Sha 256 – in node

1. Open a new folder (in our case we will name it "sha256")
2. Open the terminal and move to the path of the new directory that you created in step 1
3. Init the directory that you created in step 1, as a npm project, with this command:
   `npm init`
4. Add to the directory that you created in step 1, a new npm package with this command:
   `npm i crypto-js`
5. Add to the directory that you created in step 1, a new file named "app.js" with this content:

```
const {SHA256} = require('crypto-js');

//------example to testing the hash--------
 const message = '123456';
 const hash = SHA256(message).toString();

 console.log(`Message: ${message}`);
 console.log(`Hash: ${hash}`);
 console.log(`Hash length: ${hash.length}`);
```

6. Run the "app.js" file with this command:

   `node app.js`

   And get this result:

```
Message: Test hash sha256
Hash:
13f635ae08cf29ca78f9d4a6b5896bcfc35d3a877164e1fa5e3678ba784be1b8
Hash length: 64
```

JWT – in node

1. Open a new folder (in our case we will name it "jwt")
2. Open the terminal and move to the path of the new directory that you created in step 1
3. Init the directory that you created in step 1, as a npm project, with this command:
   `npm init`
4. Add to the directory that you created in step 1, two new npm package with this command:

   `npm i crypto-js jsonwebtoken`

5. Add to the directory that you created in step 1, a new file named "app.js" with this content:

```javascript
const jwt = require('jsonwebtoken');
const {SHA256} = require('crypto-js');

var data = {
 password: SHA256("1234").toString(),
 name:"Bob"
};

var token = jwt.sign(data, 'my secret');
console.log('encoded',token);

var decoded = jwt.verify(token, 'my secret');
console.log('decoded', decoded);
```

6. Run the "app.js" file with this command:

   `node app.js`

   And get this result:

   encoded

   eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJwYXNzd29yZCI6IjAzYWM2NzQyMTZmM2UxNWM3NjFlZTFhNWUyNTVmM DY3OTUzNjIzYzhiMzg4YjQ0NTllMTNmOTc4ZDdjODQ2ZjQiLCJuYW1lIjoiQm9iIiwiaWF0IjoxNTU1NDk4OTc3fQ.HjiRis71 _C9Tt5agIt2oEcEnn1fxDh64hLybyUnkCCo

   decoded {

   password:'03ac674216f3e15c761ee1a5e255f067953623c8b388b4459e13f978d7c846f4',

    name: 'Bob',

    iat: 1555498977 }