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Binary Consensus

compareAndSet()

get()

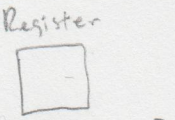
T_1 has value t_1

T_2 has value t_2

$t_1, t_2 \in \{0, 1\}$

```
TrinaryRegister r
consensus(t){
    if(r.CAS(⊥,t)){
        return t
    }
    return r.get()
}
```

k-nary consensus



Registers

r_0	⊥	0	1
r_1	⊥	0	1

} read as a unary number

T_1 has value t_1

T_2 has value t_2

T_3 has value t_3

$t_1, t_2, t_3 \in \{0, 1, 2\}$

k must be $\leq n$

```
TrinaryRegister r[n]
consensus(t){
    int index = t-1;
    int b = 1;
    for(int i=index; i<n; i++){
        if(i<0){
            continue;
        }
        if(i != index){
            b=0
        }
        if(!r[i].CAS(⊥,b)){
            break;
        }
    }
    for(int i = n-1; i > -1; i--){
        if(r[i].get() == 1){
            return i+1;
        }
    }
    return 0;
}
```

set value

get value