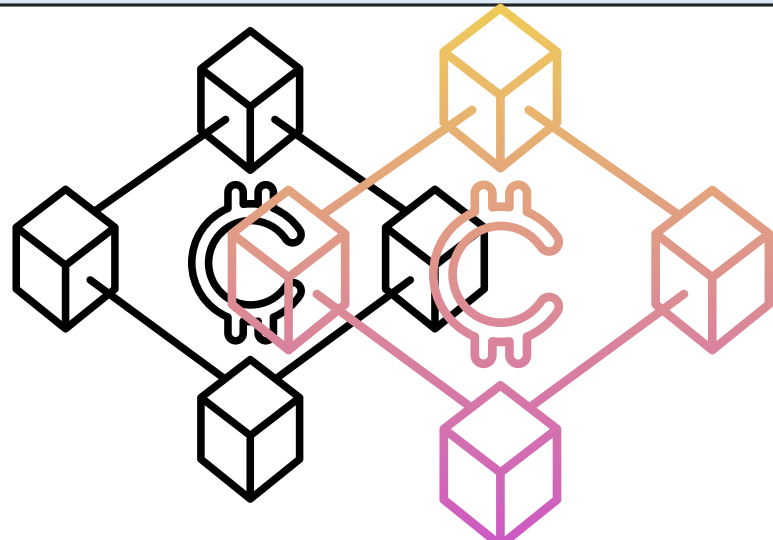


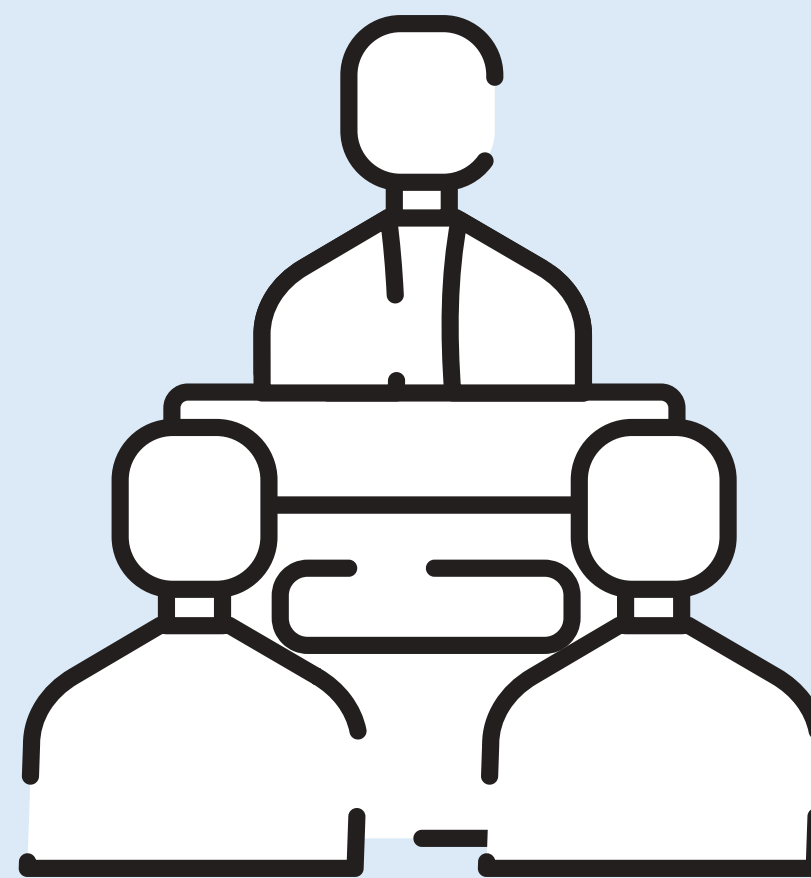
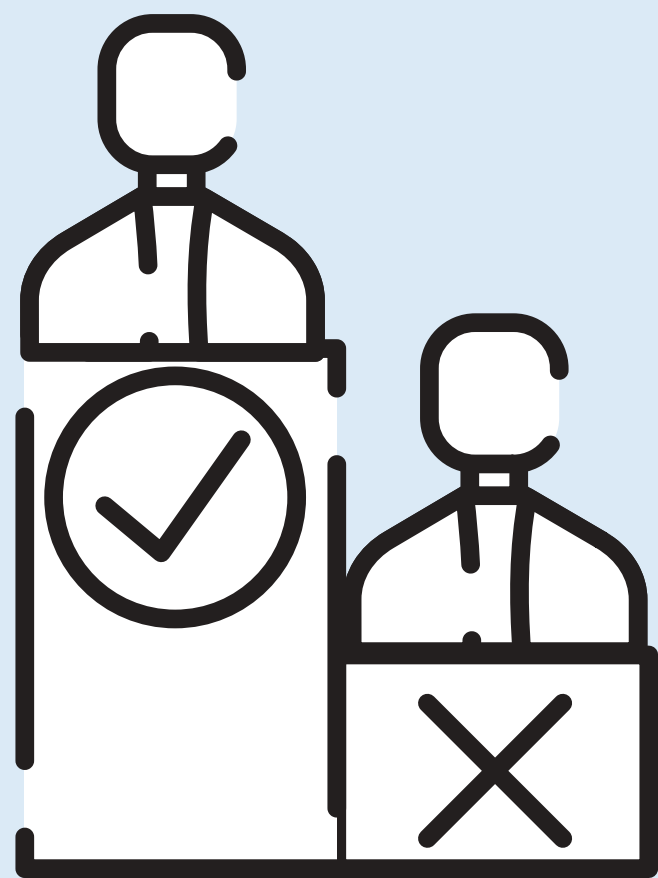
LU2IN006 – 2021/2022 – SEMESTRE 2

# PROJET : BLOCKCHAIN APPLIQUÉE À UN PROCESSUS ÉLECTORAL

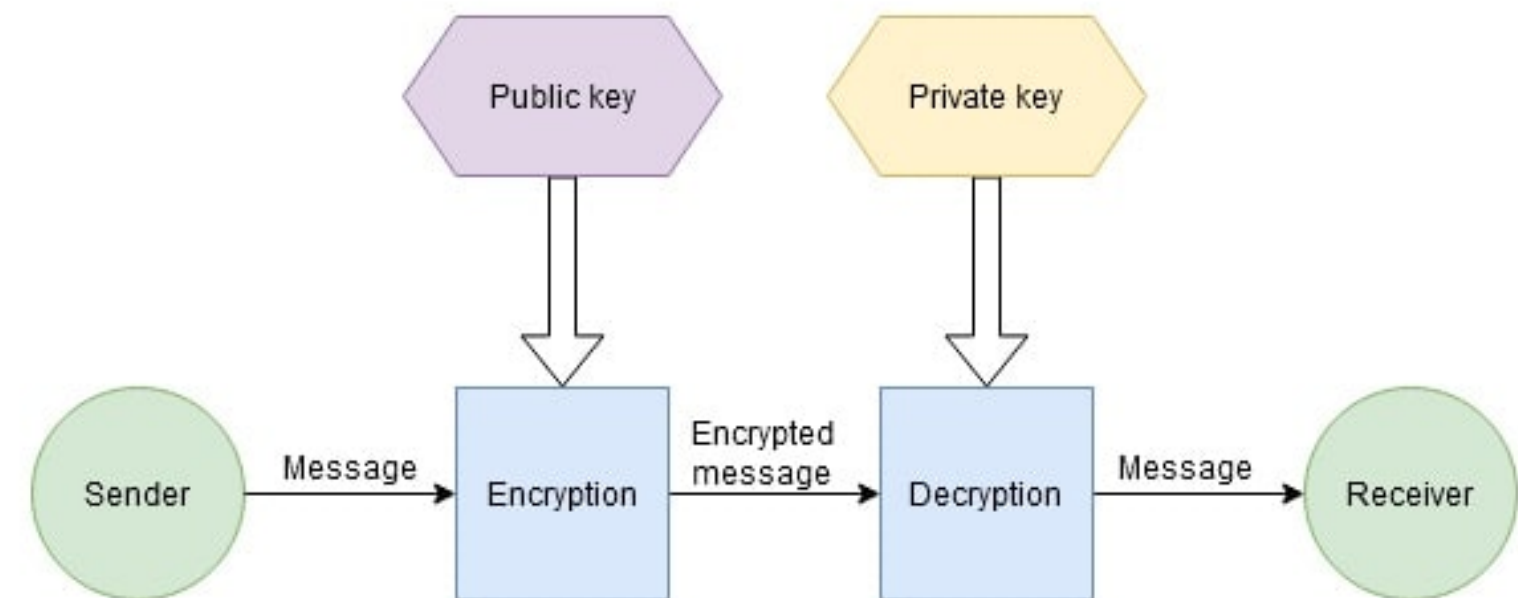
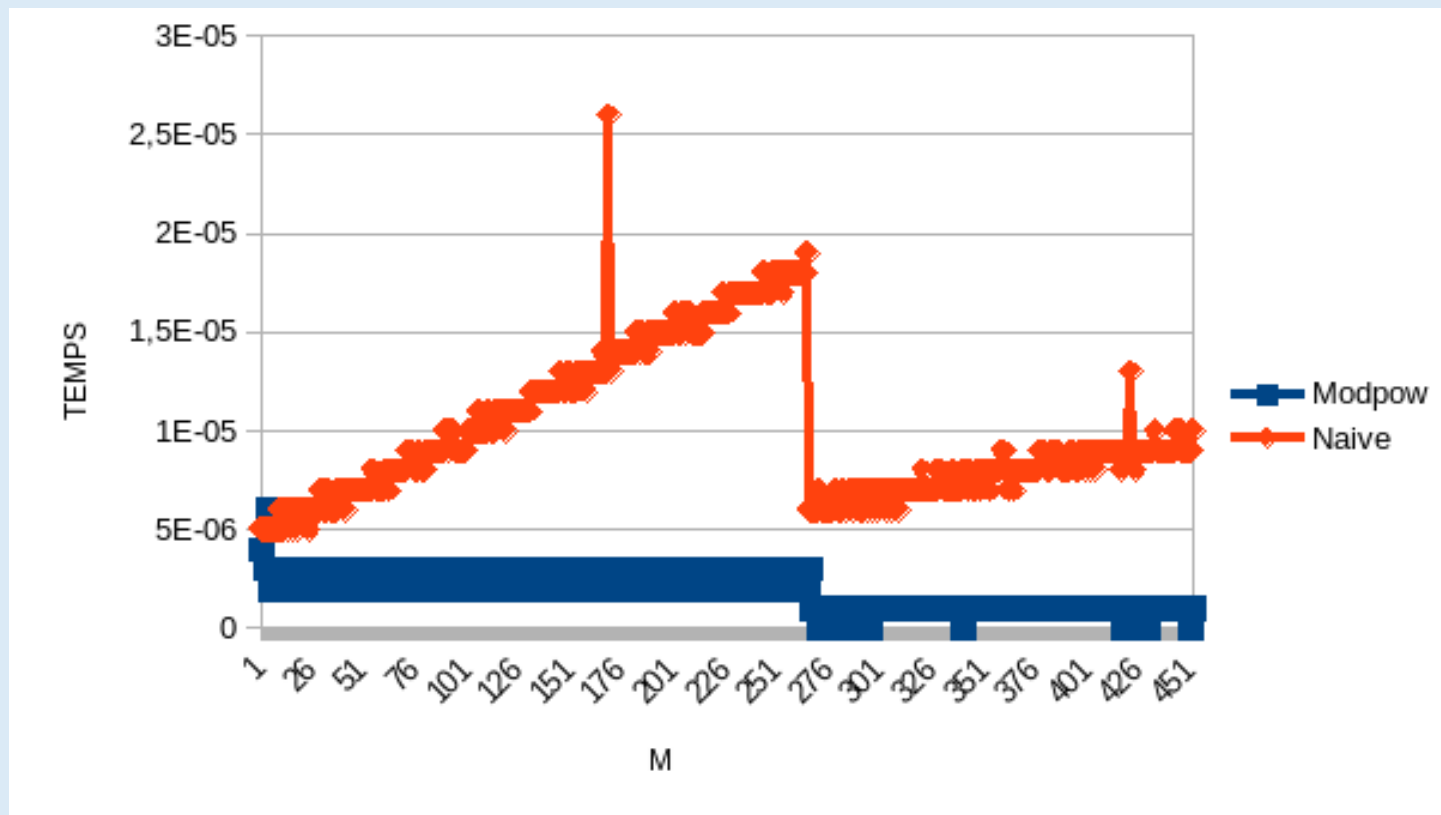


Kenza Kouddane

Sayfe-din Erehaihi



# PARTIE 1 : Outils Pour Cryptographier



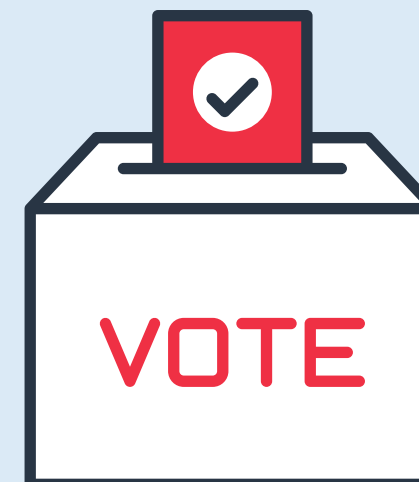
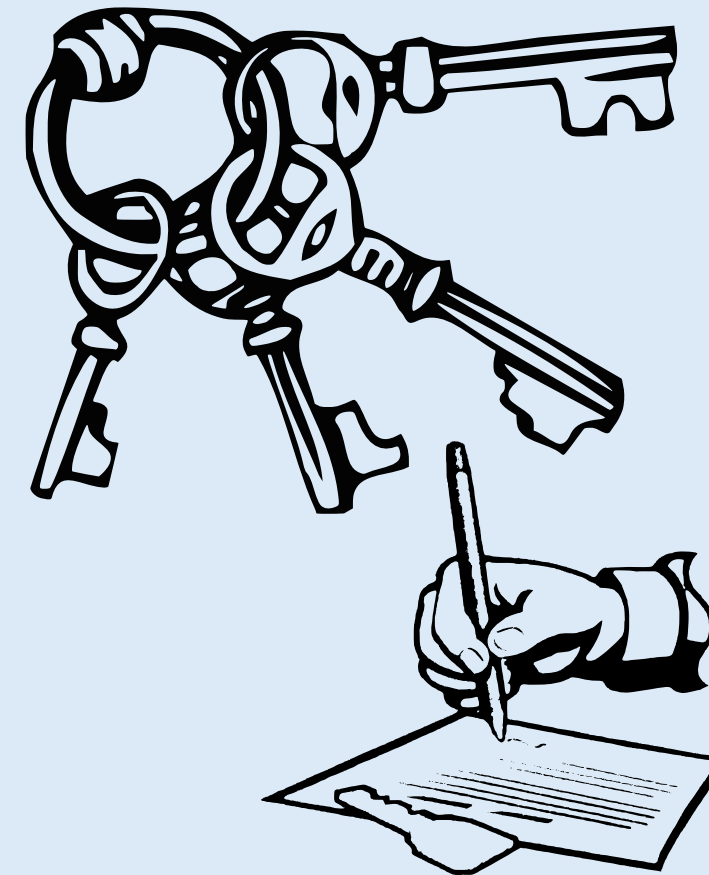
# PARTIE 2 : Système de déclarations sécurisés

```
//STRUCTURES

//Structure Key
typedef struct _key{
    long a;
    long n;
}Key;

//Structure Signature
typedef struct _signature{
    int len;
    long* tab;
}Signature;

//Structure Protected
typedef struct _prot{
    Key* pkey;           //clee publique
    char* mess;          //declaration de vote
    Signature* s;        //signature
}Protected;
```



# PARTIE 3 : Manipulation d'une base centralisée de déclarations

```
//STRUCTURES
typedef struct hashcell{
    //Cle public
    Key* key;
    // -1 si emplacement libredans Hashtable, si HashCell votant : , 0 pas vote, 1 vote sinon
    HashCell candidates : nombre de voix pour un candidat
    int val;
} HashCell;

typedef struct hashtable{
    HashCell** tab; //table de hachage
    int size; //taille de tab
} HashTable;
```

Compute\_Winner

probing lineaire

```
//STRUCTURES
//liste de Key
typedef struct _cellKey{
    Key* data;
    struct _cellKey* next;
} CellKey;

//liste de protected
typedef struct _cellProtected{
    Protected* data;
    struct _cellProtected* next;
} CellProtected;
```

# PARTIE 4 : Mécanisme de consensus

```
//STRUCTURES

typedef struct block{
    Key* author;
    CellProtected* votes; //liste de declaration
    unsigned char* hash;
    unsigned char* previous_hash; //valeur hache du block precedent
    int nonce;
}Block;
```

Block Genesis

Proof of Work

SHA256

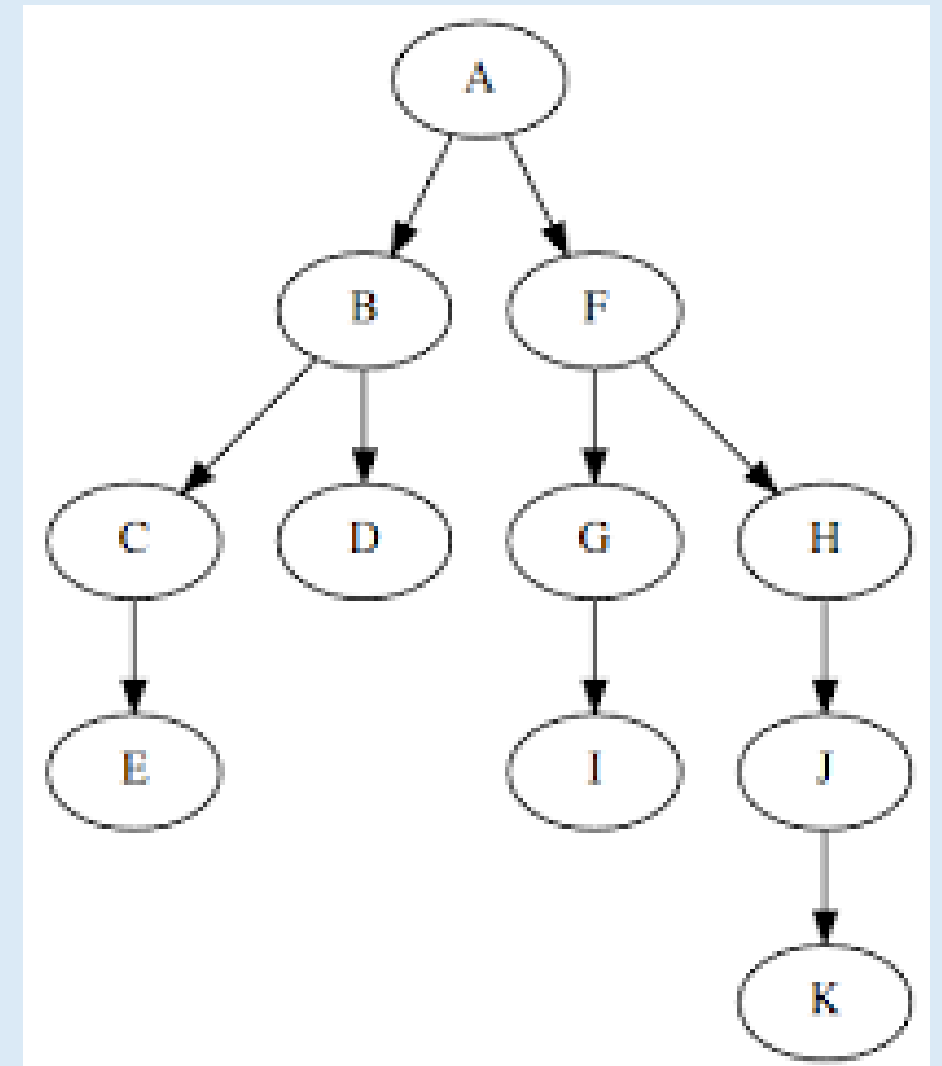
Valeur Hexadecimal

# PARTIE 5 : Base décentralisée de déclarations

*"stocké sur les serveurs de ses utilisateurs et mis à jour en temps réel"*

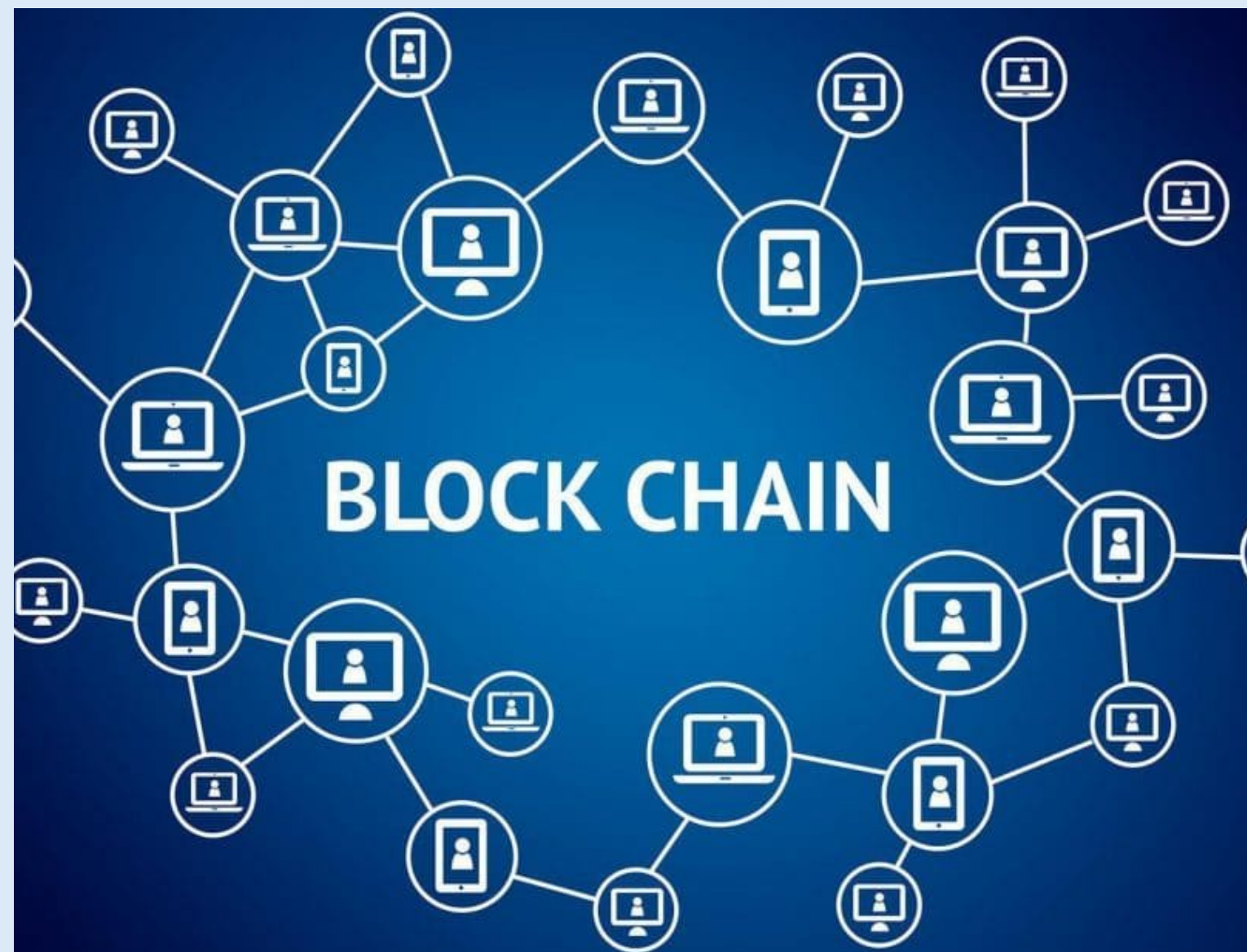
```
//STRUCTURES

typedef struct block_tree_cell{
    Block* block;
    struct block_tree_cell* father;
    struct block_tree_cell* firstChild;
    struct block_tree_cell* nextBro;
    int height;
}CellTree;
```





# conclusion



Transparence et Sécurité

sans organe central de contrôle

Vote Electronique

au-delà du bureau de vote

Information Immédiate

réseau de blockchain