

Screenshots: Output & Running time

Case: Authentication

```
Enter Username  
admin  
Enter Password  
admin
```

Case: Main menu

```
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
*           Please enter a command:           *
*-----* *
*   ( 1 ) Enter New Block                      * * *
*-----* *
*   ( 2 ) View Blockchain Product              * M
*-----* A R
*   ( 3 ) Save Current Blockchain              * Z
*-----* *
*   ( 4 ) Search Blockchain                    * * *
*-----* *
*   ( 5 ) Exit                                *
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
>
```

Case: Add block

```
Choose method to add block:
1. Manually
2. Generate from file
```

Case: Add block manually

```
Choose method to add block:
1. Manually
2. Generate from file
1
Enter Farm ID           : test
Enter Farm Location     : test
Enter Quantity          : test
Enter Harvest Date      : test
Enter Process Details   : test
Enter Plantation Certificate : test
Enter Batch Number      : test
Block added for stage: Manufacturing

----- Stage 1 -----

Block ID      : 1
-----
Timestamp     : 2024-03-24 19:43:21
-----
Previous Hash : genesis_hash
-----
Current Hash  : BQkFPC4YTijzvOcGoKld17112806010
-----

Farm ID           : test
Farm Location     : test
Quantity          : test

Harvest Date      : test
Process Details   : test

Batch Number      : test
Plantation Certificate : test

-----
```

Case: Add block from file menu

```
Select a file to create a block:
1: RAW_manuf10A001.txt
2: RAW_packa10A001.txt
3: RAW_qual10A002.txt
4: SDP_batch9A483.txt
5: SDP_batch9A484.txt
6: SDP_batch9A485.txt
Enter the number of your choice:
```

Case: Add block from file

Select a file to create a block:

- 1: RAW_manuf10A001.txt
- 2: RAW_packa10A001.txt
- 3: RAW_qual10A002.txt
- 4: SDP_batch9A483.txt
- 5: SDP_batch9A484.txt
- 6: SDP_batch9A485.txt

Enter the number of your choice: 3

Block generated from RAW_qual10A002.txt for Quality Assurance stage.

Block added for stage: Quality Assurance

----- Stage 2 -----

Block ID : 2

Timestamp : 2024-03-24 19:43:57

Previous Hash : BQkFPC4YTijzvOcGoKld17112806010

Current Hash : 6NDZJg016ywilhaDmaRY17112806371

Inspection Date : 2024-03-03

Inspector Name : Myung Soo

QA Report ID : QA-2003-032024

QA Test Result : Passed

Non-Conformance Reports : None

Approval Status : Approved for Packaging

Press any button to return to main menu

Case: View menu

```
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
*           View Blockchain Options:           *
*-----*
*      ( 1 ) View Current Blockchain in Memory  *
*-----*
*      ( 2 ) View Saved Blockchains from Files  *
*-----*
*      ( 3 ) Return to Main Menu                *
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
> 1
```

Case: View current memory (just added block)

```
----- Stage 1 -----

Block ID      : 1
-----
Timestamp     : 2024-03-24 19:43:21
-----
Previous Hash : genesis_hash
-----
Current Hash  : BQkFPC4YTijzv0cGoKld17112806010
-----

Farm ID           : test
Farm Location     : test
Quantity          : test

Harvest Date      : test
Process Details   : test

Batch Number      : test
Plantation Certificate : test

-----
Press enter to view next block...
```


Case: View old blockchain from file selection (4)

```
----- Stage 1 -----  
  
Block ID      : 1  
-----  
Timestamp     : 2024-03-09 13:40:19  
-----  
Previous Hash : genesis_hash  
-----  
Current Hash  : ITv4aK2F78kPtGRWpeJu17099628190  
-----  
Farm ID       : SDP1001  
Farm Location : Port Dickson, MY  
Quantity      : 5000 Kg  
  
Harvest Date  : 2024-03-01  
Process Details : Cold-press extraction  
  
Batch Number  : Cert#BP102  
Plantation Certificate : BP-032024  
  
-----  
  
Press enter to view next block...
```

----- Stage 2 -----

Block ID : 2

Timestamp : 2024-03-09 13:40:59

Previous Hash : ITv4aK2F78kPtGRWpeJu17099628190

Current Hash : ITv4aK2F78kPtGRWpeJu17099628591

Inspection Date : 2024-03-03

Inspector Name : Myung Soo

QA Report ID : QA-2003-032024

QA Test Result : Passed

Non-Conformance Reports : None

Approval Status : Approved for Packaging

Press enter to view next block...

----- Stage 3 -----

Block ID : 3

Timestamp : 2024-03-09 14:05:19

Previous Hash : ITv4aK2F78kPtGRWpeJu17099628591

Current Hash : ITv4aK2F78kPtGRWpeJu17099643192

Packaging Date : 2024-03-05

Packaging Type : Biodegradable Containers

Quantity Packaged : 5000 Kg

Package Line : Line 2

Label Information : Organic Palm Oil, Non-GMO

Press enter to view next block...

----- Stage 4 -----

Block ID : 4

Timestamp : 2024-03-09 14:07:10

Previous Hash : ITv4aK2F78kPtGRWpeJu17099643192

Current Hash : ITv4aK2F78kPtGRWpeJu17099644303

Warehouse ID : WH1024

Warehouse Name : SIME DARBY PARTS DISTRIBUTION CENTRE

Storage Location : Zone A, Section 5

Storage Condition : Excellent

Security Measures : Temperature controlled at 25°C

Inventory Level : 5000 Kg

Press enter to view next block...

----- Stage 5 -----

Block ID : 5

Timestamp : 2024-03-09 14:09:02

Previous Hash : ITv4aK2F78kPtGRWpeJu17099644303

Current Hash : ITv4aK2F78kPtGRWpeJu17099645424

Departure Date : 2024-03-10

Estimated Arrival Date : 2024-03-15

Temperature Control : Maintained at 25°C

Route Information : Portdickson to Kuala Lumpur

Carrier Information : PT Fast Transport

Press enter to view next block...



Test.txt

3/24/2024 7:46 PM

Text Document

1 KB

```
Stage:1,BlockID:1,CurrentHash:8QkFPC4YTijzv0cGoKld17112806010,PreviousHash:genesis_hash,Time:2024-03-24 19:43:21,Info:
Farm ID      : test
Farm Location : test
Quantity     : test

Harvest Date   : test
Process Details : test

Batch Number   : test
Plantation Certificate : test
Stage:2,BlockID:2,CurrentHash:6NDZl7g016ywi1haDmaRY17112806371,PreviousHash:8QkFPC4YTijzv0cGoKld17112806010,Time:2024-03-24 19:43:57,Info:
Inspection Date : 2024-03-03
Inspector Name   : Myung Soo

QA Report ID      : QA-2003-032024
QA Test Result    : Passed
Non-Conformance Reports : None
Approval Status   : Approved for Packaging
```

Case: Search for blockchain with 2 first letter and 4 last latter from hash: BQ6010

```
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
*           Please enter a command:           *
*-----*
*      ( 1 ) Enter New Block                   * * *
*-----*
*      ( 2 ) View Blockchain Product           * M
*-----* A R
*      ( 3 ) Save Current Blockchain           * Z
*-----*
*      ( 4 ) Search Blockchain                 * * *
*-----*
*      ( 5 ) Exit                             *
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*

> 4
Enter the first 2 and last 4 characters of the CurrentHash to search: BQ6010
----- Stage 1 -----

Block ID      : 1
-----
Timestamp     : 2024-03-24 19:43:21
-----
Previous Hash : genesis_hash
-----
Current Hash  : BQkFPC4YTijzv0cGoKld17112806010
-----
Farm ID       : test
Farm Location : test
Quantity      : test

Harvest Date  : test
Process Details : test

Batch Number  : test
Plantation Certificate : test

-----
Found in file: 4.txt
Press Enter to return to the main menu...
```

Case: Exit program with running time

```
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
*           Please enter a command:           *
*-----*-----*-----*-----*-----*-----*
*      ( 1 ) Enter New Block                   * * *
*-----*-----*-----*-----*-----*-----*
*      ( 2 ) View Blockchain Product           * M
*-----*-----*-----*-----*-----*-----*
*      ( 3 ) Save Current Blockchain           * Z
*-----*-----*-----*-----*-----*-----*
*      ( 4 ) Search Blockchain                 * * *
*-----*-----*-----*-----*-----*-----*
*      ( 5 ) Exit                             *
*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*

> 5
Exiting program.
Invalid choice. Please try again.

Process returned 0 (0x0)   execution time : 323.741 s
Press any key to continue.
```