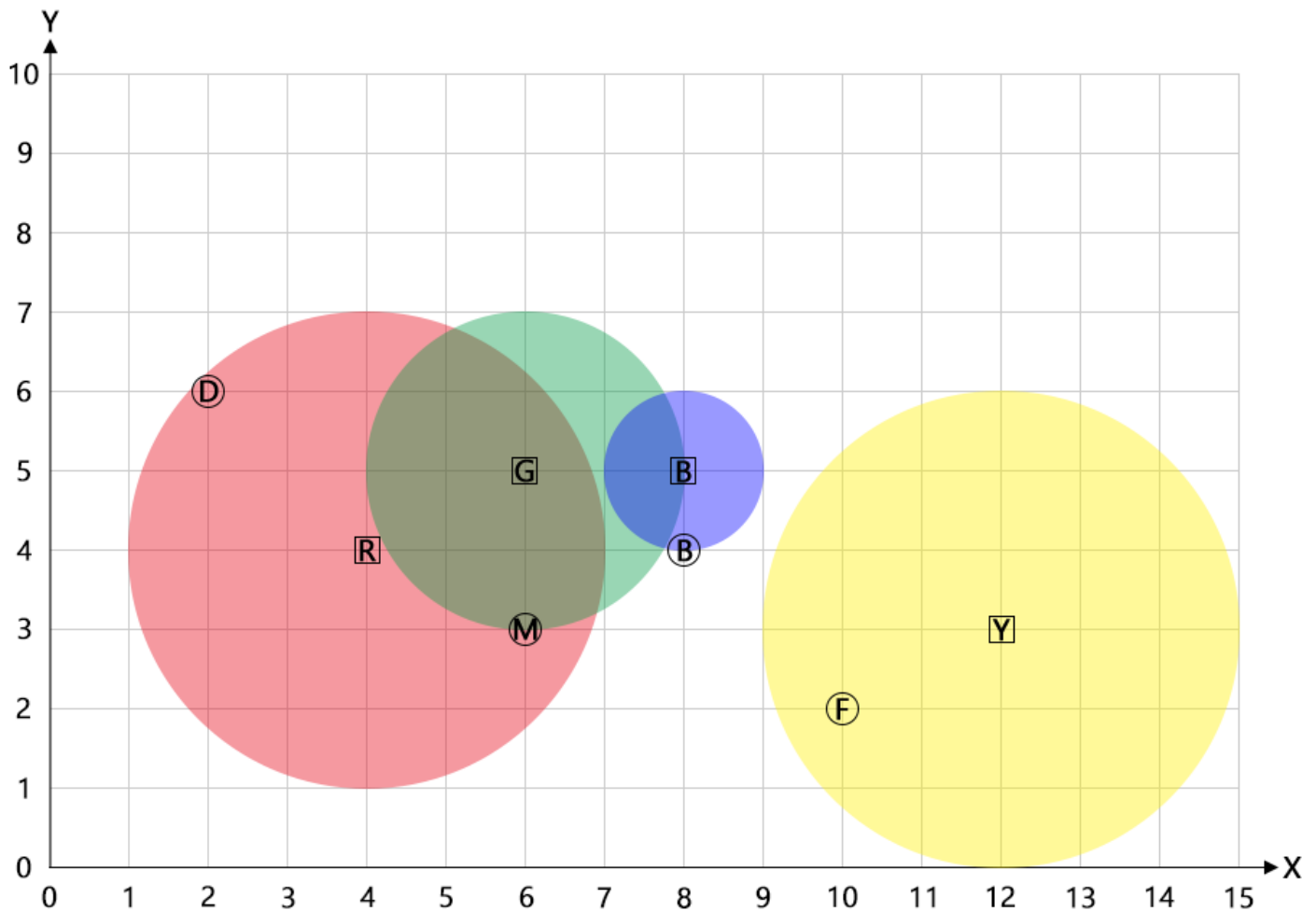


Activity 1: Problem Solving

1.



2.

Milka will be painted **GREEN**.

BLUE paint ball will be triggered and **Babe** will be painted **BLUE**.

3.

The **RED** paint ball paints the cows with the most colors.

Daisy is painted **RED**.

Milka is painted **RED** and **GREEN**.

Babe is painted **BLUE**.

4.

This problem can be represented as a **directed** and **unweighted** graph with the cows and the paintballs as the vertices and edges from paintballs to cows. If a cow/paintball is within the splatter radius of a paintball, there will be an edge from the latter to the former.

5.

Adjacency list ↓; Visually →

RED: Daisy, Milka, GREEN

Daisy:

Milka:

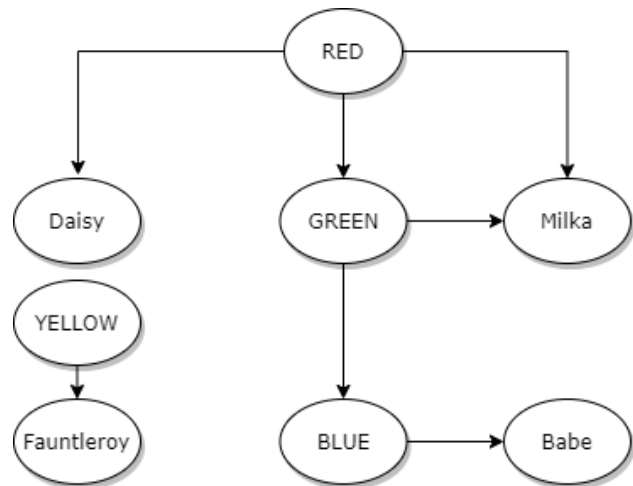
GREEN: Milka BLUE

BLUE: Babe

Babe:

YELLOW: Fauntleroy

Fauntleroy:



6.

Run modified DFS/BFS (without target vertex) on every paintball, and return the number of cows visited in this process.

7.

V: the number of vertices; E: the number of edges

- Building the graph: $O(V^2)$
- Search: $O(V+E)$
- Overall: $O(V^2 + VE)$