Concepts Informatiques

2018–2019

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```
int res=1,cpt=2,arg=7;
while(cpt<=arg) res*=cpt++;
return res;
```

pensée

calcul
récursion
fonction
objet
⋮

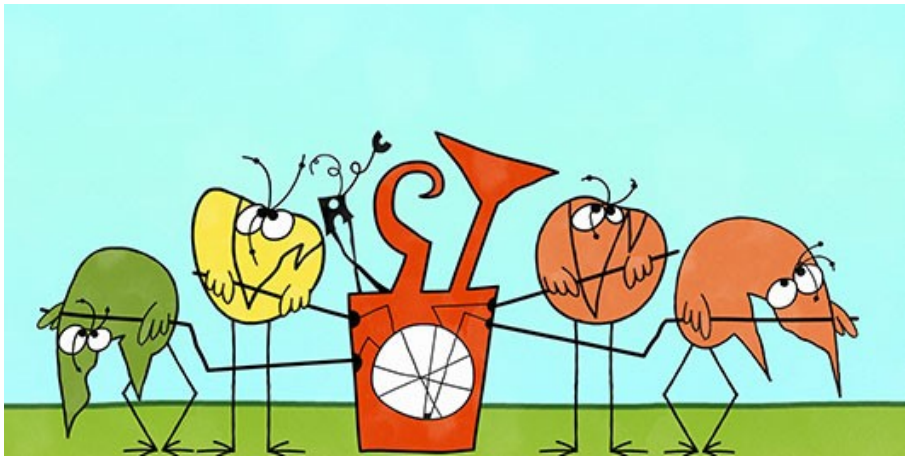
machine

circuit
pile
registre
mémoire
⋮

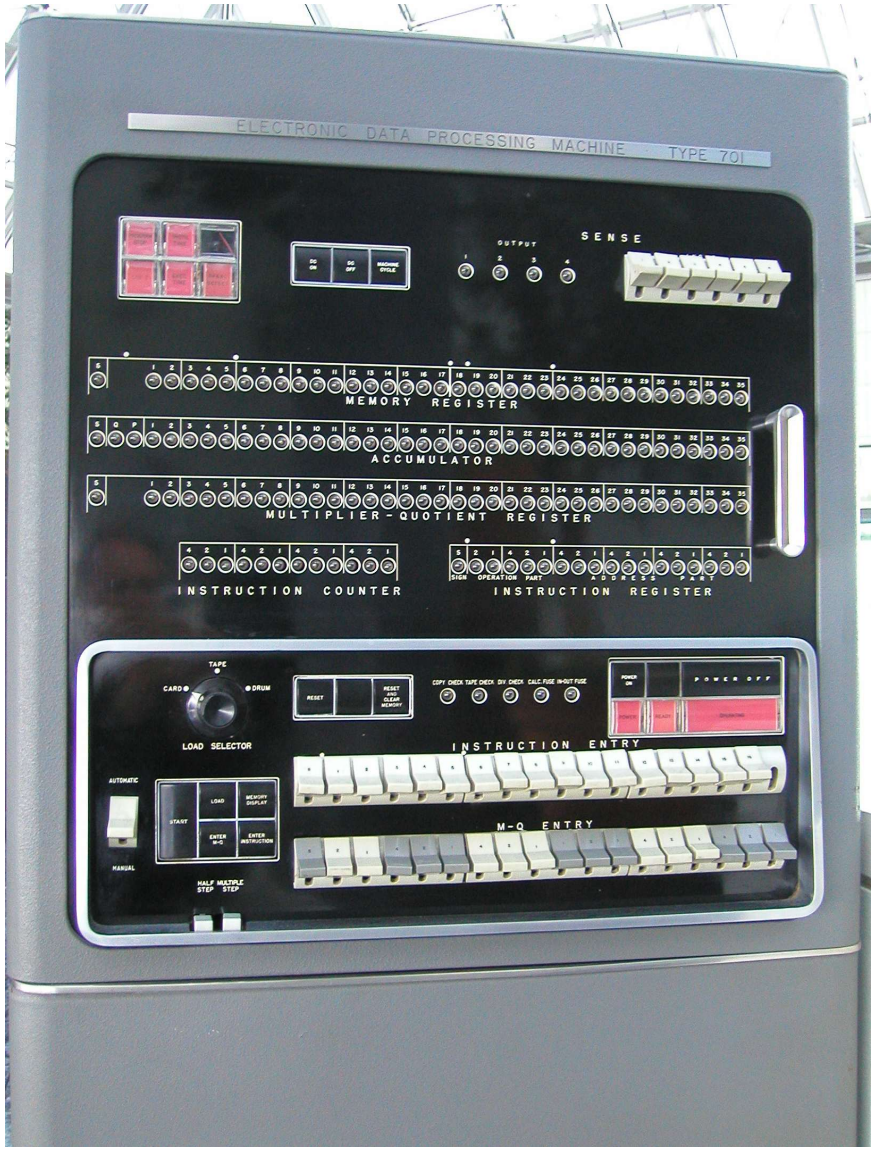
```
10111000 00000001 00000000
00000000 00000000 10111010
00000010 00000000 00000000
00000000 00111001 11011010
01111111 00000110 00001111
10101111 11000010 01000010
11101011 11110110 11000011
```

Traduire tout programme
dans une forme très proche
de celle acceptée par les machines

```
class Suite{
  static int n = 20;
  static int suite(int n){
    if(n==0) return 1;
    return suite(n-1)+2;
  }
  public static void main(String[] a){
    System.out.println("U("+n+")="+suite(n));
  }
}
```



```
class SuiteTraduite {
  static void main(String[] args) {
    int[] memoire = new int[100000000];
    int ic = 1;
    int sommet = 1;
    memoire[0] = 20;
    while(true) {
      switch(ic) {
        case 1:
          memoire[sommet] = 2;
          memoire[sommet+2] = memoire[0];
          sommet += 3;
          ic = 100;
          break;
        case 2:
          sommet -= 3;
          System.out.println("U("+memoire[0]+")="
                    +memoire[sommet+1]);
          ic++;
          break;
        case 3:
          System.exit(0);
        case 100:
          if(memoire[sommet-1]==0) ic++;
          else ic = 102;
          break;
        case 101:
          memoire[sommet-2] = 1;
          ic = memoire[sommet-3];
          break;
        case 102:
          memoire[sommet] = 103;
          memoire[sommet+2] = memoire[sommet-1]-1;
          sommet += 3;
          ic = 100;
          break;
        case 103:
          sommet -= 3;
          memoire[sommet-2] = memoire[sommet+1]+2;
          ic = memoire[sommet-3];
          break;
      }
    }
  }
}
```

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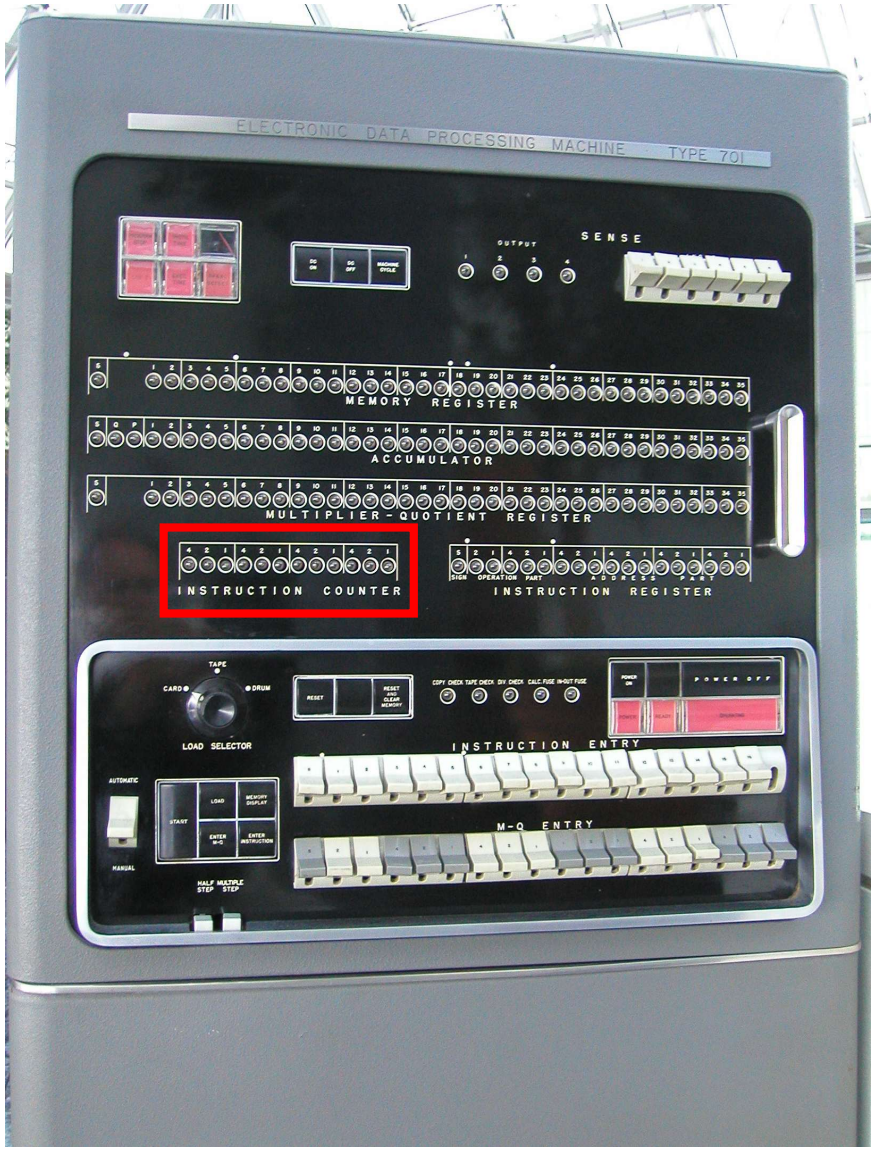


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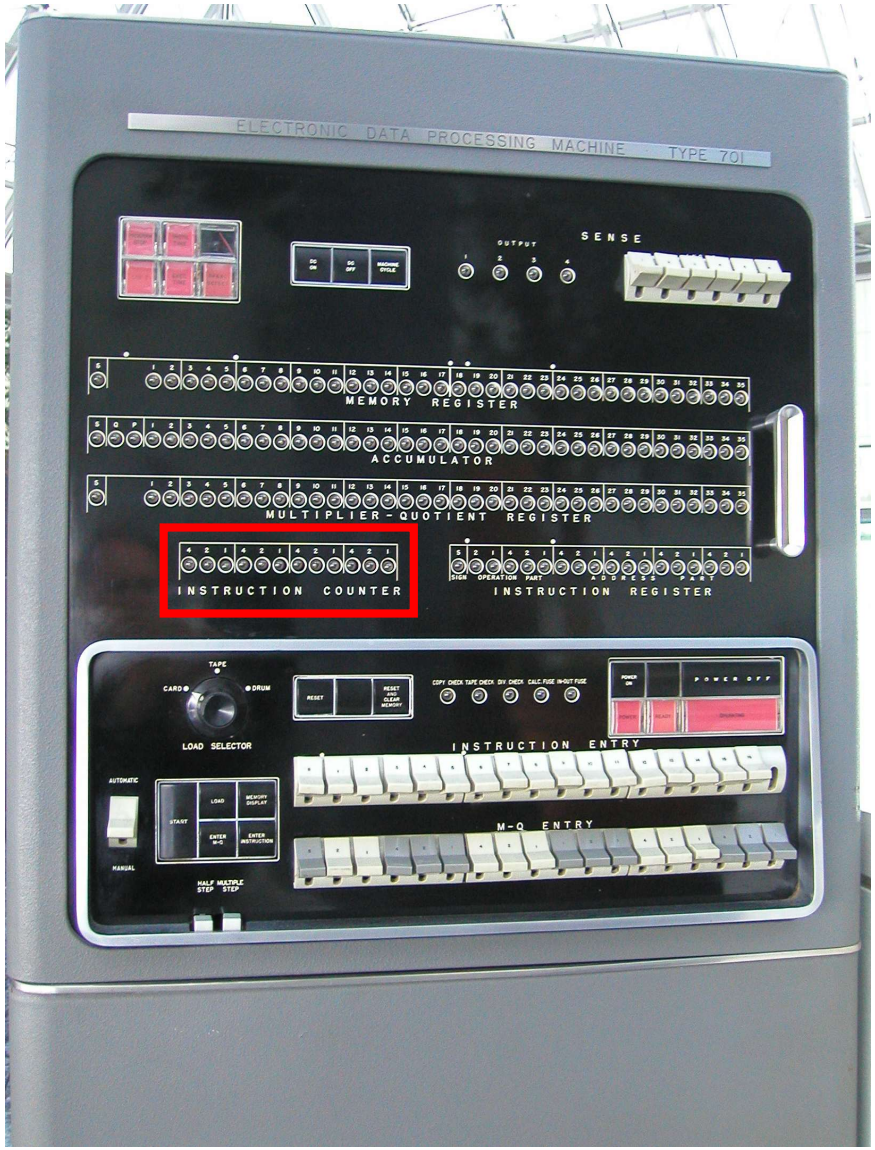


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