

**Informatics Institute of Technology**

Department of Computing   
(B.Eng.) in Software Engineering

**Module: 4COSC0010C Programming Principles II**

**Module Leader: Mr. Guhanthan Poravi  
  
Assignment 01**

Date of Submission : 4th of March 2019

Student ID : 2018051

Student UoW ID : w1714878

Student First Name : Sachintha

Student Surname : Amarasiri

**Pseudocode**

START

FUNCTION getvalue()

1. GET i, j
2. PROMPT user input size
3. DISPLAY square size
4. GET square size (n)
5. IF(n<2)
6. DISPLAY invalid message
7. CALL get value function
8. ELSE
9. CREATE new 2D array
10. SET count to 1
11. FOR (i = 0; i < n; i++)
12. FOR (j = 0; j < n; j++)
13. PROMPT user to input numbers
14. DISPLAY user input numbers
15. END FOR
16. END FOR
17. CALL display square function
18. END IF

END FUNCTION

FUNCTION display square

1. FOR (i = 0; i < n; i++)
2. FOR (j = 0; j < n; j++)
3. PRINT square
4. END FOR
5. CALL displayResult

END FUNCTION

FUNCTON isMagicSquare()

1. GET i , j , sum\_row,sum\_col

2. SET sum to 0 and sum\_diagonal to 0

3. FOR (j = 0; j < n; j++)

1. CALCULATE sum
2. END FOR
3. FOR (i = 1; i < n; i++)
4. SET sum\_row to 0
5. FOR (j=0;j<n;j++)
6. CALCULATE sum of each row
7. IF sum\_row not equal sum
8. Return false
9. END IF
10. END FOR
11. FOR (j = 0; j < n; j++)
12. SET sum\_col to 0
13. FOR (i = 0; i < n; i++)
14. CALCULATE sum of each column
15. IF sum\_col not equal to sum
16. Return false
17. END IF
18. END FOR
19. FOR (i = 0; i < n; i++)
20. FOR (j = 0; j < n; j++)
21. IF (i==j)
22. CALCULATE sum of first diagonal
23. END IF
24. IF sum\_diagonal not equal to sum
25. Return false
26. END IF
27. END FOR
28. FOR (i = 0; i < n; i++)
29. FOR(j = 0; j < n; j++)
30. IF(i+j == n-1)
31. CALCULATE sum of second diagonal
32. END IF
33. IF sum\_diagonal not equal to sum
34. Return false
35. END IF
36. END FOR
37. Return true

END FUNCTION

FUNCTION isLoShuSquare()

1. GET I,j

1. Create new array to store number of times number appear
2. FOR (number = 1; number < 10; number++)
3. SET each frequency to 0 initial
4. END FOR
5. FOR (i = 0; i < n; i++)
6. FOR (j = 0; j < n; j++)
7. IF check all values between 1 and 9
8. Return false
9. END IF
10. Increase frequency
11. FOR (number = 1; number < 10; number++)
12. IF check number display more than once
13. Return false
14. END IF
15. END FOR
16. FOR ( i = 0; i < 3; i++)
17. SET sum sum to 0
18. FOR ( j = 0; j < 3; j++)
19. CALCULATE sum
20. IF sum not equal to 15
21. Return false
22. END IF
23. END FOR
24. Return true

END FUNCTION

FUNCTION dispalayResult()

1. PRINT ismagicsquare
2. PRINT isloshusquare

END FUNCTION

FUNCTION main()

1. CALL getvalue function
2. SET stop\_programme = false
3. WHILE(!stop\_programme)
4. PROMPT user choice
5. GET user choice
6. END WHILE

END FUNCTION

END