Homework 2 COM S 311

Alec Meyer

September 16, 2020

Question 1

```
v.explored = true; v.layer = 0;
initialize empty queue Q;
add v to Q;
while queue is not empty
{
        pop u from the head of Q;
        for all neighbors w of node u
        {
                if(w.explored == false)
                {
                        add w to the tail of Q;
                        w.explored = true;
                        w.layer = u.layer+1;
                        if(w.layer is even)
                                add w to group a;
                        else
                                add w to group b

                        for all neighbors y of node w
                        {
                                if(y.layer % 2 == w.layer % 2)
                                        return false;
                        }
                }
        }
}
```

Question 5

```
s.explored = true;
initialize empty queue Question
add s to Question
while queue is not empty
{
        pop u from the head of Q;
        if(u has 0 neighbors)
                then v = node u;
        for all neighbors w of node u
        {
                if(w.explored == false)
                {
                        add w to the tail of Q;
                        w.explored = true;
```