Homework Revise

- UVa 00627 – The Net – Link to the Task.
  - Approach:
    - BFS to find the shortest path between source and destination.
  - Solution – The Code of the Solution

Homework Revise

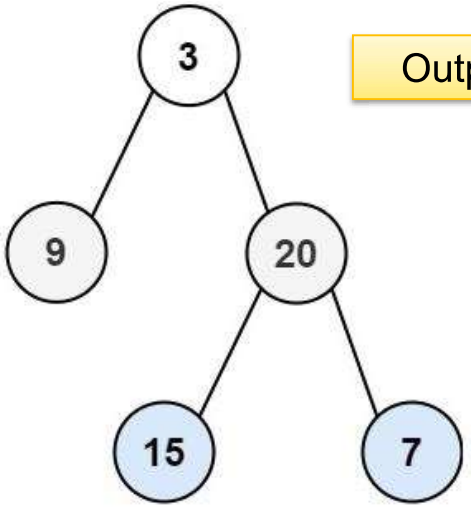
- UVa 11624 – Fire! – Link to the Task.
  - Approach:
    - BFS for Joe to find the closest exit and avoid fire.
    - BFS for fire to spread it.
    - Simulate each step to see collisions between fire and Joe.
  - Solution – the Code of the Solution

Homework Revise

- UVa 10389 – Subway – Link to the Task.
  - Approach:
    - Subway stations should be represented as nodes.
    - Source and destination should be represented as nodes.
    - Build adjacency matrix using Euclidean metric between all nodes (weight is time).
    - Dijkstra algorithm to find the fastest route.
  - Solution – the Code of the Solution

Practice – Challenge #1

- Resource: LeetCode
  - 0103 Binary Tree Zigzag Level Order Traversal – Link to the Task.



Output: [[3],[20,9],[15,7]]

Practice – Challenge #1 – Think

- Read the task (link) and think about possible solution.

Practice – Challenge #1 – Think

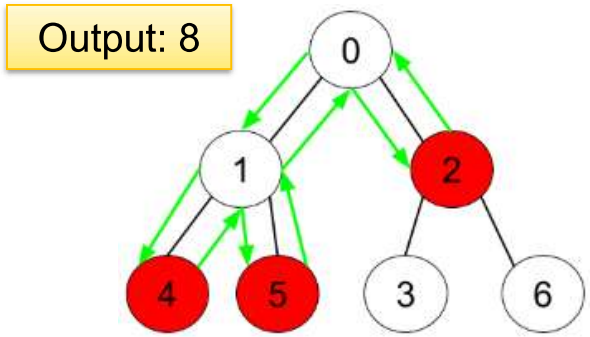
- Implement the solution for the task.

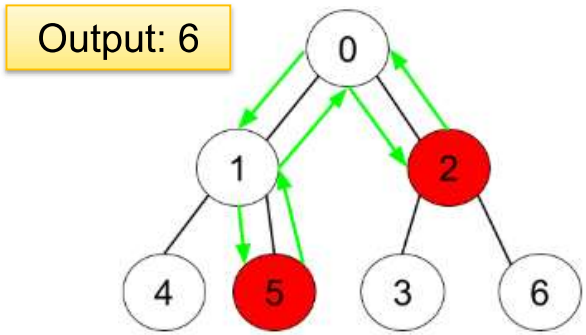
Practice – Challenge #1

- Resource: LeetCode
  - 0103 Binary Tree Zigzag Level Order Traversal – Link to the Task.
  - Solution: BFS and print nodes in the corresponding order.
    - Algorithm: O(V+E), Memory: O(N).
  - Solution – Link to the Code.

Practice – Challenge #2

- Resource: LeetCode
  - 1443 Minimum Time to Collect All Apples in a Tree – Link to the Task.





Practice – Challenge #2 – Solve

- Read the task (link) and think about possible solution.

Practice – Challenge #2 – Solve

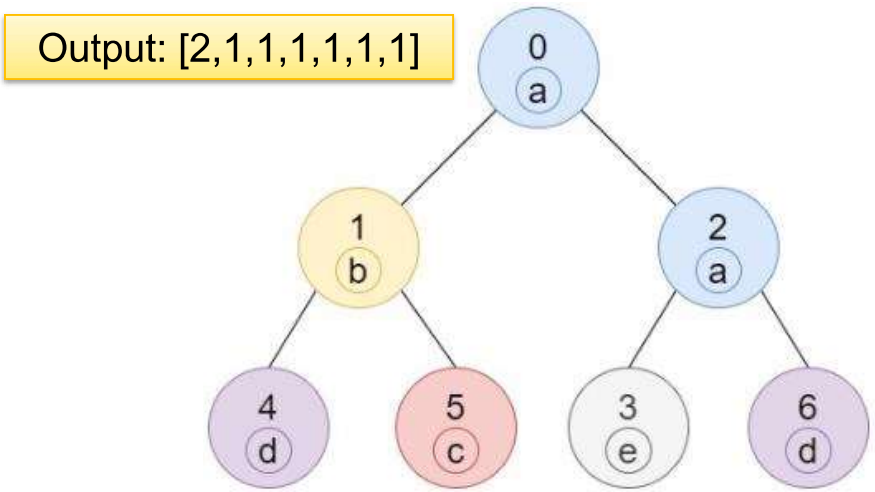
- Implement the solution for the task.

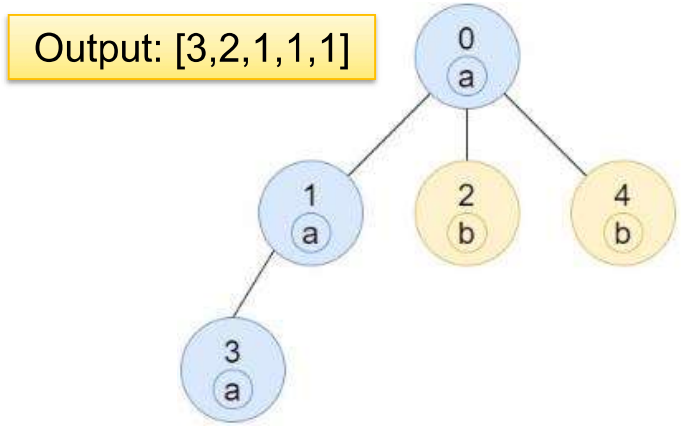
Practice – Challenge #2

- Resource: LeetCode
  - 1443 Minimum Time to Collect All Apples in a Tree – Link to the Task.
  - Solution: DFS and count nodes.
    - Algorithm: O(V+E), Memory: O(N).
  - Solution – Link to the Code.

Practice – Challenge #3

- Resource: LeetCode
  - 1519 Number of Nodes in the Sub-Tree With the Same Label – Link to the Task.





Practice – Challenge #3 – Solve

- Read the task (link) and think about possible solution.

Practice – Challenge #3 – Solve

- Implement the solution for the task.

Practice – Challenge #3

- Resource: LeetCode
  - 1519 Number of Nodes in the Sub-Tree With the Same Label – Link to the Task.
  - Solution: DFS and return stats for every sub-tree.
    - Algorithm: O(26 * V + E), Memory: O(V).
  - Solution – Link to the Code.

Hometask

- Resource: Competitive Programming 3
  - Practice:
    - UVa 10986 – Sending email
    - UVa 01112 – Mice and Maze
    - UVa 10305 - Ordering Tasks

Where to Practice

- **LeetCode** [link]
- **HackerRank** [link]
- **Kattis** [link]
- **TopCoder** [link]
- Other Resources

LeetCode

HackerRank

topcoder™