Pattern Detection Activity Guide

Mission 4: Language Logic, Objective 3

Name:

The activity for this objective is to use a more advanced search algorithm to see if a selected pattern of 0s and 1s is found in a binary grid.

- Students can work individually or with a partner for this activity.

1. Go to ***File → Browse Files...*** and open the file called **BRN_pattern_detect**	☐ File opened
2. Go to ***File → Save As*** and rename the file **pattern_detect**	☐ File saved as **pattern_detect**
3. Follow CodeTrek to: • Look through the code to view the functions and algorithm that search for and detect a pattern • Write code for the Main Program **NOTE:** *When adding code, be very careful with the indenting, spelling and punctuation!*	☐ CodeTrek followed
4. Run the code. • Read the instructions on CodeX • Select a pattern by pressing a button (U/D/L/R) • Observe the results • Repeat several times	☐ Run the code
5. Return to the code and go to the ***patterns*** list. • Change the combination of 0s and 1s in a pattern. • Run the code several times and choose your changed pattern each time. Original pattern (2×2 table) — Pattern changed to: (2×2 table)	☐ Pattern changed ☐ Run the code Was the pattern found in at least one grid? ☐ Yes ☐ No
6. Return to the code again and go to the ***grids*** list. • Change a grid, or add a grid, to the list. • The grid can be any size (3x3 minimum). • The grid does not have to be a square. • Run the code several times until your grid is randomly selected a few times. My grid:	☐ Grid changed or added: ☐ Run the code Was a pattern found in your grid at least once? ☐ Yes ☐ No

7. Write a reflection of this activity. What did you learn about search algorithms and pattern detection from this activity?