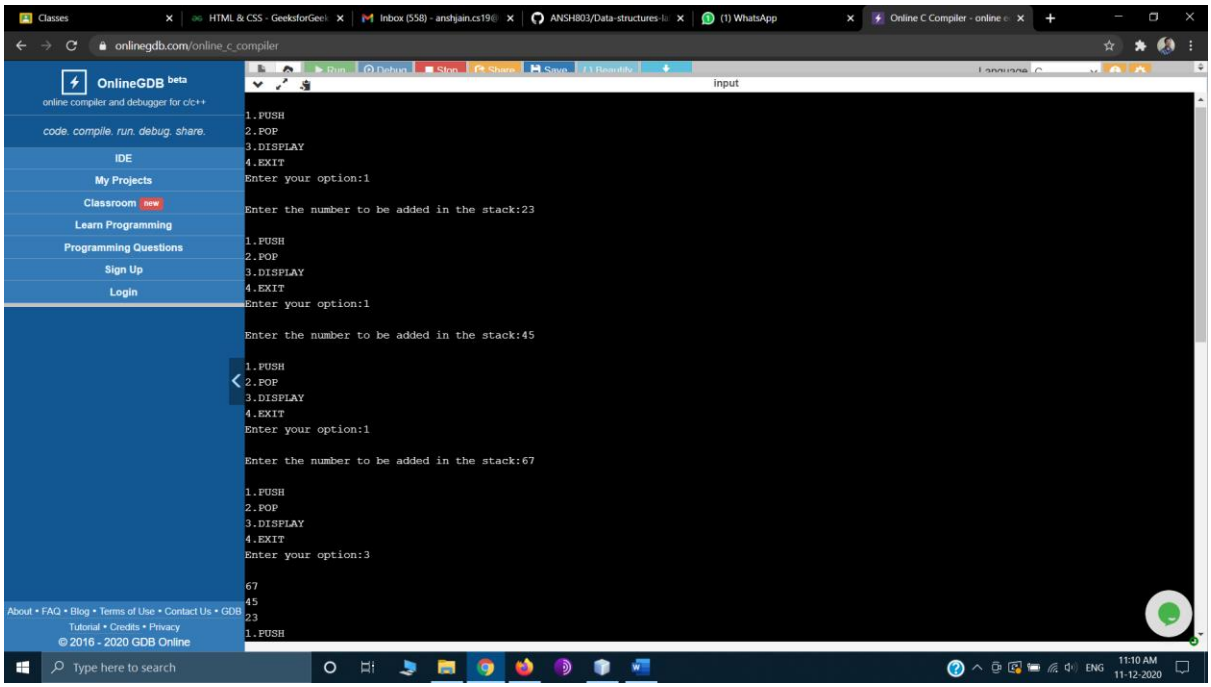
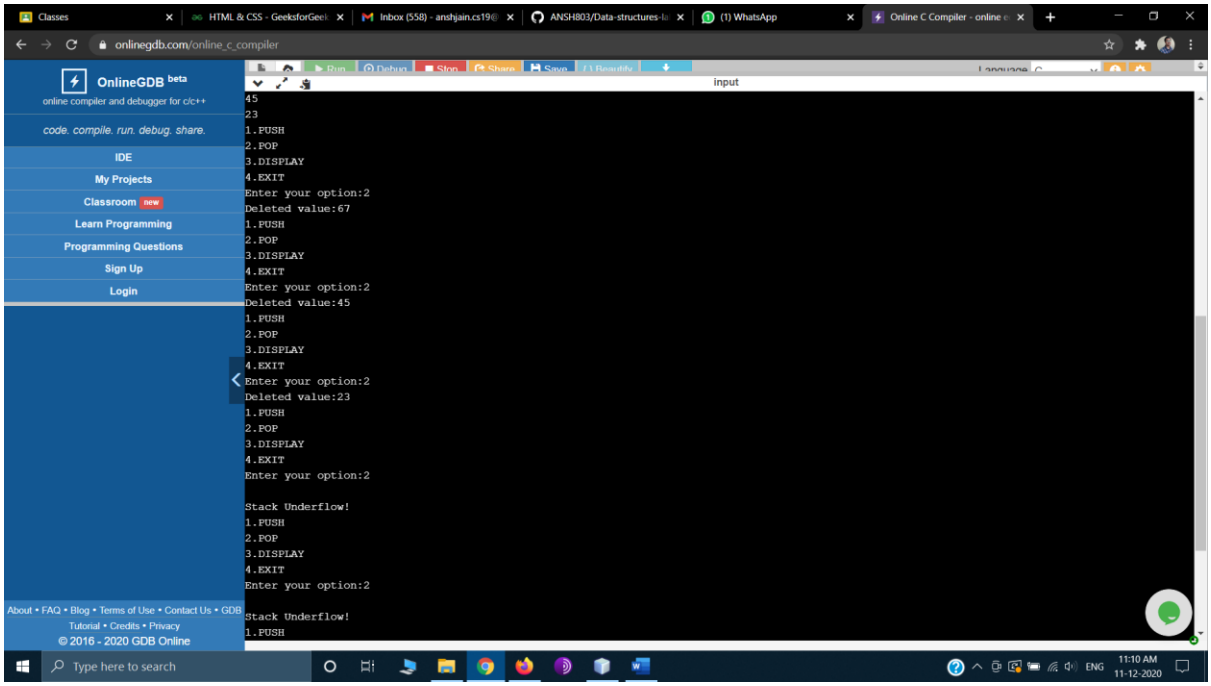
```
#include<stdio.h>
#include<malloc.h>
#include<stdlib.h>
struct stack{
   int data;
   struct stack *next;
};
struct stack *top=NULL;
struct stack *push(struct stack *,int);
struct stack *pop(struct stack *);
struct stack *display(struct stack *);
int main(){
   int val,opt;
   do{
      printf("\n1.PUSH\n2.POP\n3.DISPLAY\n4.EXIT");
      printf("\nEnter your option:");
      scanf("%d",&opt);
      switch(opt){
         case 1:printf("\nEnter the number to be added in the stack:");
         scanf("%d",&val);
         top=push(top,val);
         break;
         case 2:top=pop(top);
         break;
         case 3:top=display(top);
         break;
      }
   }while(opt!=4);
   return 0;
}
struct stack *push(struct stack *top,int val){
```

```
    struct stack *ptr;
    ptr=(struct stack *)malloc(sizeof(struct stack));
    ptr->data=val;
    if(top==NULL){
        ptr->next=NULL;
        top=ptr;
    }
    else{
        ptr->next=top;
        top=ptr;
    }
    return top;
}
struct stack *pop(struct stack *top){
    struct stack *ptr;
    ptr=top;
    if(top==NULL)
        printf("\nStack Underflow!");
    else{
        top=top->next;
        printf("Deleted value:%d",ptr->data);
        free(ptr);
    }
    return top;
}
struct stack *display(struct stack *top){
    struct stack *ptr;
    ptr=top;
    if(top==NULL)
        printf("\nStack is empty!");
    else{
```

```
        while(ptr!=NULL){
            printf("\n%d",ptr->data);
            ptr=ptr->next;
        }
    }
    return top;
}
```

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input
45
23
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Deleted value:67
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Deleted value:45
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Deleted value:23
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Stack Underflow!
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Stack Underflow!
1.PUSH
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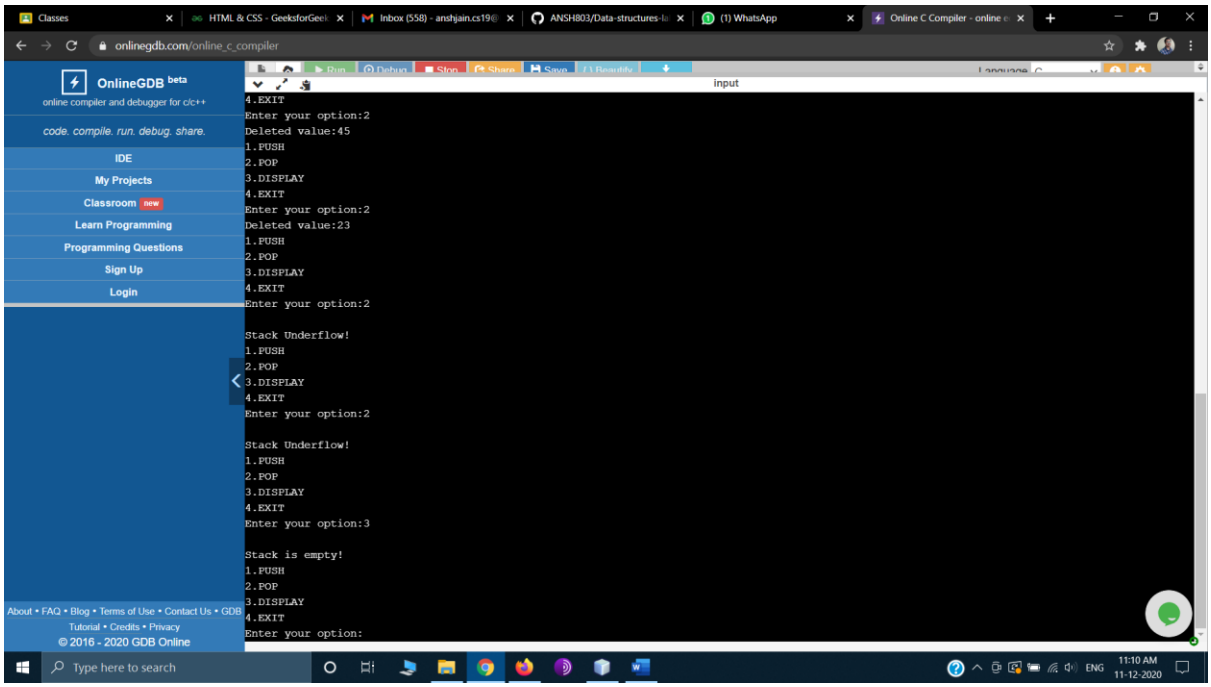
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input
4.EXIT
Enter your option:2
Deleted value:45
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Deleted value:23
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Stack Underflow!
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:2
Stack Underflow!
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:3
Stack is empty!
1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter your option:
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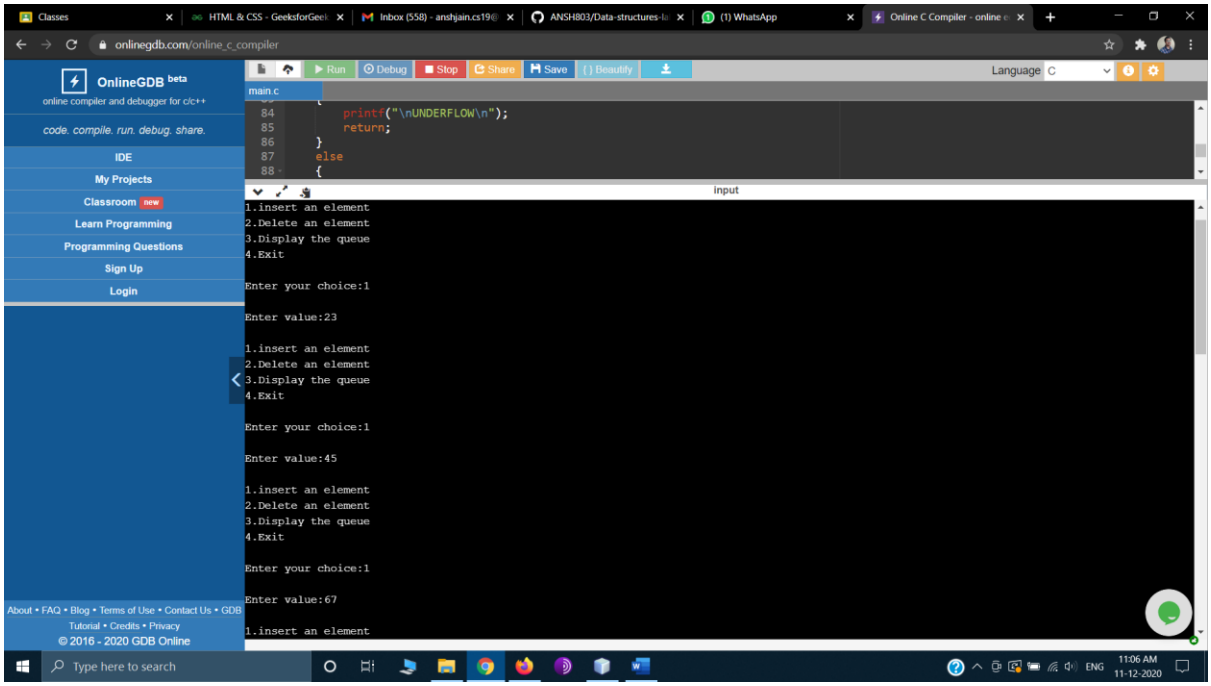
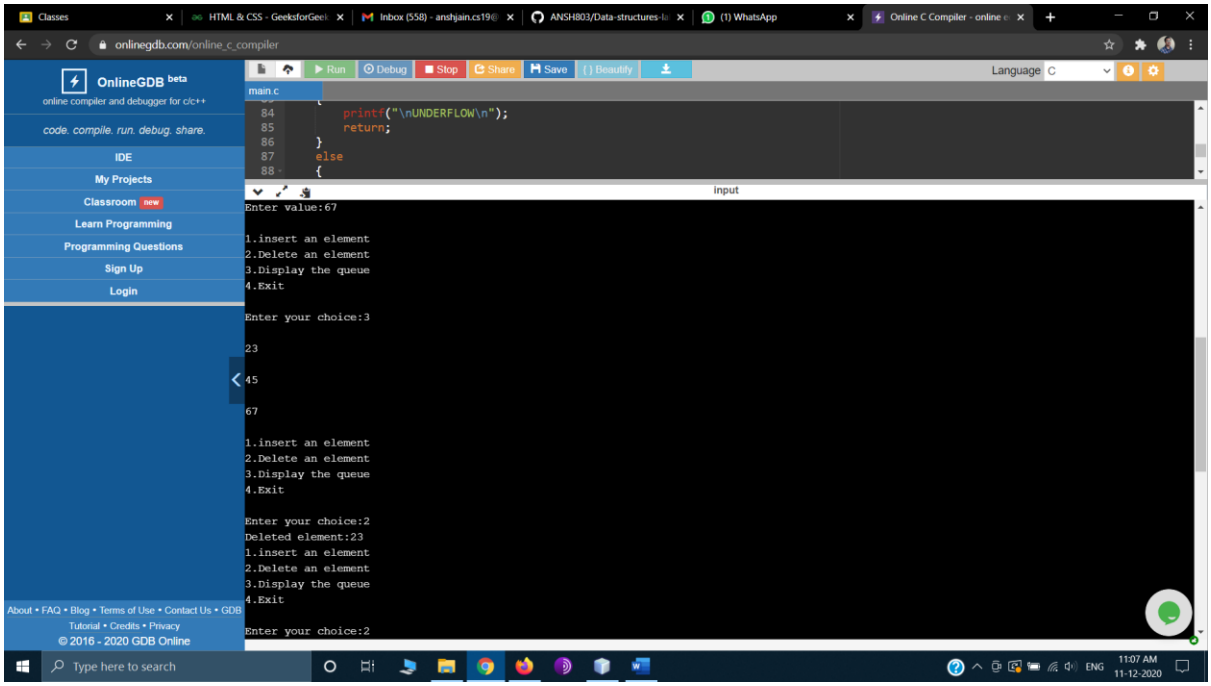
```
#include<stdio.h>
#include<stdlib.h>
struct node
{
   int data;
   struct node *next;
};
struct node *front;
struct node *rear;
void insert();
void delete();
void display();
void main ()
{
   int choice;
   while(choice != 4)
   {
      printf("\n1.insert an element\n2.Delete an element\n3.Display the queue\n4.Exit\n");
      printf("\nEnter your choice:");
      scanf("%d",& choice);
      switch(choice)
      {
         case 1:
         insert();
         break;
         case 2:
         delete();
         break;
         case 3:
         display();
         break;
```

```
            case 4:
            exit(0);
            break;
            default:
            printf("\nEnter valid choice??\n");
        }
    }
}
void insert()
{
    struct node *ptr;
    int item;

    ptr = (struct node *) malloc (sizeof(struct node));
    if(ptr == NULL)
    {
        printf("\nOVERFLOW\n");
        return;
    }
    else
    {
        printf("\nEnter value:");
        scanf("%d",&item);
        ptr -> data = item;
        if(front == NULL)
        {
            front = ptr;
            rear = ptr;
            front -> next = NULL;
            rear -> next = NULL;
        }
```

```
        else
        {
            rear -> next = ptr;
            rear = ptr;
            rear->next = NULL;
        }
    }
}
void delete ()
{
    struct node *ptr;
    if(front == NULL)
    {
        printf("\nUNDERFLOW\n");
        return;
    }
    else
    {
        ptr = front;
        printf("Deleted element:%d",ptr->data);
        front = front -> next;
        free(ptr);
    }

}
void display()
{
    struct node *ptr;
    ptr = front;
    if(front == NULL)
    {
```

```
        printf("\nEmpty queue\n");
    }
    else
    {
        while(ptr != NULL)
        {
            printf("\n%d\n",ptr -> data);
            ptr = ptr -> next;
        }
    }
}
```

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{ } Beautify
Language C
main.c
printf("\nUNDERFLOW\n");
return;
}
else
{
Input
Enter value:67
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:3
23
45
67
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
Deleted element:23
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
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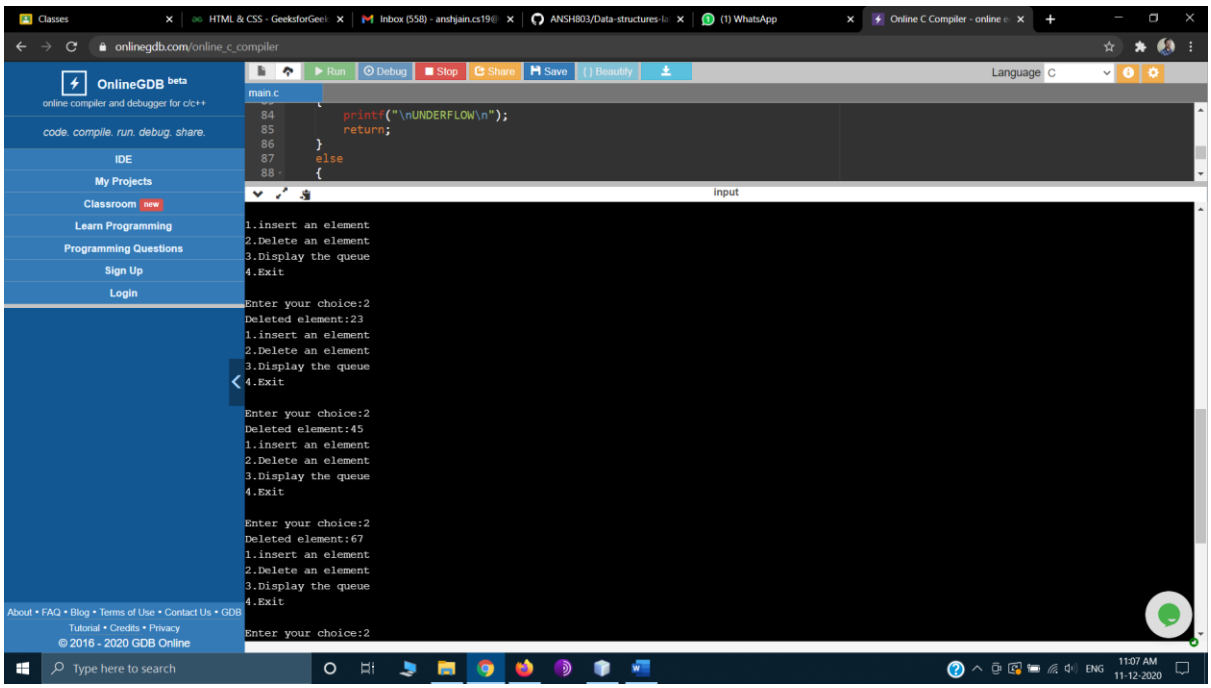
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1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
Deleted element:23
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
Deleted element:45
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
Deleted element:67
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
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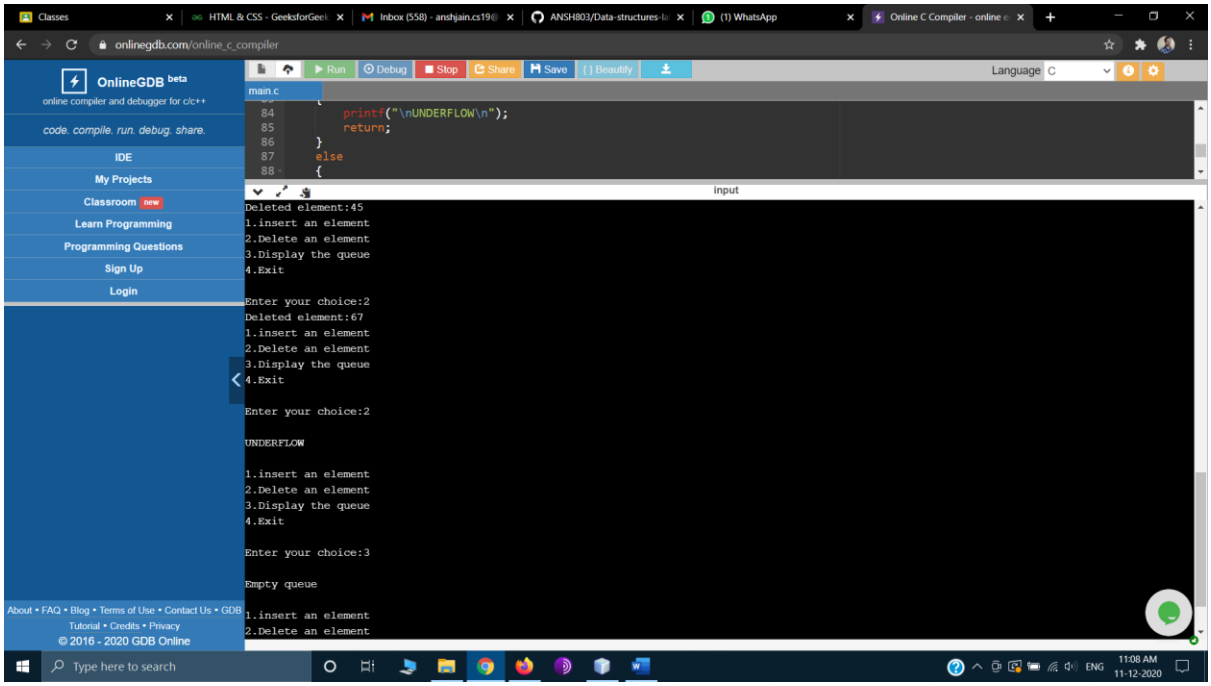
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{ } Beautify
Language C
main.c
printf("\nUNDERFLOW\n");
return;
}
else
{
Input
Deleted element:45
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
Deleted element:67
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
UNDERFLOW
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:3
Empty queue
1.insert an element
2.Delete an element
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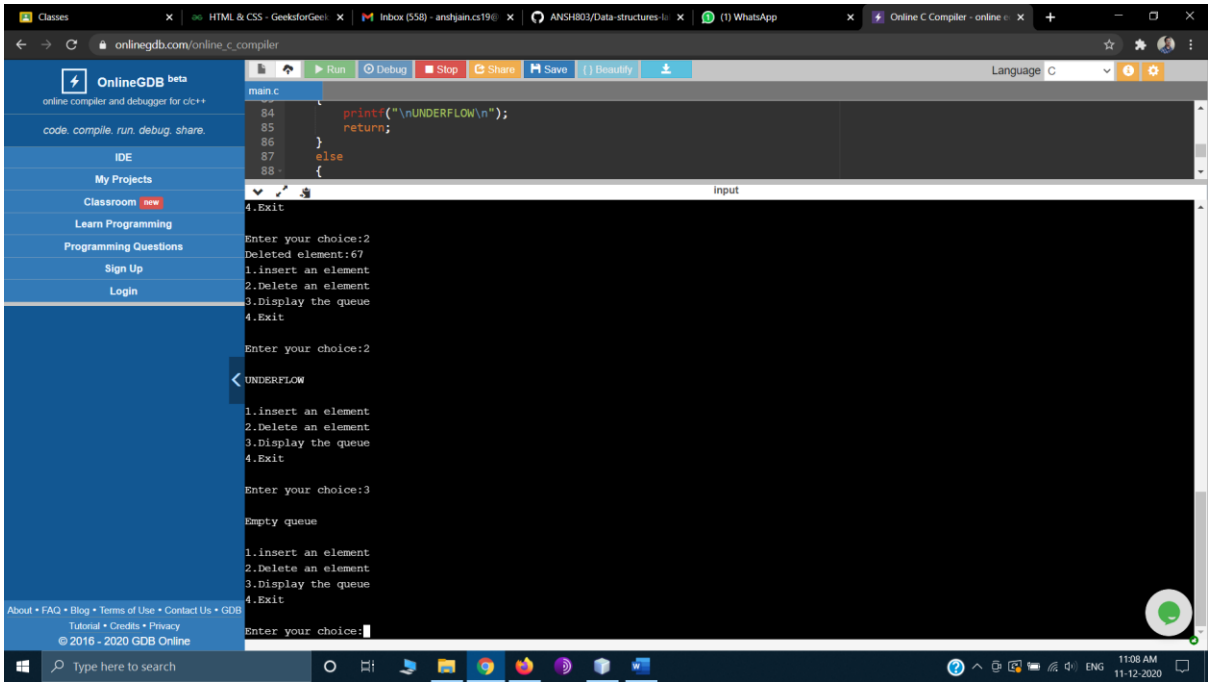
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Language C
main.c
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return;
}
else
{
Input
4.Exit
Enter your choice:2
Deleted element:67
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:2
UNDERFLOW
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:3
Empty queue
1.insert an element
2.Delete an element
3.Display the queue
4.Exit
Enter your choice:
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