Name: Mohnish Kumaar D

Reg.no: 20BPS1152

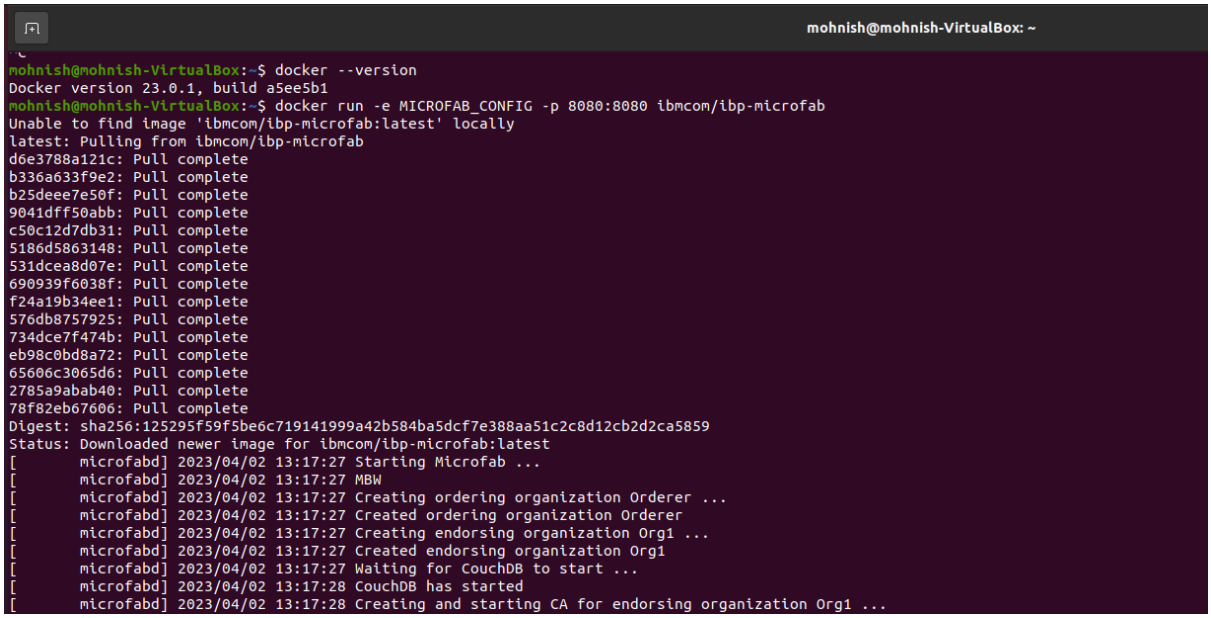
CSE4080

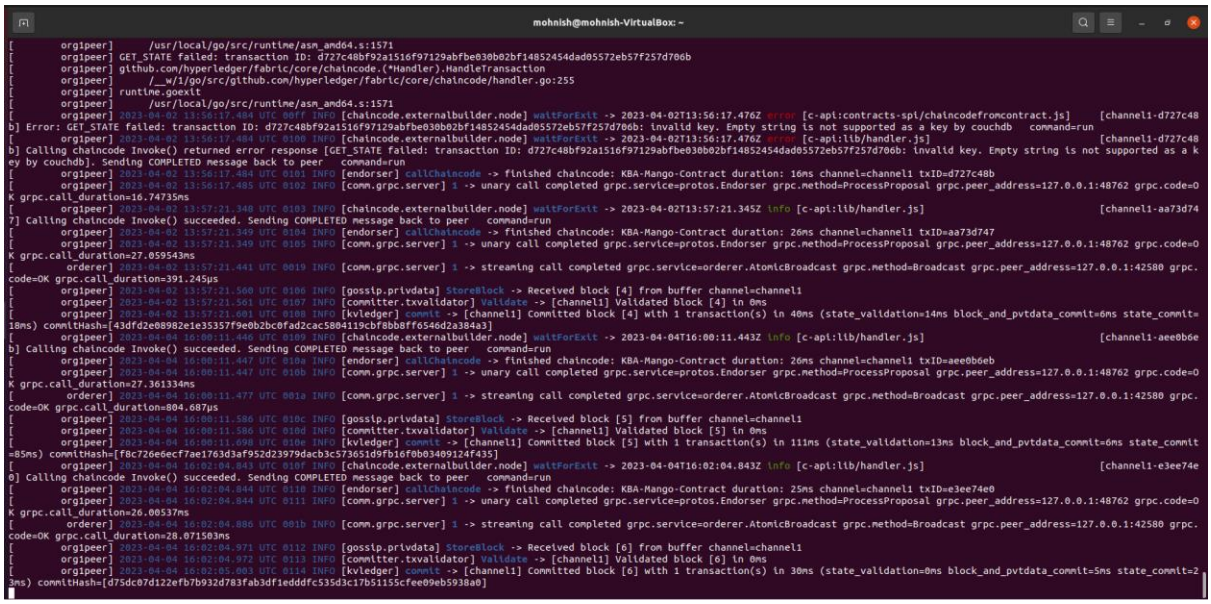
BLOCKCHAIN TECHNOLOGY

LAB ASSIGNMENT-5

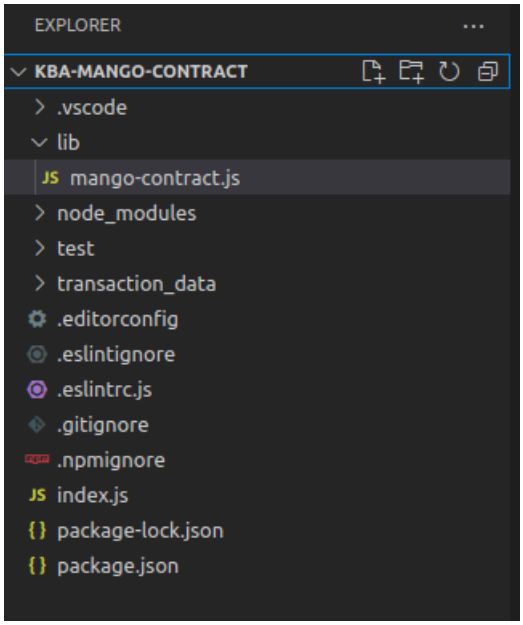
Build a hyperledger fabric using IBM Blockchain platform

Installing all the dependencies:





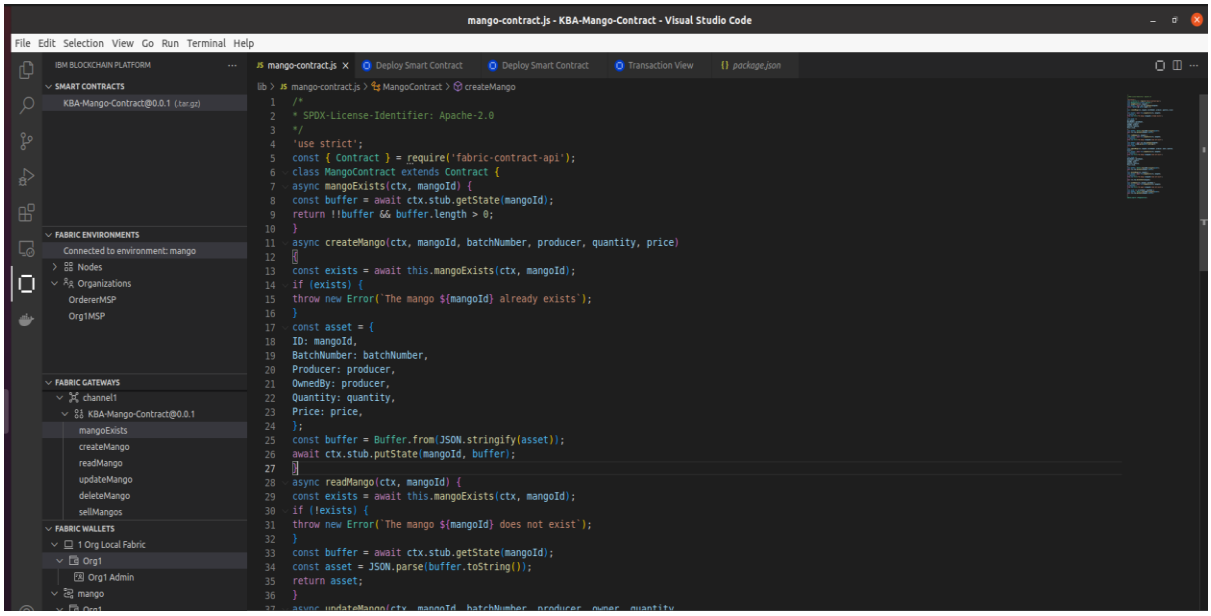
Creating new Smart Contract Project:



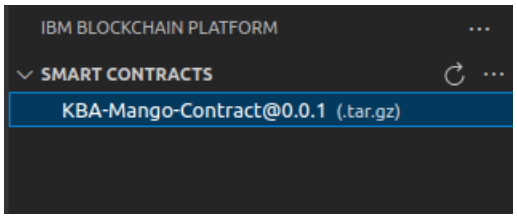
Code:

```
/*
* SPDX-License-Identifier: Apache-2.0
*/
'use strict';
const { Contract } = require('fabric-contract-api');
class MangoContract extends Contract {
async mangoExists(ctx, mangoId) {
const buffer = await ctx.stub.getState(mangoId);
return !!buffer && buffer.length > 0;
}
async createMango(ctx, mangoId, batchNumber, producer, quantity, price)
{
const exists = await this.mangoExists(ctx, mangoId);
if (exists) {
throw new Error(`The mango ${mangoId} already exists`);
}
const asset = {
ID: mangoId,
BatchNumber: batchNumber,
Producer: producer,
OwnedBy: producer,
Quantity: quantity,
Price: price,
};
const buffer = Buffer.from(JSON.stringify(asset));
await ctx.stub.putState(mangoId, buffer);
}
async readMango(ctx, mangoId) {
```

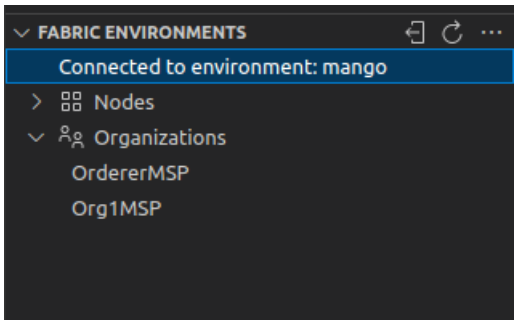
```
const exists = await this.mangoExists(ctx, mangoId);
if (!exists) {
throw new Error(`The mango ${mangoId} does not exist`);
}
const buffer = await ctx.stub.getState(mangoId);
const asset = JSON.parse(buffer.toString());
return asset;
}
async updateMango(ctx, mangoId, batchNumber, producer, owner, quantity,
price) {
const exists = await this.mangoExists(ctx, mangoId);
if (!exists) {
throw new Error(`The mango ${mangoId} does not exist`);
}
const asset = {
BatchNumber: batchNumber,
Producer: producer,
OwnedBy: owner,
Quantity: quantity,
Price: price,
};
const buffer = Buffer.from(JSON.stringify(asset));
await ctx.stub.putState(mangoId, buffer);
}
async deleteMango(ctx, mangoId) {
const exists = await this.mangoExists(ctx, mangoId);
if (!exists) {
throw new Error(`The mango ${mangoId} does not exist`);
}
await ctx.stub.deleteState(mangoId);
}
async sellMangos(ctx, mangoId, ownerName) {
const exists = await this.mangoExists(ctx, mangoId);
if (!exists) {
throw new Error(`The apple ${mangoId} does not exist`);
}
const asset = { currentOwner: ownerName };
const buffer = Buffer.from(JSON.stringify(asset));
await ctx.stub.putState(mangoId, buffer);
}
}
module.exports = MangoContract;
```



Packing Smart Contract:

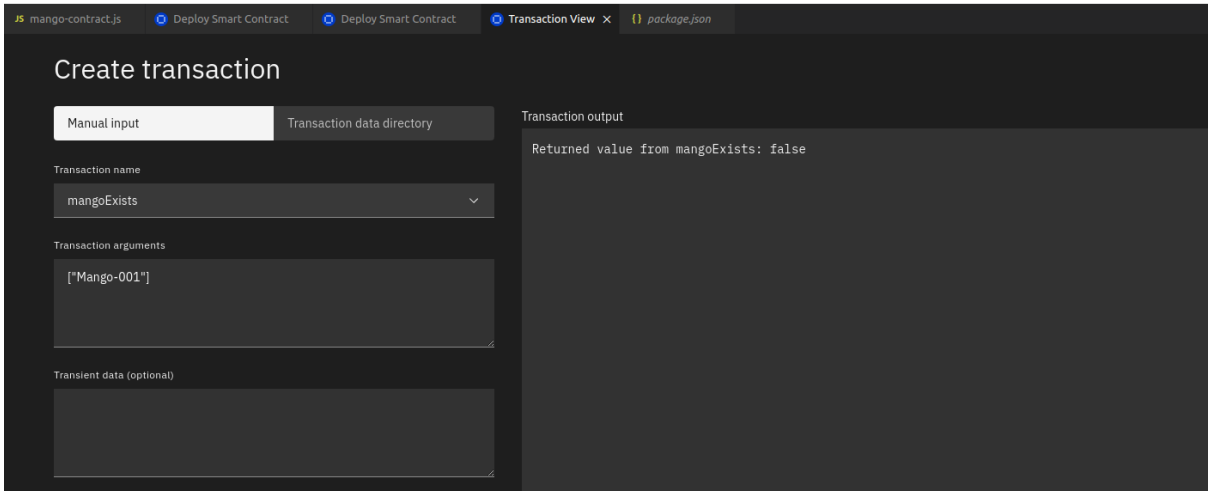


Deploying Smart Contract:

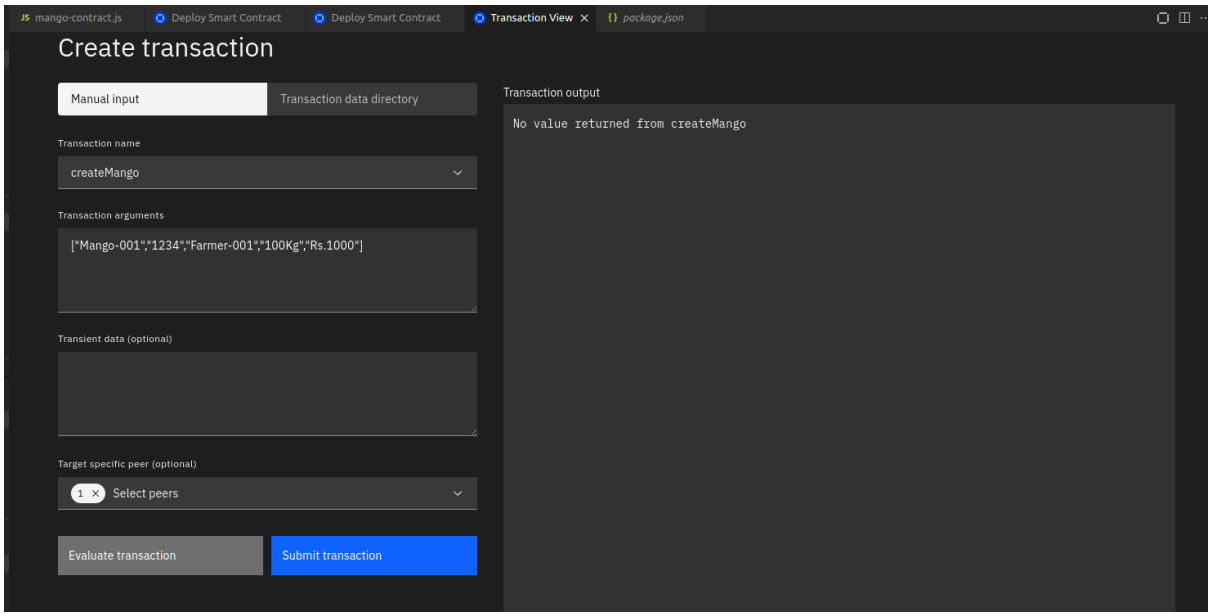


Making Transactions:

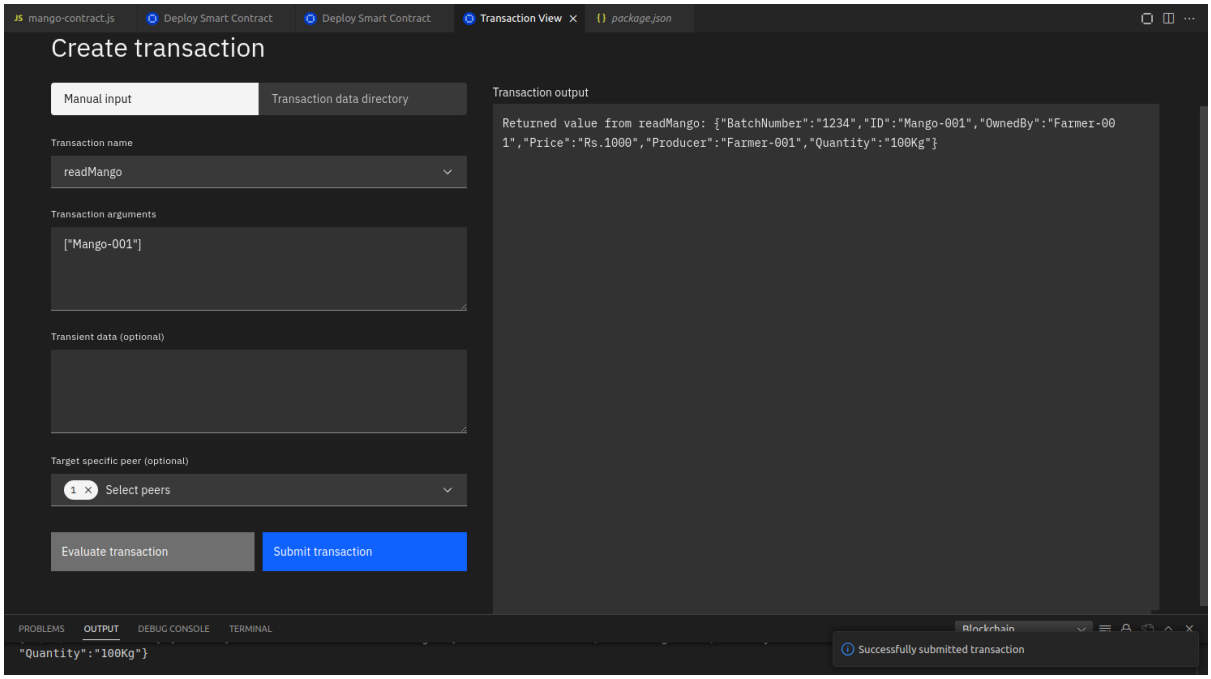
mangoExists:



createMango:



Readmango:



Result:

Hence,we have successfully built a Hyperledger Fabric using IBM Blockchain Platform and verified the Transactions.