ASSIGNMENT 5

**Question 1**

Write the function for insertion sort.

Ans:

void insertionSort(int arr[], int n)

{

    int i, key, j;

    for (i = 1; i < n; i++)

    {

        key = arr[i];

        j = i - 1;

        while (j >= 0 && arr[j] > key)

        {

            arr[j + 1] = arr[j];

            j = j - 1;

        }

        arr[j + 1] = key;

    }

}

**Question 2**

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

Ans:

#include <stdio.h>

#include <stdlib.h>

int data[100000],top,max=0;

void push()

{

   int item;

   scanf("%d",&item);

   top++;

   data[top]=item;

   if(max < data[top])

        max = data[top];

}

void pop()

{

    int i;

    if(max == data[top])

        max=0;

    top--;

    for(i= top;i>=0;i--)

        if(max < data[i])

            max = data[i];

}

int main()

{

    int t,n,choice;

    top = -1;

    scanf("%d",&t);

    while(t--)

    {

        scanf("%d",&choice);

        switch(choice)

        {

            case 1 : push();

                     break;

            case 2:  pop();

                     break;

            case 3: printf("%d\n",max);

                    break;

        }

    }

    return 0;

}

**Question 3**

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

Ans:

#include <stdio.h>

#include <stdlib.h>

int data[100000],top,min=0;

void push()

{

   int item;

   scanf("%d",&item);

   top++;

   data[top]=item;

   if(min > data[top])

        min = data[top];

}

void pop()

{

    int i;

    if(min == data[top])

        min=0;

    top--;

    for(i= top;i>=0;i--)

        if(min > data[i])

            min = data[i];

}

int main()

{

    int t,n,choice;

    top = -1;

    scanf("%d",&t);

    while(t--)

    {

        scanf("%d",&choice);

        switch(choice)

        {

            case 1 : push();

                     break;

            case 2:  pop();

                     break;

            case 3: printf("%d\n",min);

                    break;

        }

    }

    return 0;

}