

```
typedef enum logic[2:0] {S0, S1, S2, S3, S4} StateType;  
StateType ns, cs;
```

```
always_comb begin  
    CLRT1 = 0;  
    CLRT2 = 0;  
    SOAP = 0;  
    SPRAY = 0;  
    ns = S0;  
    case (cs)  
        S0: begin  
            if(~TOKEN)  
                ns = S0;  
            else  
                ns = S1;  
            end  
        S1: begin  
            CLRT1 = 1;  
            if(~TOKEN & ~START)  
                ns = S1;  
            else if(START)  
                ns = S4;  
            else if(TOKEN & ~START)  
                ns = S2;  
            end  
        S2: begin  
            SPRAY = 1;  
            SLRT2 = 1;  
            if(~T1DONE)  
                ns = S2;  
            else  
                ns = S3;  
            end  
        S3: begin  
            SOAP = 1;  
            CLRT1 = 1;  
            if(~T2DONE)  
                ns = S3;  
            else
```

```
        ns = S4;
    end
S4: begin
    SPRAY = 1;
    if(~T1DONE)
        ns = S4;
    else
        ns = S0;
    end
endcase
end
```

```
always_ff @(posedge clk)
cs <= ns;
```