Lab4

November 14, 2023

BFS and DFS

1. Write code for the topological sort of a directed acyclic graph (recursive version) and use the data shown in Figure 1 to test your implementation (40%).

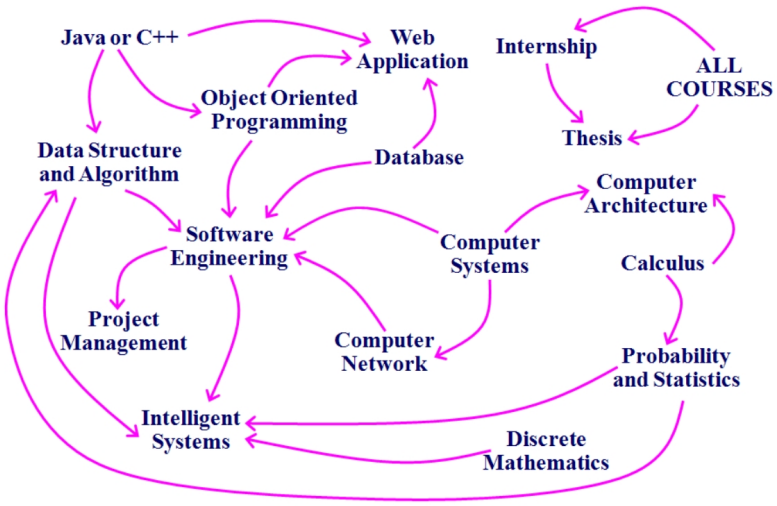

Figure 1: Course Dependencies

2. Write code (using stack) to solve the following problem. Your implementation needs to print all solution of the problem. (40%)

   > *A farmer with its wolf, goat, and cabbage come to the edge of a river they wish to cross. There is a boat at the river's edge, but, of course, only the farmer can row. the boat also can carry only two things (including the rower) at a time. If the wolf is ever left alone with the goat, the wolf will eat the goat; similarly, if the goat is left alone with the cabbage, the goat will eat the cabbage. Devise a sequence of crossings of the river so that all four characters arrive safely on the other side of the river.*

3. Documentation (20%)

Points for attnetion

1. For the implementation of these algorithms, you are free to select a programming language of your choice.
2. Kindly upload the source code files along with their associated documentation in a compressed ZIP format to the elearning system for assessment.
3. Your document should be submitted in electronic format whenever possible. The document format should be either Word, PDF, or Markdown.
4. The deadline of this lab is 23:59:59 on November 17.
5. The naming format for the file should be "lab7-StudentID-Name," and make sure to compress all the files into a single compressed folder.
6. If you have any questions please feel free to contact teaching assistants.