

BIM213-DATA STRUCTURES AND ALGORITHMS

Homework I - Recursive Functions - Report

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Fill the table for the each given algorithm, is recursive is a good or bad solution? (Just add a X)

	Good	Bad
Computing Fibonacci Sequence		X
Towers of Hanoi	X	
Computing factorial of a given number		X
An autonomous robot looking for a way out of an unmapped maze	X	

What is the purpose of this Project?

Purpose of this project is to design a Sudoku-like game environment and program using a recursive approach and instead of integers, app runs given keys: CNGBIM213 .

How did we solve it ?

Firstly we build a completed puzzle, then erased variables from cells until a minimum number of hint to solve the rest.

In SudokuGenerator class we create a 9x9 array and by using CreateValidSudoku method in SudokuSolver class, we filled our Sudoku puzzle.

We filled our array with a recursive method by randomly selecting from the numbers 1 to 9 with Random class and checking the 3 * 3 squares, columns and rows at the same time.

Then we copied our array to another in order to save it as solved sudoku.

We loop the Sudoku to make it half empty. We randomly select some cells and make them 0.

While we doing it we used a temporary array and solveSudoku method from SudokuSolver class.

Then in SudokuGenerator class, we used printNums method to change the integers that are from 1 to 9 to CNGBIM213 with switch cases ,and we changed 0's to “_”.

First we printed unsolved sudoku with printNums method then we printed solved(copied) sudoku with same method.

Which environment did we used ?

We used JetBrains-IntelliJ environment for our Project.