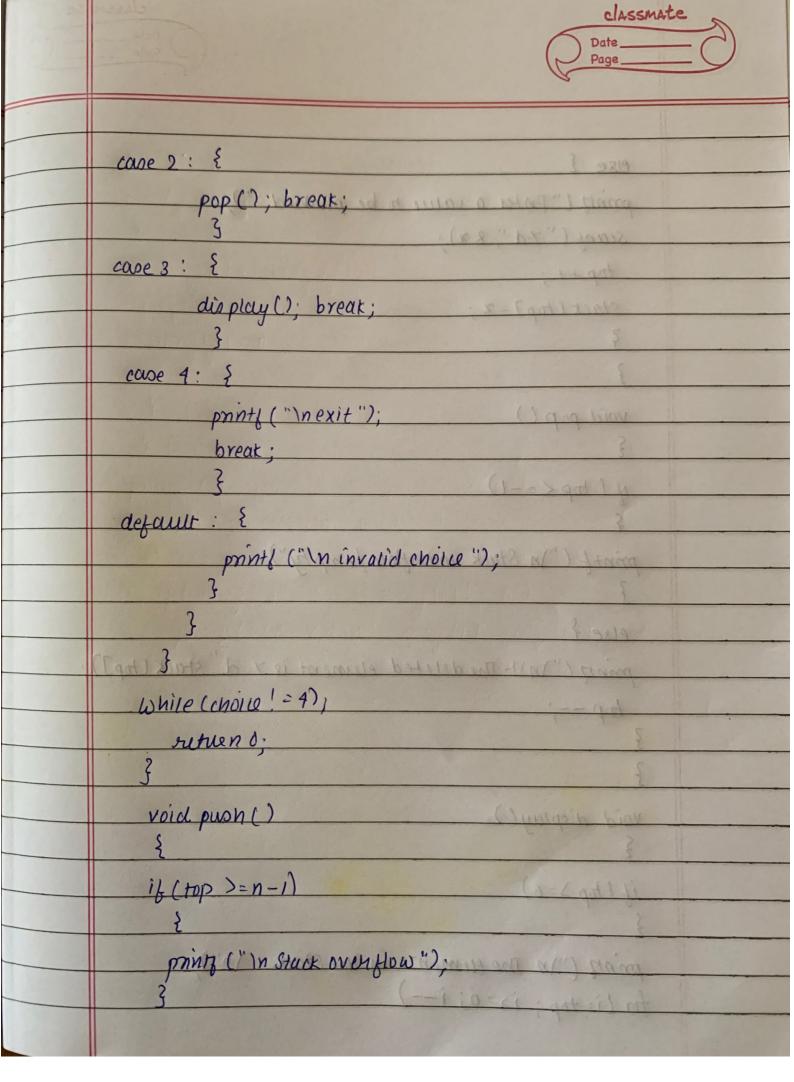Mallika Prasad IBM19CS081 Sec - B.

LP # 1

WAP to simulate the working of stack using an array with the
following a) push b) pop. c) display. The prog. should print
appropriate messages for stak overflow and underflow.

```c
# include <stdio.h>
void push ();
void pop();
void display();
int stack [100], choice, n, top, x, i;
int main ()
{
    top = -1;
    printf ("Enter size of stack (max = 100): ");
    scanf ("%.d", &n);
    print ("\n 1. push \n 2. pop \n 3. display \n 4. exit ");
    do
    {
        printf ("\n Enter option number to be performed: ");
        scanf ("%.d", &choice);
        switch (choice)
        {
            case 1: { push ();}
                break;
            }
```

```
case 2 : {
        pop (); break;
      }
case 3 : {
        display (); break;
      }
case 4 : {
        printf ("\n exit ");
        break;
      }
default : {
        printf ("\n invalid choice ");
      }
   }
   } while (choice ! = 4);
   return 0;
}

void push ()
{
if (top >= n-1)
    {
    printf ("\n stack overflow ");
    }
```

```c
else {
printf ("Enter a value to be pushed !");
scanf ("%d", &x);
top ++;
stack [top] = x;
}
}

void pop ()
{
if ( top <= -1)
{
printf ("\n Stack underflow /empty");
}

else {
printf ("\n\t The deleted element is %.d ", stack [top]);
top --;
}
}

void display ()
{
if (top >= 0)
{
printf ("\n The elemenu in the stack : \n");
for (i = top; i>= 0; i--)
```

```c
        printf("\n ▶ %d", stack[i]);
    }
    else
    {
        printf("\n Stack is empty ");
    }
}
```