Exercise Answer (1)

The Berlin tram route minimum color is 7.

COLOR	ROUTE
Red	M1, M2, 16, 18, 37, 61
Black	M4, M17, 50, 62
Green	M5, 12, 21, 63
Yellow	M6, 60
Orange	M8, 67
Pink	M10, 27, 68
Black	M13

Exercise Answer (2)

Step 1. Firstly I choose one route(M1) and give a one color(Red).

Step 2. Go to next route (M2) and check previous route is intersect or not ?

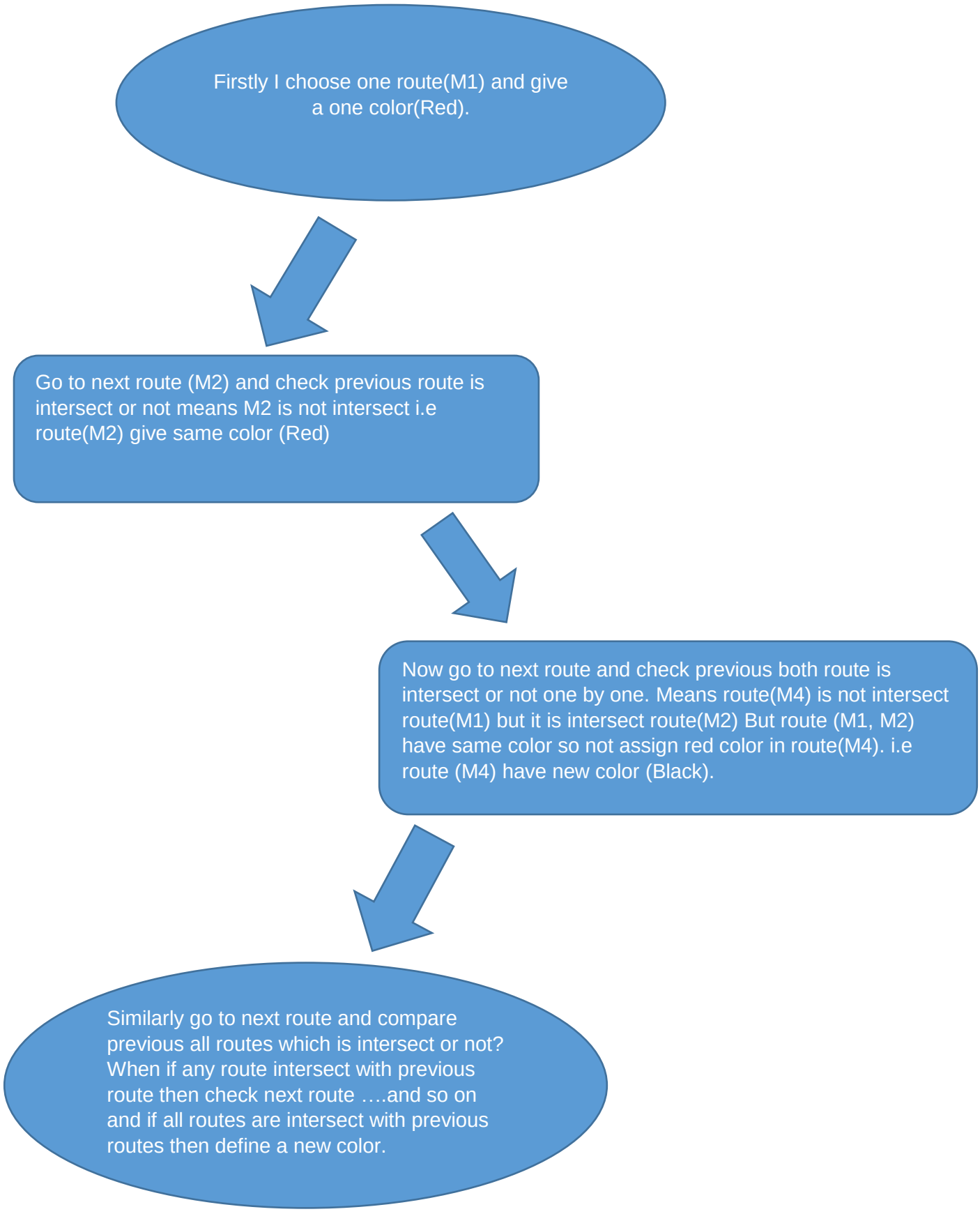
means M2 is not intersect i.e route(M2) give same color (Red)

Step 3. Now go to next route and check previous both route is intersect or not one by one.

Means route(M4) is not intersect route(M1) but it is intersect route(M2) But route (M1, M2) have same color so not assign red color in route(M4). i.e route (M4) have new color (Black).

Step 4. Similarly go to next route and compare previous all routes which is intersect or not?

When if any route intersect with previous route then check next route ….and so on and if all routes are intersect with previous routes then define a new color.


Firstly I choose one route(M1) and give a one color(Red).
Go to next route (M2) and check previous route is intersect or not means M2 is not intersect i.e route(M2) give same color (Red)
Now go to next route and check previous both route is intersect or not one by one. Means route(M4) is not intersect route(M1) but it is intersect route(M2) But route (M1, M2) have same color so not assign red color in route(M4). i.e route (M4) have new color (Black).
Similarly go to next route and compare previous all routes which is intersect or not? When if any route intersect with previous route then check next route ….and so on and if all routes are intersect with previous routes then define a new color.

Exercise Answer (5)

If we have n routes and there is a route that intersects the n-1 routes, then we have not need n colors all of time i.e in givin question statement is False.

Counter Example- If we have n routes and there is a route that intersects the n-1 routes and n-1 routes are not intersect each other then we have only 2 colors to fill in routes.