Course: Introduction to Programming Using Python

Module 4. Functions. Part 3

Task 1

Write a recursive function for finding the greatest common divisor of two integers.

Task 2

Develop a game of Bulls and Cows. The program chooses a four-digit number, and the player has to guess it. After the user enters a number, the program reports how many digits of the number are guessed (bulls), and how many digits are guessed and stand in the right place (cows). After guessing the number, print the number of user's attempts. Use recursion in your game.

Task 3

There are an 8×8 chessboard and a knight. The program should request the coordinates of the square from the user and put the knight there. The program's objective is to find the knight's path that allows it to go through the entire chessboard while stepping on each square only once. (Since the process of finding a path for initial squares can take a long time, we recommend you to begin with a 6×6 chessboard). Use recursion in your game.

Task 4

Develop a game of 15 Puzzle.