**build\_MT\_tree():**

* input:
  + file: vector
* output: nodes:
  + 2D array

**gen\_challenge():**

* Output:
  + A pseudorandom key
  + Number of challenges

**gen\_proof():**

* Input:
  + File
  + Nodes
  + The pseudorandom key
* Output:
  + 2D array

**verify\_proof():**

* Input:
  + Root node
  + Proof
  + The pseudorandom key
* Output:
  + Boolean: true/false