Question 1

A Barua number is a number which consists of only zeroes and ones and has only one 1.

Barua number will start with 1. Given numbers, find out the multiplication of the numbers.

Note: The input may contain one decimal number and all other Barua numbers. (Assume

that each number is very large and total number of values give is also very large)

Input 1: 100 10 12 1000

Output 1: 12000000

Input 2: 100 121 1000000000000000

Output 2: 12100000000000000000

Input 3: 10 100 1000

Output 3: 1000000

def multiplyList(myList) :

result = 1

for x in myList:

result = result \* x

return result

string\_list=map(int,input().split())

list1=string\_list

print(multiplyList(list1))

**Question 2**

**Implement push, pop and find the minimum element in a stack in O(1) time complexity.**

// A user defined stack that supports getMin() in

// addition to push() and pop()

struct MyStack

{

    stack<int> s;

    int minEle;

    // Prints minimum element of MyStack

    void getMin()

    {

        if (s.empty())

            cout << "Stack is empty\n";

        // variable minEle stores the minimum element

        // in the stack.

        else

            cout <<"Minimum Element in the stack is: "

                 << minEle << "\n";

    }

    // Prints top element of MyStack

    void peek()

    {

        if (s.empty())

        {

            cout << "Stack is empty ";

            return;

        }

        int t = s.top(); // Top element.

        cout << "Top Most Element is: ";

        // If t < minEle means minEle stores

        // value of t.

        (t < minEle)? cout << minEle: cout << t;

    }

    // Remove the top element from MyStack

    void pop()

    {

        if (s.empty())

        {

            cout << "Stack is empty\n";

            return;

        }

        cout << "Top Most Element Removed: ";

        int t = s.top();

        s.pop();

        // Minimum will change as the minimum element

        // of the stack is being removed.

        if (t < minEle)

        {

            cout << minEle << "\n";

            minEle = 2\*minEle - t;

        }

        else

            cout << t << "\n";

    }

    // Removes top element from MyStack

    void push(int x)

    {

        // Insert new number into the stack

        if (s.empty())

        {

            minEle = x;

            s.push(x);

            cout <<  "Number Inserted: " << x << "\n";

            return;

        }

        // If new number is less than minEle

        if (x < minEle)

        {

            s.push(2\*x - minEle);

            minEle = x;

        }

        else

           s.push(x);

        cout <<  "Number Inserted: " << x << "\n";

    }

};

// Driver Code

int main()

{

    MyStack s;

    s.push(3);

    s.push(5);

    s.getMin();

    s.push(2);

    s.push(1);

    s.getMin();

    s.pop();

    s.getMin();

    s.pop();

    s.peek();

    return 0;

}