City University

Department of Computer Science and Engineering(CSE)

Faculty of Sciences and Engineering

Semester: (Spring, Year:2024), B.Sc. in CSE (Day)

Lab Report

Course Code: CSE 417

Course Title: Artificial Intelligence

Submitted to:

Name : Mohammad Ashraful Islam

Designation : Lecturer

Department : Computer Science and Engineering

Submitted by:

Name : Md. Ashik Karim Nayon

Id : 0272310005101063

Batch : 62

Section : KC

Department : Computer Science and Engineering

Date of submission: 23 May, 2024

[For Teachers use only: Don't Write Anything inside this box]

Status

Marks:..... Signature:.....

Comments:..... Date: .....

Solving Puzzle using DFS

CODE:

```
initial_state(state(floor, floor, no)).
goal_state(state(_, _, yes)).

%grab
action(state(box, box, no), grab, state(box, box, yes)).

%climb
action(state(floor, Box, no), climb, state(box, Box, no)).

%push
action(state(floor, floor, no), push_box, state(floor, box, no)).

%walks
action(state(floor, floor, no), walk_to_box, state(floor, box, no)).

dfs(State, _, []) :-
    goal_state(State).

dfs(State, Visited, [Action | Actions]) :-
    action(State, Action, NextState),
    \+ member(NextState, Visited),
    dfs(NextState, [NextState | Visited], Actions).

solve :-
    initial_state(InitialState),
    dfs(InitialState, [InitialState], Actions),
    write('Solution: '), nl,
    write_actions(Actions).

write_actions([]).
write_actions([Action | Actions]) :-
    write(Action), nl,
    write_actions(Actions).

:- solve.
```

OUTPUT: