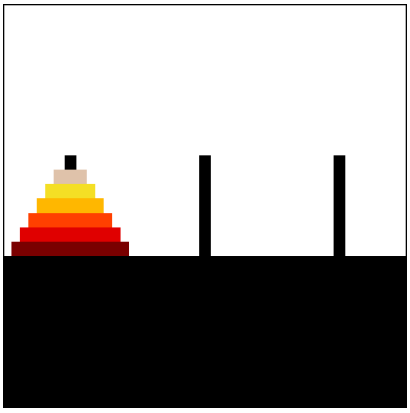
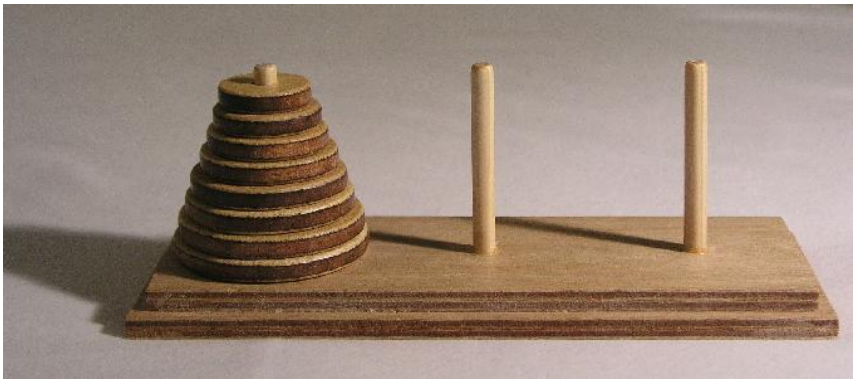
C++ assignment: Tower of Hanoi



Assignment

This assignment is part of the development basics category which can be found in the assessment criteria rubric.
The Tower of Hanoi is a mathematical puzzle. It exists of three rods, and a number of disks of different sizes which can slide onto any rod. The goal is to move the tower of disks from the left-most rod to the right-most rod. The puzzle follows three simple rules:

1. Only one disk can move at a time.
2. Only the uppermost disk on a stack can be moved.
3. A larger disk may not be placed on top of a smaller disk.



There are several solutions to solving this problem with programming. Any viable solution is allowed, but be sure to check if this solution meets the requirements.

Delivery

The student delivers a PDF report that documents the solution applied in the C++ project and motivates, with code examples, how each requirement/examplar is met.

To hand in your report, upload it to the VLO to the assignments directory for this assignment before the deadline**.** Make sure the report contains your name and student number.

Requirements

- ❏ Programming language has to be C++.
- ❏ The program makes use of pointers and references.
- ❏ There is a visual representation. *(hint: console ASCII art is an easy solution.)*
- ❏ There are at least three disks.
- ❏ The disc movement follows the three rules.
- ❏ The puzzle should be able to solve itself.

Exemplar

- ❏ Disc number can be set by the user. *(4, 5, 6, 7, or more discs)*
- ❏ The user can interact with the puzzle, and the program can pick up where the user gets stuck.
- ❏ Visual representation is done with graphics in a window. *(Or other, non command prompt ASCII solutions.)*
- ❏ Implemented the bicolor tower of Hanoi variation (see link below).
- ❏ Implemented the magnetic tower of Hanoi variation (see link below).

Grading

This assignment is the resit of the first part of the Methods & Techniques grading of this project. See the M&T assessment criteria on the VLO (Documents/Assessments/Methods & Techniques) for more details.

Preparation

C++ Essential Training by Bill Weinman on Lynda.com
Code Clinic: C++ by Bill Weinman on Lynda.com (especially Problem Three: Eight Queens) *(visual representation in ASCII)*
Tower of Hanoi wiki-page
Magnetic Tower of Hanoi
Bicolor Tower of Hanoi
C++ Win32 Courses