LAB 01: SHRIHARI VISWANATHAN

CONTENT: STACK PUSH POP PE

```
Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 1


Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 2


Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 3
Stack Overflow

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 3
Element: 2

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
the item on the top was 2

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
the item on the top was 1

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
Stack underflow
```

```c
//this is shrihari viswanahan program'

#include <stdio.h>

#define N 2

int stack[N];
int top = -1;

void push();
void pop();
void peek();

int main()
{
    int i = 1;
    while(i == 1){
        printf("\n");
        printf("\n");

        printf("Operations for the stack:\n");
        printf("1. Push\n");
        printf("2. Pop\n");
        printf("3. Peek\n");
        printf("4. Exit\n");

        int choice = 0;
        printf("Enter choice: ");
        scanf("%d",  &choice);

        switch(choice){
            case 1: push();
                break;

            case 2: pop();
                break;

            case 3: peek();
                break;

            case 4: i = 0;
                break;
        }
    }


}

```

```c
void push(){
    int value = 0;
    printf("Integer to push: ");
    scanf("%d", &value);

    if (top == N - 1){
        printf("Stack Overflow");
    }

    else{
        top++;
        stack[top] = value;

    }
}


void pop(){
    if (top == -1){
        printf("Stack underflow");
    }

    else{
        int item = stack[top];
        printf("the item on the top was %d", item);
        top--;

    }
}

void peek(){

    if (top == -1){
        printf("Underflow");
    }

    else{
        printf("Element: %d", stack[top]);
    }
}
```

Stack Lab - 01:-

Code:-

```
#include <stdio.h>
#define
void main(){
    int stack[
```

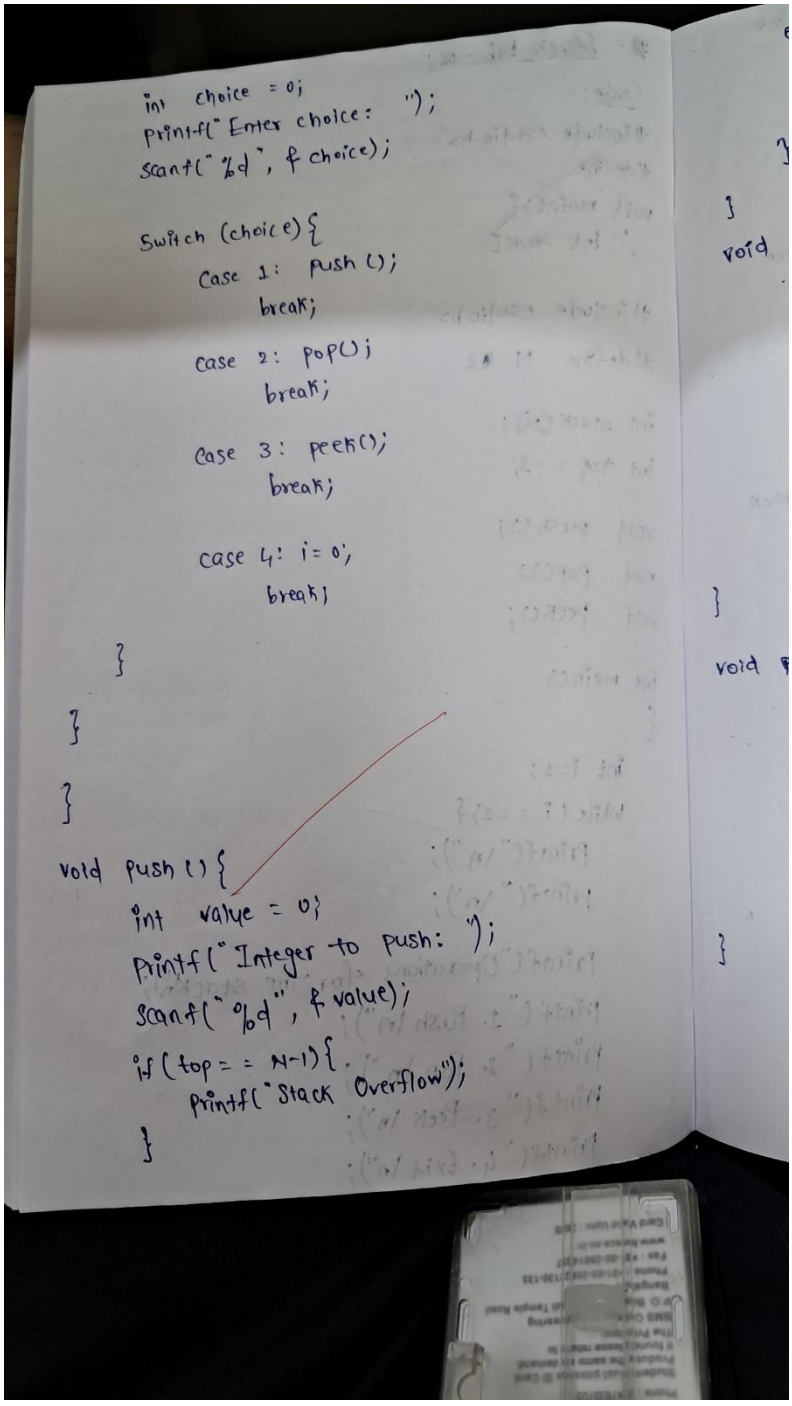
```
#include <stdio.h>
#define N 12

int stack[N];
int top = -1;

void push();
void pop();
void peek();

int main()
{
    int i=1;
    while (i ==1){
        printf("\n");
        printf("\n");

        printf("Operations for the stack\n");
        printf("1. Push\n");
        printf("2. Pop\n");
        printf("3. Peek\n");
        printf("4. Exit\n");
```



```
int choice = 0;
printf("Enter choice: ");
scanf("%d", &choice);

switch (choice){
    case 1: push();
        break;
    case 2: pop();
        break;
    case 3: peek();
        break;
    case 4: i=0;
        break;
}
}
}

void push(){
    int value = 0;
    printf("Integer to push: ");
    scanf("%d", &value);
    if(top == N-1){
        printf("Stack Overflow");
    }
```

```
    else {
        top++;
        stack[top] = value;
    }
}
void pop(){
    if (top == -1){
        printf("Stack Underflow");
    }
    else{
        printf("The item popped: %d", stack[top]);
        top--;
    }
}

void peek() {
    if(top == -1){
        printf("Stack underflow");
    }
    else {
        printf("Element on top is %d", Stack[top]);
    }
}
```

Operations for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 1

Operations for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to Push: 2.

Operations for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to Push: 3
Stack Overflow.

Operation for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 3
Element on top is 3

Operations for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
The item popped: 2

Operations for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
The item popped: 1

Operations for the stack
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
Stack underflow.

MG
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```
Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 1


Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 2


Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 1
Integer to push: 3
Stack Overflow

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 3
Element: 2

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
the item on the top was 2

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
the item on the top was 1

Operations for the stack:
1. Push
2. Pop
3. Peek
4. Exit
Enter choice: 2
Stack underflow
```