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|  | Bansilal Ramnath Agarwal Charitable Trust's  Vishwakarma Institute of Information Technology  **Department of**  **Artificial Intelligence and Data Science** | | |
| Name: Siddhesh Dilip Khairnar | | | |
| Class: TY | Division: B | | Roll No: 372028 |
| Semester: V | | Academic Year: 2023-2024 | |
| Subject Name & Code: ADUA31201: Artificial Intelligence | | | |
| Title of Assignment: Write a program to implement breadth first search (Heuristic search). | | | |
| Date of Performance:24-10-2023 | | Date of Submission: 11-11-2023 | |

**ASSIGNMENT NO. 4**

**CODE:**

from queue import PriorityQueue

v = 14

graph = [[] for i in range(v)]

def best\_first\_search(actual\_Src, target, n):

    visited = [False] \* n

    pq = PriorityQueue()

    pq.put((0, actual\_Src))

    visited[actual\_Src] = True

    while not pq.empty():

        u = pq.get()[1]

        print(u, end=" ")

        if u == target:

            break

        for v, c in graph[u]:

            if not visited[v]:

                visited[v] = True

                pq.put((c, v))

        print()

def addedge(x, y, cost):

    graph[x].append((y, cost))

    graph[y].append((x, cost))

addedge(0, 1, 3)

addedge(0, 2, 6)

addedge(0, 3, 5)

addedge(1, 4, 9)

addedge(1, 5, 8)

addedge(2, 6, 12)

addedge(2, 7, 14)

addedge(3, 8, 7)

addedge(8, 9, 5)

addedge(8, 10, 6)

# Example usage:

best\_first\_search(0, 9, v)

**OUTPUT:**

**A computer screen with white text

Description automatically generated**