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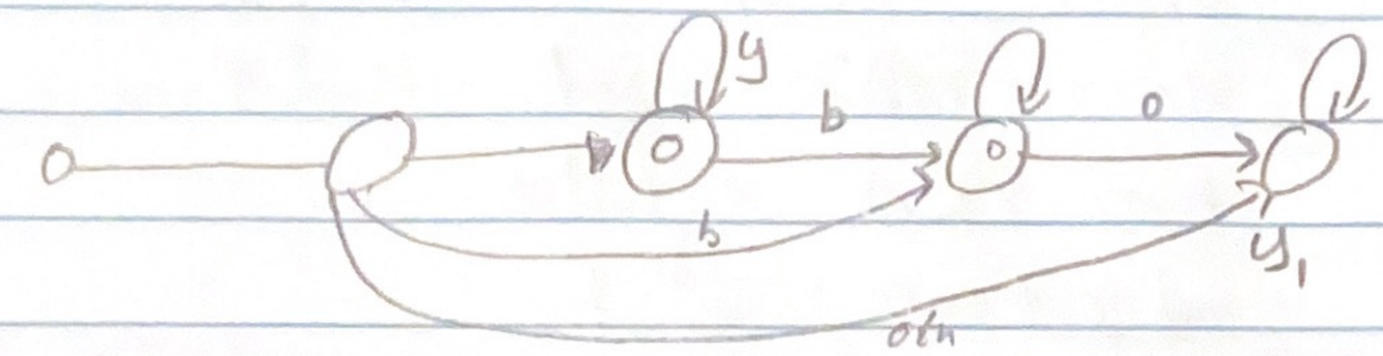
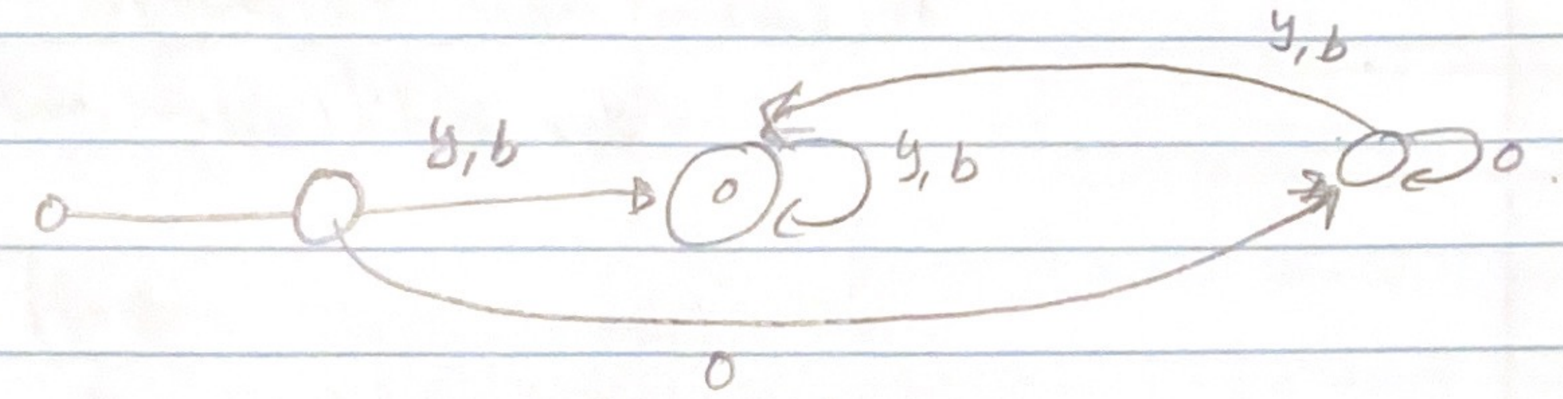
1.) FA δo) w-Path (yellow ∨ & blue)

a.)



y = yellow
b = blue
o = other.

b.)



2.)

```
Public  bool  constrain(graph  G) {
    bool  check = false;
    if (G contains (red) && G contains (blue) {
        if (blue is not contained in scc
                and.
        there exist red in scc) {
            check = true
        }
    }.
```

3)

```
Public bool good_Path(graph G){

    stack<colour> blue = {}
    stack<colour> red  = {}
    bool check = false.
    while (path in G) {
            if(current node == blue){
            blue.add (current node);

    }else (current node == red) {
            Red.add (current node)}
    }
    if (blue.Size == red.size) {
            check == true
    } else {
            check False;

    }

}
```

4.)

```
Public bool badPath(graph G){
    list <color> red = {}
    bool check = false;
    while (Path is G) {
        if(current node == red){
            red.add(current node);
        }
    }
    if(red.size %3 ==0)
        Check = True
    } else{
        Check = false
    }
```