DEMO DOCUMENT.

There are two customers of the service User-1 and User-2.

User-1 wants to sell the following products:

1.MRI reports of 3rd grade ankle sprains.
2.MRI reports of meniscus tears.
3.MRI reports of ACL tears.
4.MRI reports of ATFL tears.

These health related documents/reports are very vital to an Orpthopadeacian who wants to study Injuries and rehabilitation. Let User-2 be the customer that wants to buy these reports from User-1.

But firstly User-1 needs to upload the data onto the Blockchain.

This is done by:

```
Adding Transaction 1 ........
A = 2 p = 11

Verification - Round 1

Choose random r from 0 to p-1
Calculate A^r(mod p) and enter the value:
```

Note that the verification process carries out the Zero Knowledge proof with the cost being the sensitive data and peers verifying in 3 rounds:

```
Calculate (r+bx)(mod(p-1)) taking x = cost of product, and enter the value:
1

Verification - Round 2

Choose random r from 0 to p-1
Calculate A^r(mod p) and enter the value:
2

Assume the bit b = 0
Calculate (r+bx)(mod(p-1)) taking x = cost of product, and enter the value:
1

Verification - Round 3

Choose random r from 0 to p-1
Calculate A^r(mod p) and enter the value:
2

Assume the bit b = 1
Calculate (r+bx)(mod(p-1)) taking x = cost of product, and enter the value:
1
Identity successfully verified.
****************************************************************
Mining block....
Finished mining.
****************************************************************
```

As soon as Identity is verified the user User-1 mines the block and claims the data.

And so he uploads all the data mentioned above in a similar manner and claims them.

The BlockChain details are hence as follows:

```
*************************************************************************
Blockchain details:


Block creation time: 2020-04-13 15:27:54.516081
Mined by: 870e

Transactions in block:
MRI reports of 3rd grade ankle sprains.

Block creation time: 2020-04-13 15:28:36.483893
Mined by: 870e

Transactions in block:
MRI reports of meniscus tears.

Block creation time: 2020-04-13 15:28:52.684603
Mined by: 870e

Transactions in block:
MRI reports of ACL tears.


Block creation time: 2020-04-13 15:28:58.389465
Mined by: 870e

Transactions in block:
MRI reports of ATFL tears.

********Blockchain secure and verified.*************
*************************************************************************
*******************************
```

Next the buyer aka User-2 wants to buy the reports:

```
ID                    Cost                    Description
Transaction ID : 8b73
Cost : $60
MRI reports of 3rd grade ankle sprains.


Transaction ID : 98f9
Cost : $60
MRI reports of meniscus tears.


Transaction ID : 5723
Cost : $70
MRI reports of ACL tears.


Transaction ID : 9b5d
Cost : $80
MRI reports of ATFL tears.



Enter ID of the data you would like to buy:
```

And the user buys Transaction ID : 8b73

```
Enter ID of the data you would like to buy:
8b73
Please wait while the transaction is completed
*
 *
  *
   *
    *
     *
      *
       *
        *
         *

Transaction success!!
*********************************************************************
****************************
```

and the payment is carried out throught a secure gateway.

Lastly we view the user details of User-1 :

```
User1's details:
**********************************************************************
User ID:870e
Transactions:
**************************************
Description: MRI reports of 3rd grade ankle sprains.
Cost: $60


**************************************
Description: MRI reports of meniscus tears.
Cost: $60


**************************************
Description: MRI reports of ACL tears.
Cost: $70


**************************************
Description: MRI reports of ATFL tears.
Cost: $80


User 870e's Purchases:
No purchases till date
**********************************************************************
```

user details of User-2 :

```
User2's details:
**********************************************************************
User ID:88f1
Transactions:
User 88f1's Purchases:
**************************************
1) Transaction ID: 8b73
Description : MRI reports of 3rd grade ankle sprains.

**************************************
2) Transaction ID: 98f9
Description : MRI reports of meniscus tears.

**********************************************************************
```