**Assignment Day 6**

**Question 1**

Write a function to find the maximum element in the stack.

**Answer:**

 void push(int x)

    {

        mainStack.push(x);

        if (mainStack.size() == 1)

        {

            trackStack.push(x);

            return;

        }

        if (x > trackStack.top())

            trackStack.push(x);

        else

            trackStack.push(trackStack.top());

    }

    int getMax()

    {

        return trackStack.top();

    }

    int pop()

    {

        mainStack.pop();

        trackStack.pop();

    }

**Question 2**

Write a function to find the minimum element in the stack.

**Answer:**

#include <bits/stdc++.h>

using namespace std;

// 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";

    }

};