Code :

```
#include<bits/stdc++.h>
#define R 3
#define C 5
using namespace std;

bool isvalid(int i, int j)
{
	return (i >= 0 && j >= 0 && i < R && j < C);
}

struct ele {
	int x, y;
};

bool isdelim(ele temp)
{
	return (temp.x == -1 && temp.y == -1);
}

bool checkall(int arr[][C])
{
	for (int i=0; i<R; i++)
	for (int j=0; j<C; j++)
		if (arr[i][j] == 1)
			return true;
	return false;
}
int rotOranges(int arr[][C])
```

```
{
	queue<ele> Q;
	ele temp;
	int ans = 0;
	for (int i=0; i<R; i++)
	{
	for (int j=0; j<C; j++)
	{
			if (arr[i][j] == 2)
			{
				temp.x = i;
				temp.y = j;
				Q.push(temp);
			}
		}
	}

	temp.x = -1;
	temp.y = -1;
	Q.push(temp);

	while (!Q.empty())
	{
		bool flag = false;
		while (!isdelim(Q.front()))
		{
			temp = Q.front();
			if (isvalid(temp.x+1, temp.y) && arr[temp.x+1][temp.y] == 1)
			{
```

```
            if (!flag) ans++, flag = true;
            arr[temp.x+1][temp.y] = 2;
            temp.x++;
            Q.push(temp);

            temp.x--;
        }
        if (isvalid(temp.x-1, temp.y) && arr[temp.x-1][temp.y] == 1) {
            if (!flag) ans++, flag = true;
            arr[temp.x-1][temp.y] = 2;
            temp.x--;
            Q.push(temp);
            temp.x++;
        }

        if (isvalid(temp.x, temp.y+1) && arr[temp.x][temp.y+1] == 1) {
            if (!flag) ans++, flag = true;
            arr[temp.x][temp.y+1] = 2;
            temp.y++;
            Q.push(temp);
            temp.y--;
        }

        if (isvalid(temp.x, temp.y-1) && arr[temp.x][temp.y-1] == 1) {
            if (!flag) ans++, flag = true;
            arr[temp.x][temp.y-1] = 2;
            temp.y--;
            Q.push(temp);
        }
```

```
                Q.pop();
            }
            Q.pop();
            if (!Q.empty()) {
                temp.x = -1;
                temp.y = -1;
                Q.push(temp);
            }
        }

        return (checkall(arr))? -1: ans;
}

int main()
{
        int arr[][C] = { {2, 1, 0, 2, 1},
                                {1, 0, 1, 2, 1},
                                {1, 0, 0, 2, 1}};
        int ans = rotOranges(arr);
        int rot = 0, fre = 0;
        for(int i=0;i<3;i++){
            for(int j=0;j<5;j++){
                if(arr[i][j] == 2)
                    rot++;
                else if (arr[i][j] == 1)
                    fre++;
            }
        }
```

```
        if (ans == -1)
                cout << "All oranges cannot rotn";
        else{
                cout << "Time frames : " << ans << endl;
                cout<<"fresh oranges : "<< fre <<endl;
                cout<<"Rotten oranges : "<< rot <<endl;
        }

        return 0;
}
```

Output :