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#include <iostream>
#include <vector>
#include <queue>
#include <omp.h>

using namespace std;

const int MAX_NODES = 100;

vector<int> graph[MAX_NODES];

void parallelBFS(int start) {
    bool visited[MAX_NODES] = {false};
    queue<int> q;

    q.push(start);
    visited[start] = true;

    while (!q.empty()) {
        int current = q.front();
        q.pop();

        #pragma omp parallel for
        for (int i = 0; i < graph[current].size(); ++i) {
            int neighbor = graph[current][i];
            #pragma omp critical
            {
                if (!visited[neighbor]) {
                    q.push(neighbor);
                    visited[neighbor] = true;
                }
            }
        }
    }
}

cout << "BFS Visited Nodes: ";
for (int i = 0; i < MAX_NODES; ++i) {
    if (visited[i]) {
        cout << i << " ";
    }
}

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        cout << endl;
    }

    void parallelDFS(int start, bool visited[]) {
        visited[start] = true;

        #pragma omp parallel for
        for (int i = 0; i < graph[start].size(); ++i) {
            int neighbor = graph[start][i];
            if (!visited[neighbor]) {
                parallelDFS(neighbor, visited);
            }
        }
    }

    int main() {
        graph[0] = {1, 2};
        graph[1] = {0, 3, 4};
        graph[2] = {0, 5, 6};
        graph[3] = {1};
        graph[4] = {1};
        graph[5] = {2};
        graph[6] = {2};

        int start_node = 0;

        parallelBFS(start_node);

        bool visited[MAX_NODES] = {false};
        parallelDFS(start_node, visited);

        cout << "DFS Visited Nodes: ";
        for (int i = 0; i < MAX_NODES; ++i) {
            if (visited[i]) {
                cout << i << " ";
            }
        }
        cout << endl;

        return 0;
    }

```

*****OUTPUT*****

```
PS C:\Users\DELL\OneDrive\Desktop\HPC> cd
"c:\Users\DELL\OneDrive\Desktop\HPC\" ; if ($?) { g++
parallelbfsdfs.cpp -o parallelbfsdfs } ; if ($?) {
.\parallelbfsdfs }
```

BFS Visited Nodes: 0 1 2 3 4 5 6

DFS Visited Nodes: 0 1 2 3 4 5 6

```
PS C:\Users\DELL\OneDrive\Desktop\HPC>
```