DSA EXERCISE-1

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Branch: CSE

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#include <bits/stdc++.h>
using namespace std;
class Stack
{
private:
    int n;
    int top = -1;
    int *arr;

public:
    Stack(int size)
    {
        n = size;
        arr = new int[size];
    }
    int push()
    {
        top += 1;
        if (top == n)
        {
            cout << "--not possible, stack is full--" <<
endl;
            top -= 1;
        }
```

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        else
        {
            cout << "push: ";
            int x;
            cin >> x;
            arr[top] = x;
        }
        return 0;
    }
    int pop()
    {
        if (top == -1)
        {
            cout << "--not possible, Stack is empty--" <<
endl;
        }
        else
        {
            cout << "pop: " << arr[top] << endl;
            arr[top] = 0;

            top -= 1;
        }
        return 0;
    }
    int display()
    {
        if (top == -1)
        {
            cout << "stack is empty" << endl;
        }
        else
```

```
        {
            cout << "\n--stack is:\n";
            for (int i = top; i >= 0; i--)
            {
                cout << arr[i] << endl;
            }
        }
    }
};
int main(int argc, char const *argv[])
{
    cout << "Enter the size of stack: ";
    int size;
    cin >> size;
    Stack stack(size);
    cout << "1: push\n2: pop\n3: display\n4: end" <<
endl;
    while (true)
    {
        int f;
        cin >> f;
        if (f == 1)
        {
            stack.push();
        }
        else if (f == 2)
        {
            stack.pop();
        }
        else if (f == 3)
        {
            stack.display();
```

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        }
        else if (f == 4)
        {
            cout << "--END--" << endl;
            break;
        }
    }
    return 0;
}
```