Exemplo Básico de Projeto de Sistemas Digitais:

Algoritmo para encontrar o maior valor armazenado num vetor

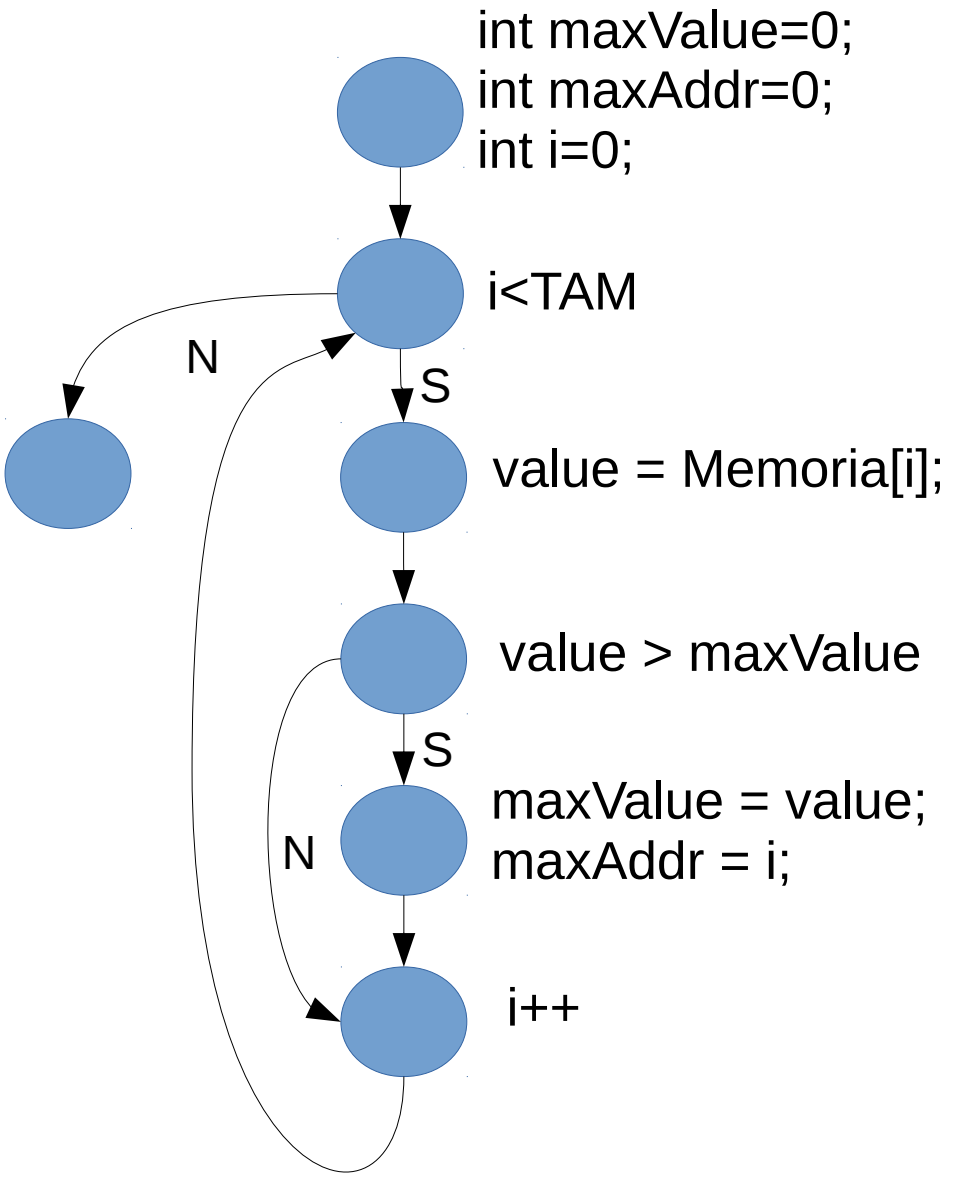
Algoritmo

- Algoritmo para identificar o maior valor da memória (vetor):

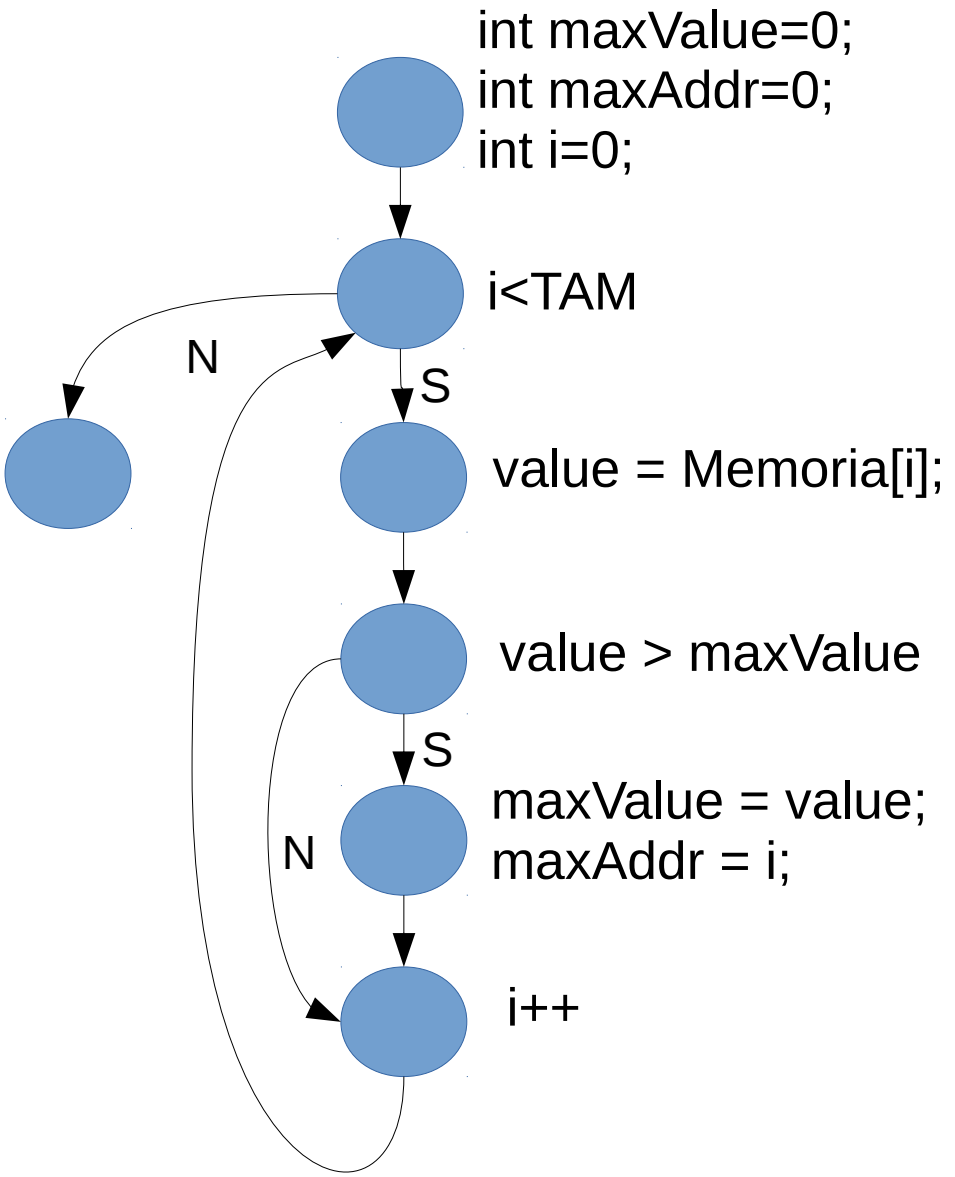
```
int maxValue=0;
int maxAddr=0;
for (int i=0; i<TAM; i++) {
    value = Memoria[i];
    if (value > maxValue) {
        maxValue = value;
        maxAddr = i;
    }
}
Memoria[TAM] = maxAddr;
Memoria[TAM+1] = maxValue;
```

FSMD

```
int maxValue=0;
int maxAddr=0;
for (int i=0; i<TAM; i++) {
    value = Memoria[i];
    if (value > maxValue) {
        maxValue = value;
        maxAddr = i;
    }
}
```



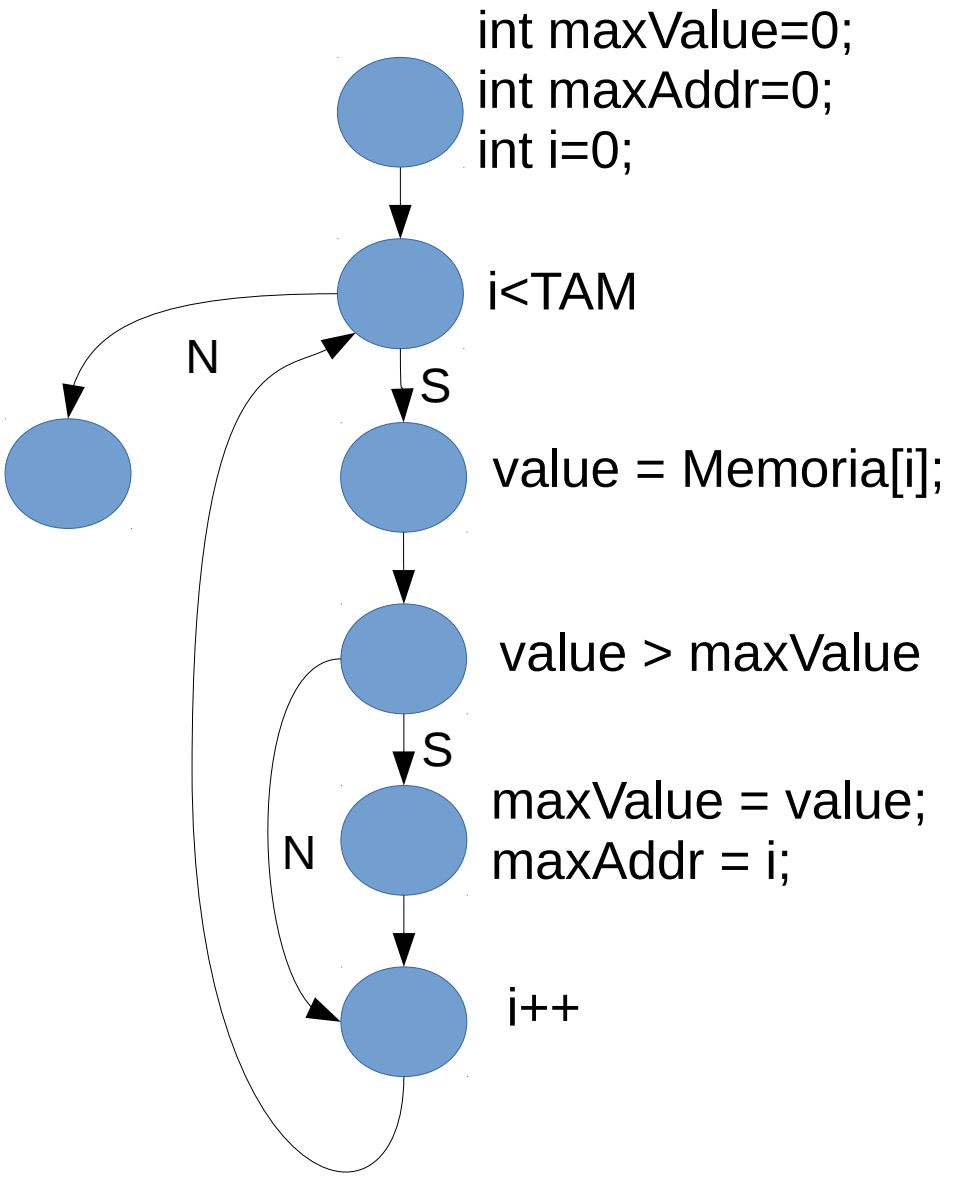
FSMD


int maxValue=0;
int maxAddr=0;
int i=0;
i<TAM
N
S
value = Memoria[i];
value > maxValue
S
maxValue = value;
maxAddr = i;
N
i++

Extração das Operações

Operações:

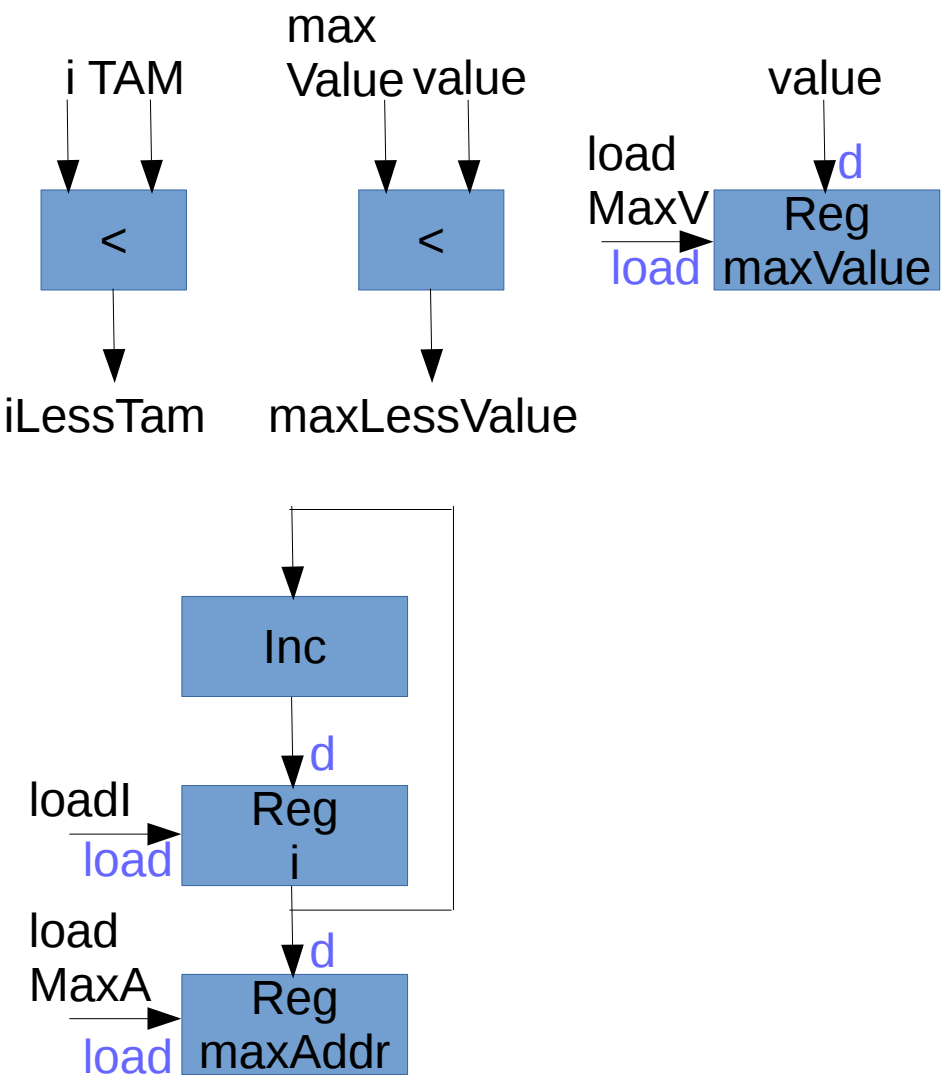
- i < TAM
- value > maxValue → maxValue < value
- value = Memoria[i]
- maxValue = value
- maxAdddr = i
- i++



Definição do Bloco Operativo

Operações:

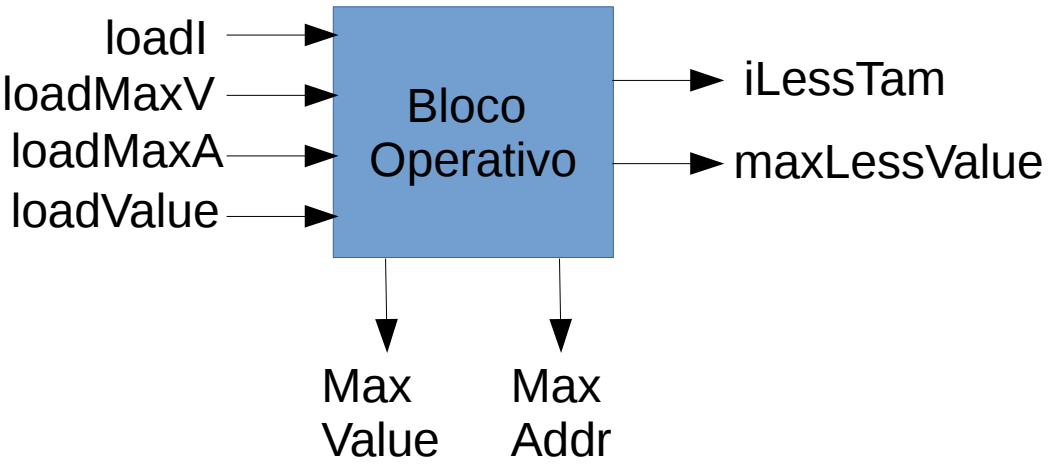
- i < TAM
- value > maxValue → maxValue < value
- value = Memoria[i]
- maxValue = value
- maxAdddr = i
- i++



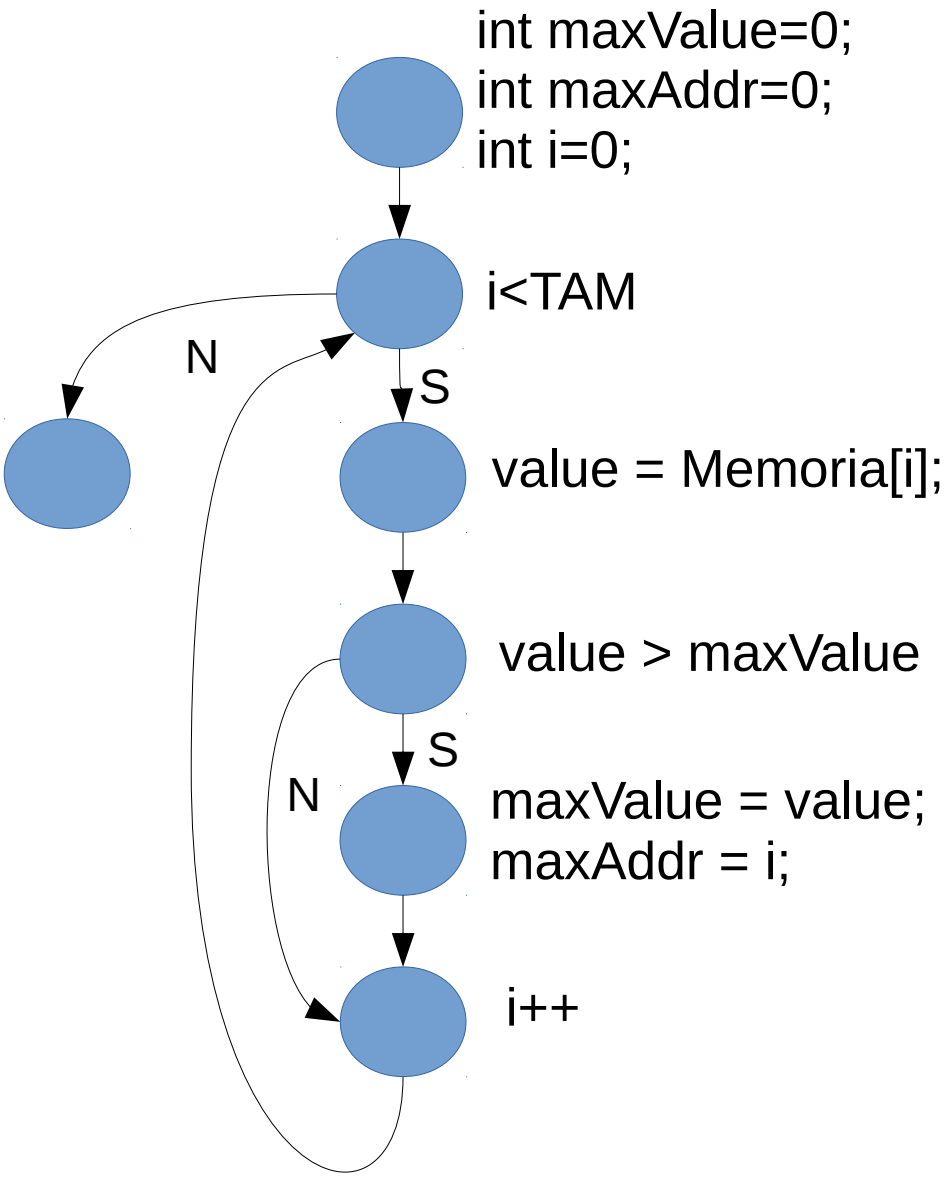
Definição do Bloco Operativo

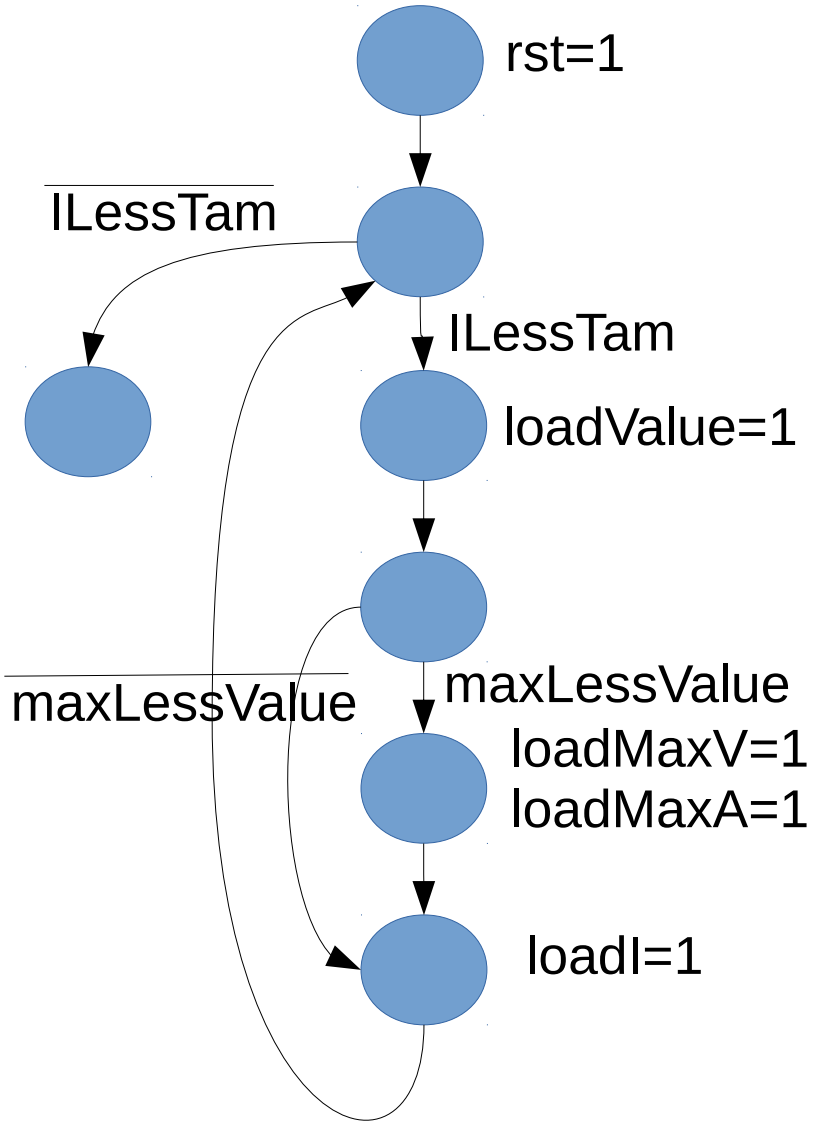
Operações:

- i < TAM
- value > maxValue → maxValue < value
- value = Memoria[i]
- maxValue = value
- maxAdddr = i
- i++

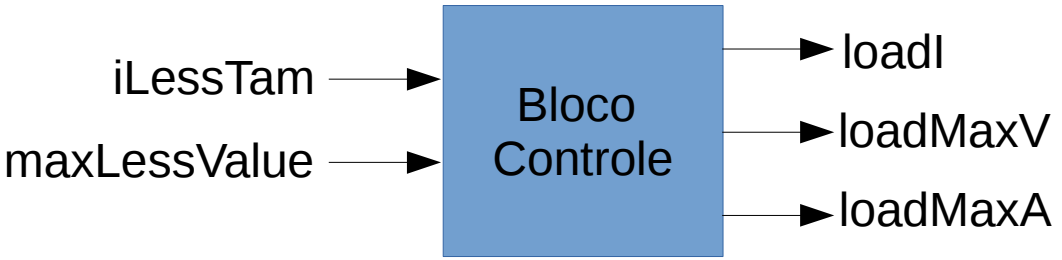


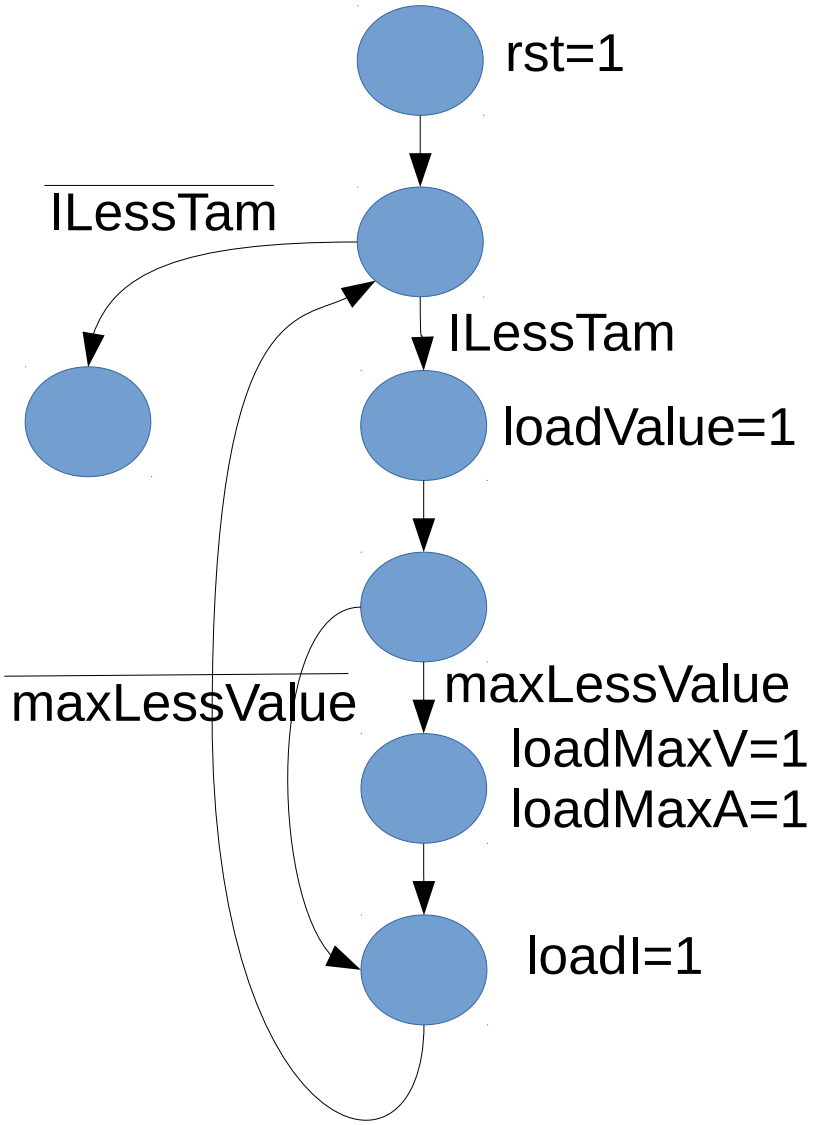
Refinamento do FSMD → BC



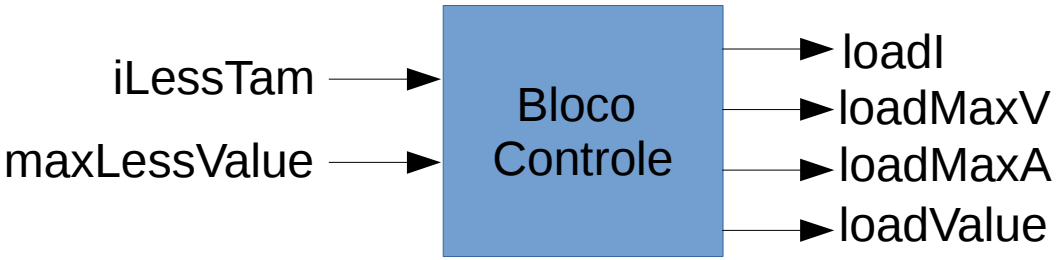


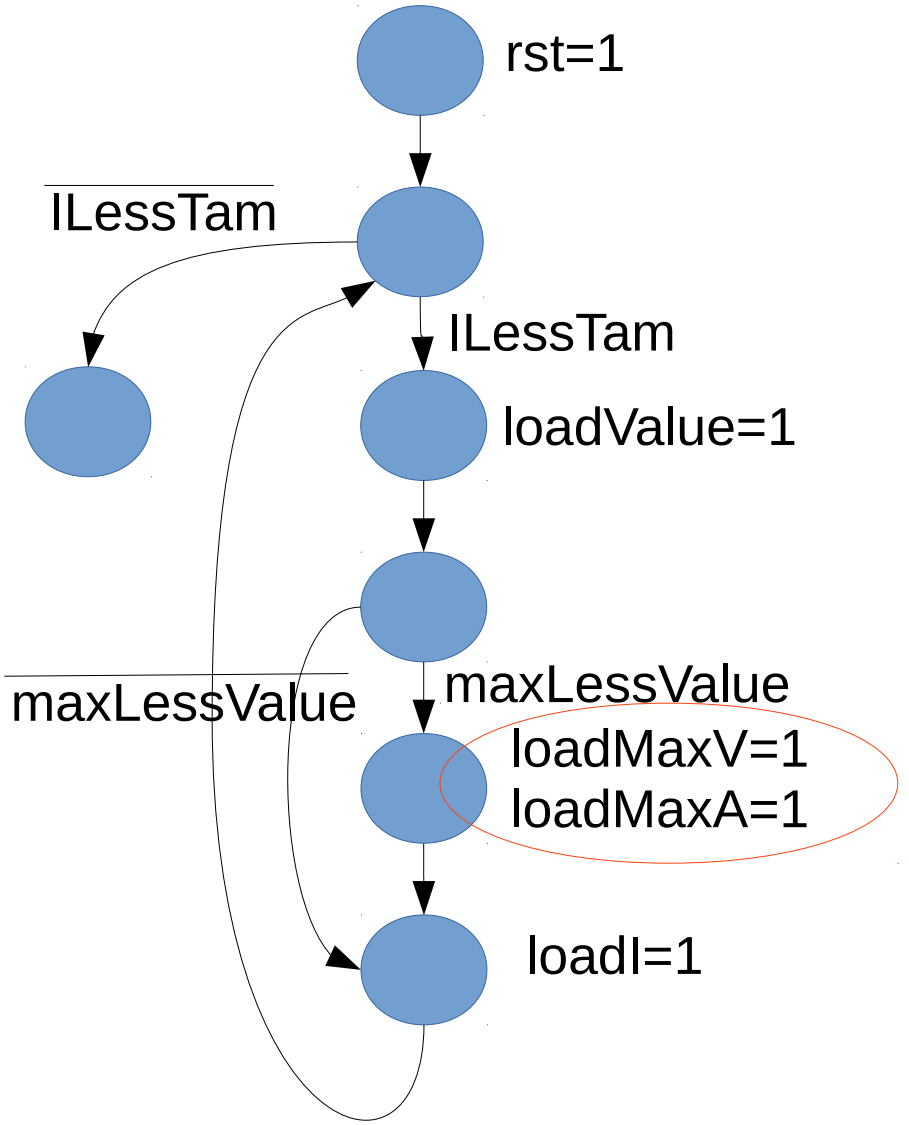
Refinamento do FSMD → BC



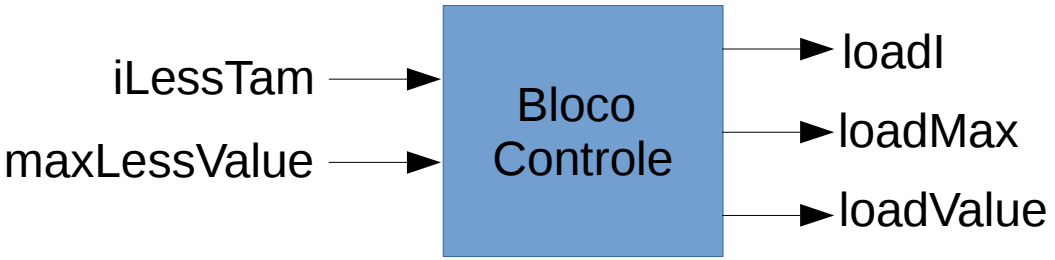


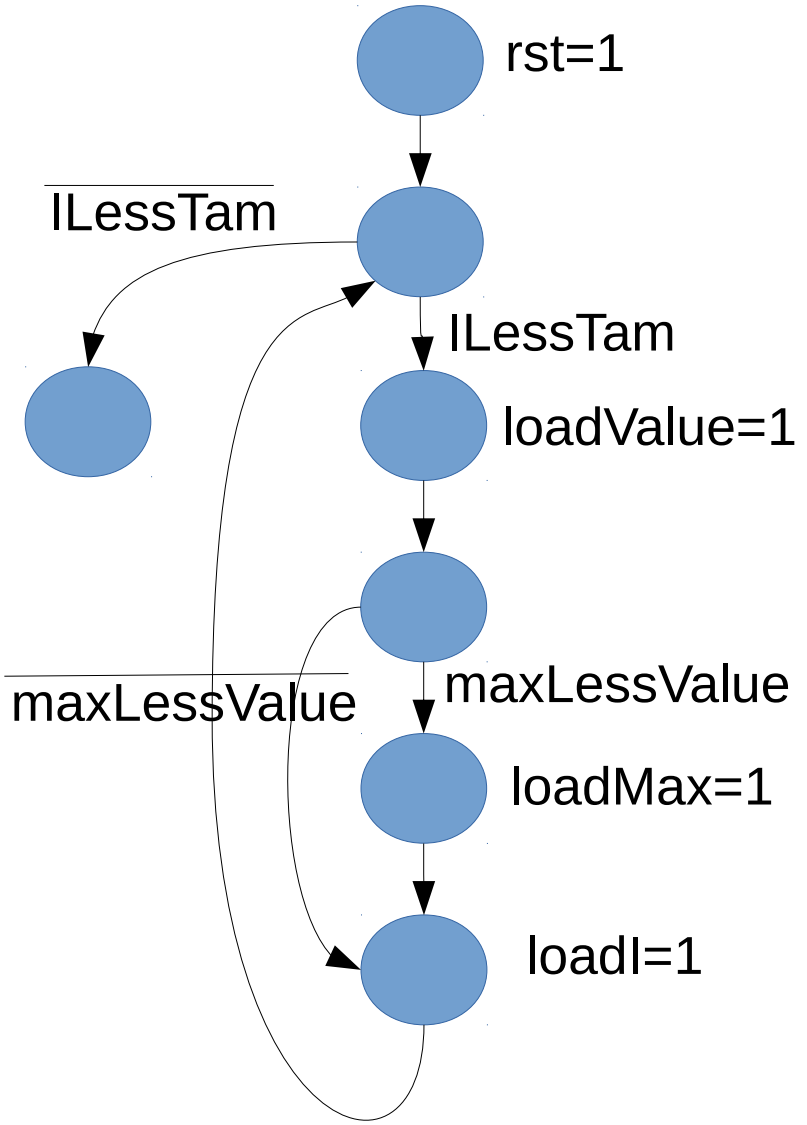
Refinamento do FSMD → BC



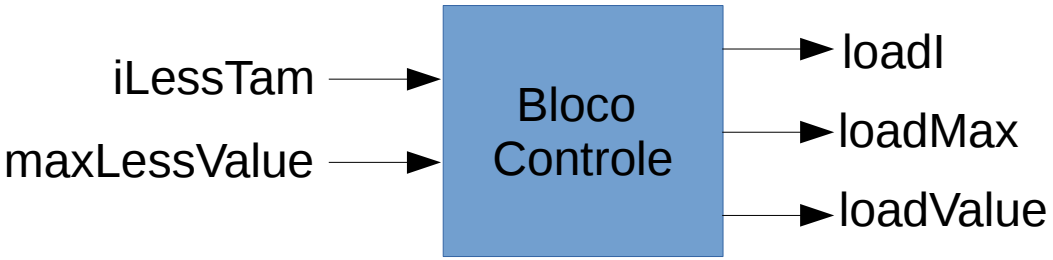


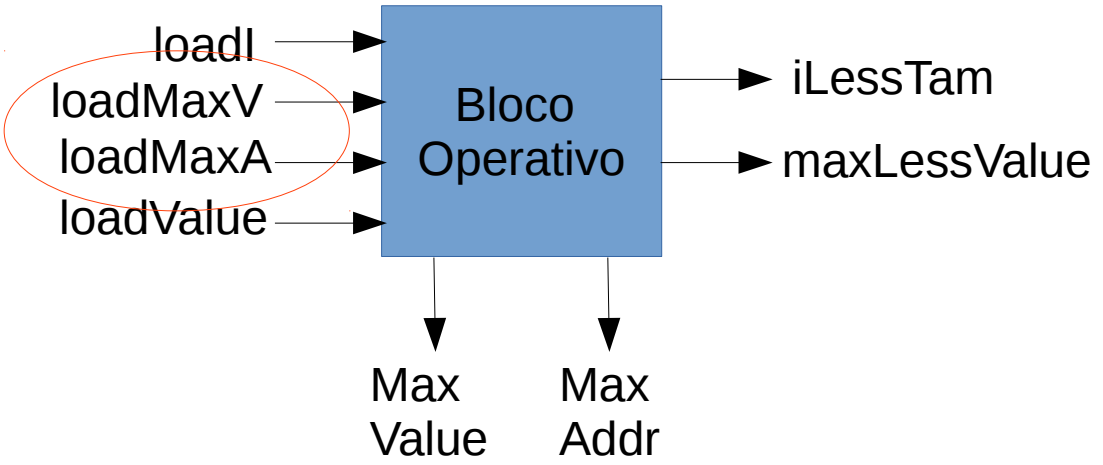
Refinamento do FSMD → BC



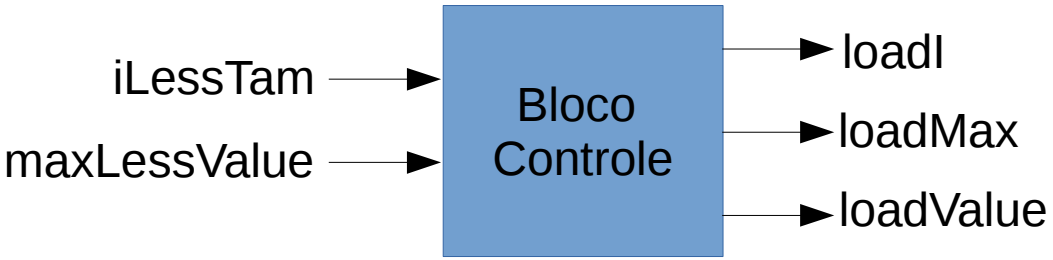


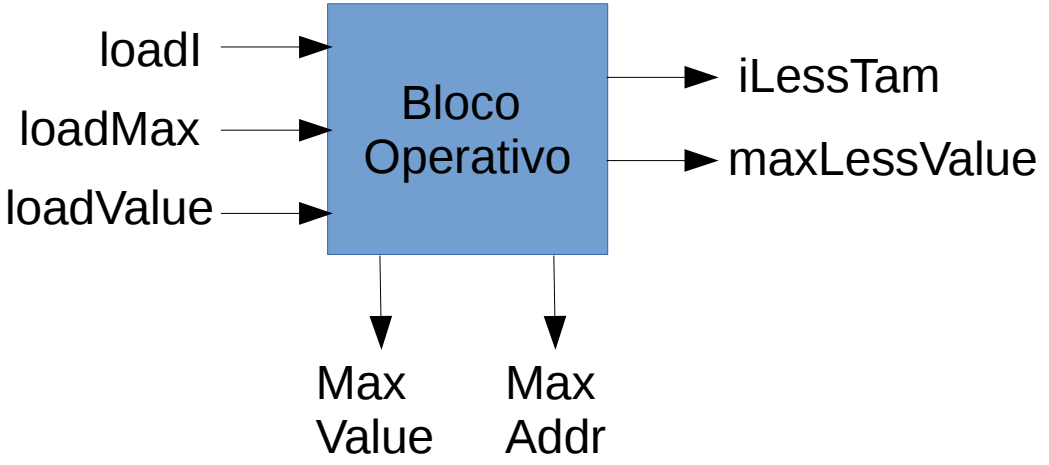
BC + BO = SD


iLessTam
maxLessValue
Bloco
Controle
loadI
loadMax
loadValue

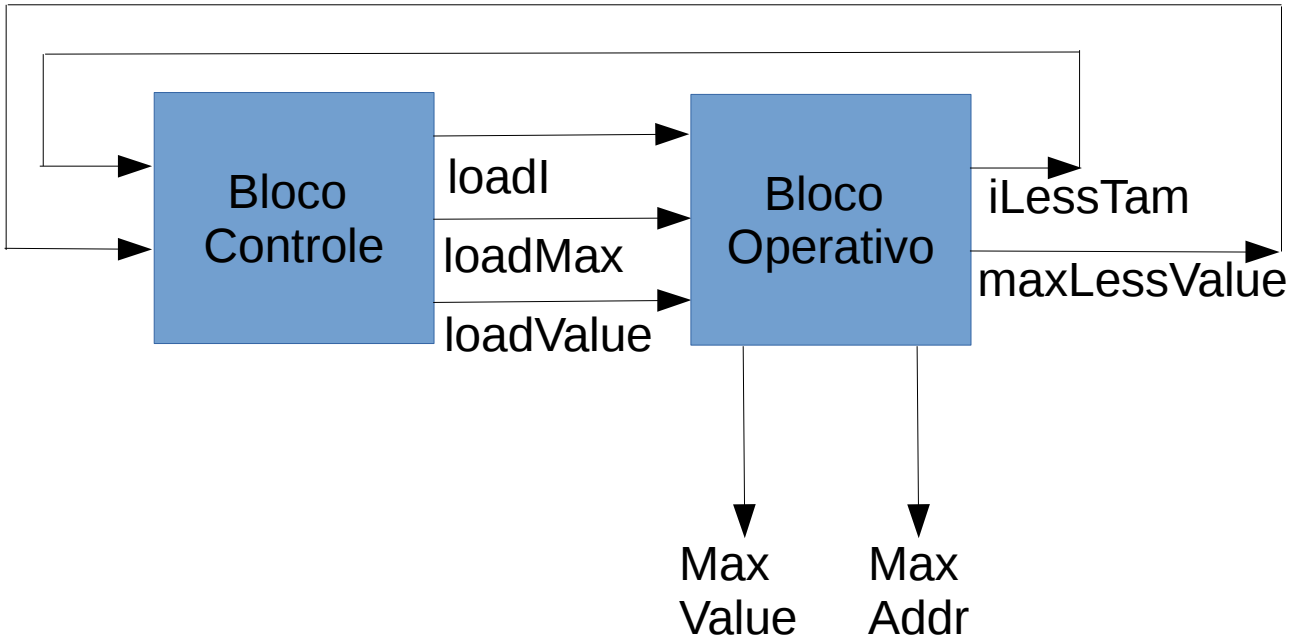

loadI
loadMaxV
loadMaxA
loadValue
Bloco
Operativo
iLessTam
maxLessValue
Max
Value
Max
Addr

BC + BO = SD

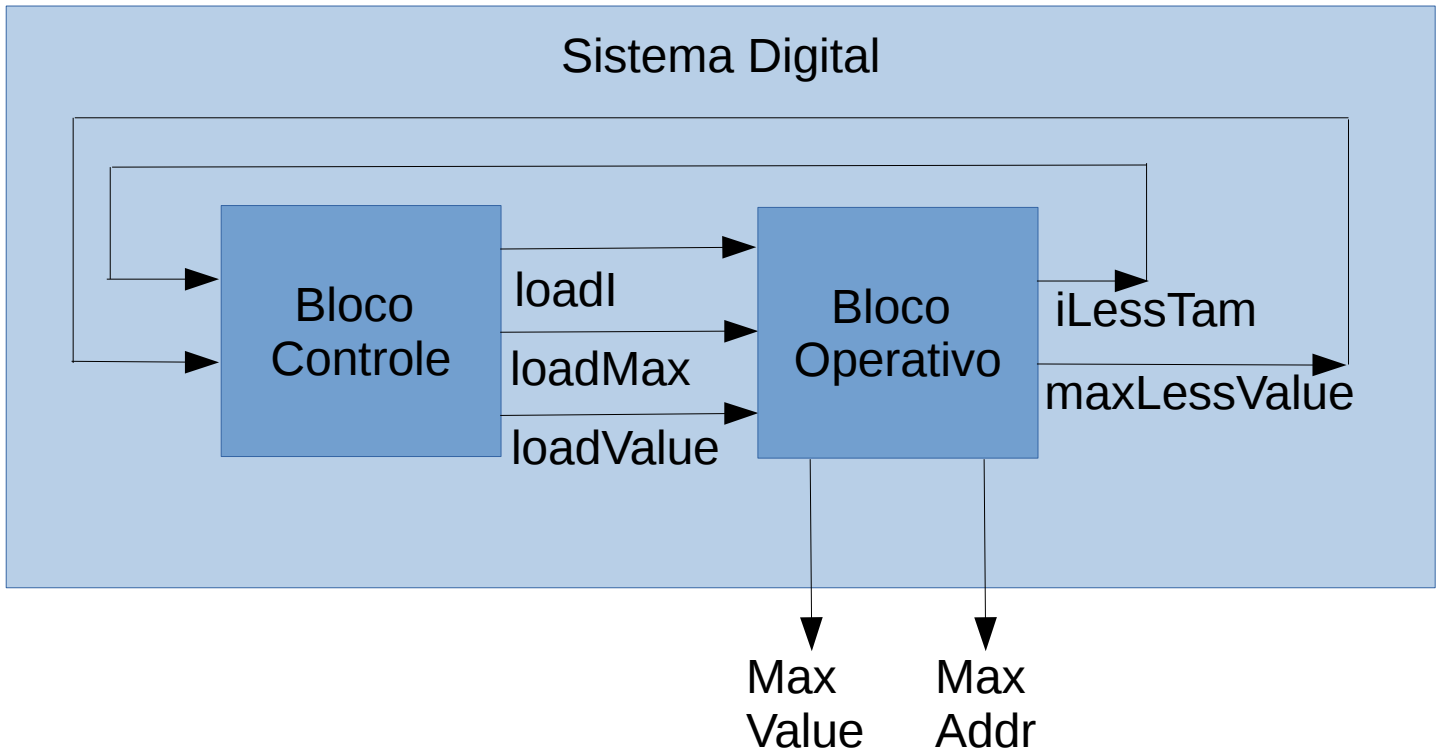

iLessTam
maxLessValue
Bloco
Controle
loadI
loadMax
loadValue


loadI
loadMax
loadValue
Bloco
Operativo
iLessTam
maxLessValue
Max
Value
Max
Addr

BC + BO = SD


Bloco
Controle
loadI
loadMax
loadValue
Bloco
Operativo
iLessTam
maxLessValue
Max
Value
Max
Addr

BC + BO = SD


Sistema Digital
Bloco
Controle
loadI
loadMax
loadValue
Bloco
Operativo
iLessTam
maxLessValue
Max
Value
Max
Addr