**GBP-13 Define token format (GRC20)**

**I. Overview**

- GRC20 token format is based on ERC20 token format, and the smart contract is written in decorated JavaScript (djs).

- It contains many state variables:

* \_balances [1]
* \_allowances [2]
* \_totalSupply [3]
* \_name [4]
* \_symbol [5]
* \_decimals [6]

And methods:

* constructor(name\_ : string, symbol\_ : string, totalSupply\_ : number, decimals\_ : number) [1]
* balancesOf(account : string) : number [2]
* transfer(recipient : string, amount : number) : boolean [3]
* allowance(owner : string, spender : string) [4]
* approve(spender : string, amount : number) : boolean [5]
* transferFrom(sender : string, recipient : string, amount : number) : boolean [6]
* increaseAllowance(spender : string, addedValue : number) : boolean [7]
* decreaseAllowance(spender : string, subtractedValue : number) : boolean [8]
* \_transfer(sender : string, recipient : string, amount : number) [9]
* \_mint(account : string, amount : number) [10]
* \_burn(account : string, amount : number) [11]
* \_approve(owner : string, spender : string, amount : number) [12]
* \_beforeTokenTransfer(from : string, to : string, amount : number) [13]

**II. Contract State**

**[1]:** mapping between account address and token value

**[2]:** mapping allowance of an user to others users

**[3]:** total current token in market

**[4]:** name of token

**[5]:** symbol of token

**[6]:** number of decimals of a token

**III. Contract’s Methods**

[1]: initial value of \_*name, \_symbol, \_totalSupply, \_decimals*

[2]: check balances of an account address

[3]: transfer token to others account address

[4]: number of token an user can take from others accounts’s balances

[5]: assign \_*allowances* to a number

[6]: transfer token between 2 accounts

[7]: add an amount of token to *\_allowances*

[8]: subtract an amount of token from *\_allowances*

[9]: transfer token between 2 accounts (private method)

[10]: add an amount of token to *\_totalSupply* andan account’s balances

[11]: subtract an amount of token from \_*totalSupply* and an account’s balances

[12]: assign \_*allowances* to a number (private method)

[13]: do anything before transfering token