
function fac(y)
{
    if( y == 0 )
        return 1;
    else
    { return y * multiplier * fac( y - 1 ); }
}

function main()
{
    multiplier = 2;
    x = fac( 3 );
    print x;
}


    bra L1
L0:
    ldr MP
    ldrr MP SP
    annote MP -3 -3 green "y (param)"
    ldl -3
    annote SP 0 0 green "y"
    ldc 0
    annote SP 0 0 green "0"
    eq
    annote SP 0 0 green "y==0"
    brf L2
    ldc 1
    annote SP 0 0 green "1"
    sts -4
    ldrr SP MP
    str MP
    sts -1
    ajs 0
    ret
    bra L3
L2:
    ldl -3
    annote SP 0 0 green "y"
    ldl -2
    lda 2
    annote SP 0 0 green "multiplier"
    mul
    annote SP 0 0 green "y*multiplier"
    ldl -3
    annote SP 0 0 green "y"
    ldc 1
    annote SP 0 0 green "1"
    sub
    annote SP 0 0 green "y-1"
    ldl -2
    ldc L0
    jsr
    mul
    annote SP 0 0 green "y*multiplier*fac(y-1)"
    sts -4
    ldrr SP MP
    str MP
    sts -1
    ajs 0
```

```
        ret
        ajs 0
L3:
        ajs 0
        ldc 0
        sts -4
        ldrr SP MP
        str MP
        sts -1
        ajs 0
        ret
L1:
        bra L5
L4:
        ldr MP
        ldrr MP SP
        ldc 2
        annote SP 0 0 green "2"
        ldl -2
        sta 2
        ldc 3
        annote SP 0 0 green "3"
        ldl -2
        ldc L0
        jsr
        ldl -2
        sta 1
        ldl -2
        lda 1
        annote SP 0 0 green "x"
        trap 0
        ajs 0
        ldc 0
        sts -3
        ldrr SP MP
        str MP
        sts 0
        ajs 1
        ret
L5:
        ldc 0
        annote SP 0 0 green "x (var)"
        ldc 0
        annote SP 0 0 green "multiplier (var)"
        ldr MP
        ldc L4
        jsr
        ajs -1
        ajs -2
```