**Workshop Proposal by Yasemin Gulbahar**

Title: **Becoming a Computational Thinker**

Workshop Description:

What is computational thinking? Computational Thinking (CT) has become a skill for the 21st century that is becoming ever-more important in today’s increasingly technological world for problem solving both in industry and the academic sector. In this workshop, you will not only understand various dimensions of CT but also explore these dimensions through different solutions for the same problems. This workshop is useful for everybody who wants to understand the way we make computers work. Although no coding experience is needed, depending on your prior knowledge you are welcome to use Python instead of Pseudocode. The workshop will start with a short presentation (~20 min) about CT definitions, dimensions, and processes followed by a problem solving session (~50 min). The workshop will end by a discussion on the comparison of CT processes based on the problem solving experiences (~20 min).

During the workshop, we will explore the solutions for the following problems:

# **Building a Maze Solver**

* + Block-Based Approach (Blockly Games: Maze Level 10 <https://blockly.games/maze?lang=en&level=10&&skin=0>)
  + Text-based Approach Python ([Tutorial Google Colab](https://realpython.com/python-maze-solver/))
* **Exploring Towers of Hanoi**
  + Game-Based Approach (<https://haubergs.com/hanoi> OR <https://webgamesonline.com/towers-of-hanoi/>)
  + Text-based Approach Python ([Tutorial Google Colab](https://realpython.com/python-maze-solver/))

All the necessary links to the related web sites are provided within text, whereas tutorial files are provided as Google Colab files.

**Additional Resources**

* Towers of Hanoi <https://python-course.eu/applications-python/towers-of-hanoi.php>
* Tower of Hanoi in Python: Complete Step-by-Step <https://www.askpython.com/python/examples/tower-of-hanoi-in-python>
* Mobile Game for Towers of Hanoi
  + <https://play.google.com/store/apps/details?id=com.littletrickstudio.derek.hanoigame&hl=en&gl=US>)
  + <https://apps.apple.com/us/app/tower-of-hanoi-online-puzzle/id1065987236>