

GROUP ASSESSMENT ITEM COVER SHEET

Student Numbers:	Emails:	FIRST NAMES	FAMILY / LAST NAMES
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Course Code	Course Title
C O M P 2 2 3 0	Algorithms
(Example)	(Example)
A B C D 1 2 3 4	Intro to University

Campus of Study: Callaghan (eg Callaghan, Ourimbah, Port Macquarie)

Assessment Item Title: Assignment Due Date/Time: 8/10/2021 11:59 PM

Tutorial Group (If applicable): Assignment Group 2 Word Count (If applicable):

Lecturer/Tutor Name: Professor Ljiljana Brankovic

Extension Granted: ☐ Yes ☒ No Granted Until: N/A

Please attach a copy of your extension approval

NB: STUDENTS MAY EXPECT THAT THIS ASSIGNMENT WILL BE RETURNED WITHIN 3 WEEKS OF THE DUE DATE OF SUBMISSION

Please tick box if applicable

- ☒ *Students within the Faculty of Business and Law, Faculty of Science, Faculty of Engineering and Built Environment and the School of Nursing and Midwifery: We verify that we have completed the online Academic Integrity Module and adhered to its principles.*
- ☐ *Students within the School of Education: We understand that a minimum standard of correct referencing and academic literacy is required to pass all written assignments in the School of Education; and we have read and understood the School of Education Course Outline Policy Supplement, which includes important information related to assessment policies and procedures.*

We declare that this assessment item is our own work unless otherwise acknowledged and is in accordance with the University's [Student Academic Integrity Policy](#)

We certify that this assessment item has not been submitted previously for academic credit in this or any other course. We certify that we have not given a copy or have shown a copy of this assessment item to another student enrolled in the course, other than members of this group.

We acknowledge that the assessor of this assignment may, for the purpose of assessing this assignment:

- Reproduce this assessment item and provide a copy to another member of the Faculty; and/or
- Communicate a copy of this assessment item to a plagiarism checking service (which may then retain a copy of the item on its database for the purpose of future plagiarism checking).
- Submit the assessment item to other forms of plagiarism checking.

We certify that any electronic version of this assessment item that we have submitted or will submit is identical to this paper version.

Turnitin ID: n/a

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Signature: <u>KBeattie</u>	Date: <u>30/9/2021</u>
Signature: <u>Joshua Flynn</u>	Date: <u>30/9/2021</u>
Signature: _____	Date: _____
Signature: _____	Date: _____
Signature: _____	Date: _____

Comparison Data

Maze	Size	DFS Number of Steps	DFS Time (ms)	BFS Number of Steps	BFS Time (ms)
1	20 x 20	778	1.2941	22	0.4936
2	20 x 20	30	0.2219	32	0.4687
3	20 x 20	657	0.9503	103	0.5995
4	20 x 20	29	0.242	30	0.4839
5	20 x 20	789	1.1494	10	0.4599
6	20 x 50	1936	2.1072	56	0.5592
7	20 x 50	1966	1.9749	39	0.5398
8	20 x 50	34	0.2376	35	0.5286
9	20 x 50	1983	2.1426	16	0.4667
10	20 x 50	23	0.2198	24	0.4827
11	100 x 100	50	0.2993	51	0.5731
12	100 x 100	19974	9.4012	25	0.4977
13	100 x 100	35	0.2543	36	0.5263
14	100 x 100	19969	8.8147	31	0.5369
15	100 x 100	19976	8.5338	24	0.5008

Analysis

BFS performs significantly better compared to DFS as the solving time and number of steps increase at a faster rate for DFS than BFS. BFS performed significantly less or similar steps to achieve the same outcome than DFS. DFS may end up traversing down wrong paths increasing the steps required.