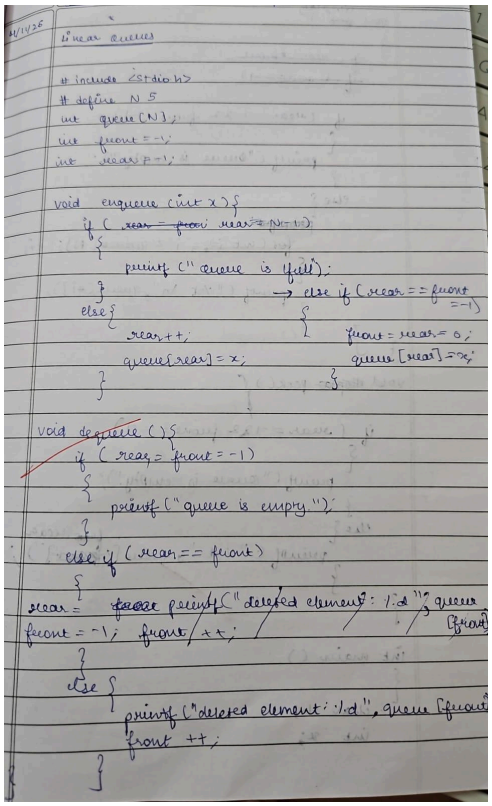
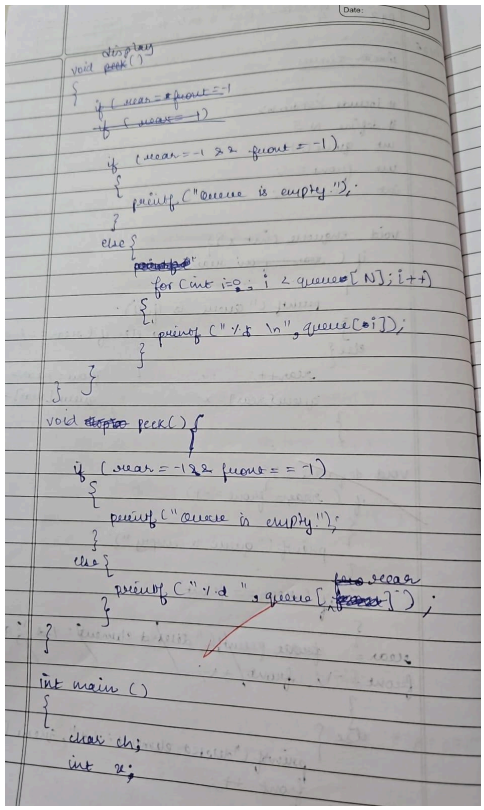
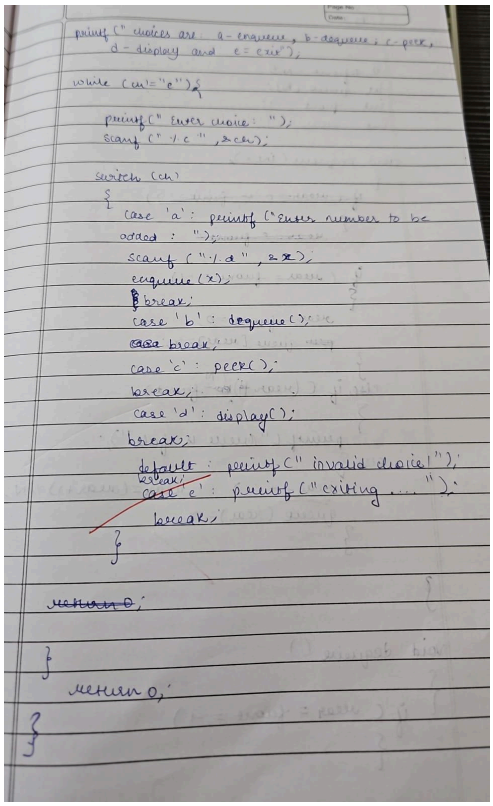
Linear Queue (Code)



```
Linear Queues

#include <stdio.h>
#define N 5
int queue[N];
int front = -1;
int rear = -1;

void enqueue (int x){
    if ( rear = front; rear = (N-1))
    {
        printf ("queue is full");
    }
    else{
        rear++;
        queue[rear] = x;
    }
}

void dequeue (){
    if ( rear = front = -1)
    {
    printf ("queue is empty");
    }
    else if (rear == front)
    {
rear = front printf("deleted element: %d", queue
front = -1; front++;
    }
    else {
        printf("deleted element: %d", queue[front
        front ++;
    }
}
```



```
display
void peek()
{
if ( rear = front = -1
if ( rear == -1)
    if (rear == -1 && front == -1)
    {
    printf("queue is empty");
    }
    else{
        for (int i=0; i <= queue[N]; i++)
        {
        printf ("%d \n", queue[i]);
        }
    }
}
void peek(){
    if (rear == -1 && front == -1)
    {
    printf("queue is empty");
    }
    else{
        printf("%d ", queue[front]);
    }
}
int main ()
{
    char ch;
    int x;
```



```
printf (" choices are a - enqueue, b - dequeue, c - peek,
    d - display and e = exit");

while (ch!="e");

    printf(" Enter choice: ");
    scanf ("%c", &ch);

    switch (ch)
    {
    case 'a': printf ("enter number to be
    added : ");
    scanf ("%d", &x);
    enqueue (x);
    break;
    case 'b': dequeue();
    break;
    case 'c': peek();
    break;
    case 'd': display();
    break;
    default : printf(" invalid choice!");
    case 'e': printf ("exiting ....");
    break;
    }

return 0;

}
return 0;
}
```

Linear Queue (outputs)

```
Choices are : a - enqueue
b - dequeue
c - peek
d - display
e - exit.
Enter choice (a/b/c/d/e) : a
Enter value to be added : 12
Element added!
Enter choice (a/b/c/d/e) : a
Enter value to be added : 23
Element added!
Enter choice (a/b/c/d/e) : a
Enter value to be added : 45
Element added!
Enter choice (a/b/c/d/e) : a
Enter value to be added : 67
Element added!
Enter choice (a/b/c/d/e) : a
Enter value to be added : 78
Element added!
Enter choice (a/b/c/d/e) : a
Enter value to be added : 89
```

```
Enter choice (a/b/c/d/e) : b
Deleted element : 12
Enter choice (a/b/c/d/e) : c
23
Enter choice (a/b/c/d/e) : d
23
45
67
78
Enter choice (a/b/c/d/e) : b
Deleted element : 23
Enter choice (a/b/c/d/e) : b
Deleted element : 45
Enter choice (a/b/c/d/e) : b
Deleted element : 67
Enter choice (a/b/c/d/e) : b
Enter choice (a/b/c/d/e) : b
Queue is empty.
Enter choice (a/b/c/d/e) : e
Exiting... bye!
```