

CMPSC 102
Discrete Structures
Fall 2018

Lab 5 Assignment:

Mini-Writing Assignment on Ideas for a Potential Project in Discrete Structures

Submit deliverables through your assignment GitHub repository bearing your (team) name. Complete the Markdown document in the writing/ directory.

Objectives

To learn how to locate articles and discover ideas which you may want to use for a potential group project in this course. Discuss potential ideas with your group to determine group interest levels for a combined approach to the study.

For your deliverable for this assignment, you and your group are to determine five ideas and, for each, to provide a recent scholarly article(s) (likely, you will need two recent articles) to motivate and position the idea in the context of computer science.

GitHub Starter Link for Groups

STOP! STOP!

Not everyone will be clicking this link at this time!

Only the team leader will be clicking the link to create the repository!!

<https://classroom.github.com/g/zUN3R694>

Creating your repository

Please work in groups: Unless you provide the instructor with documentation of the extenuating circumstances that you are facing, not working in a team and not accepting the assignment means that you automatically receive a failing grade for it.

We will use a group assignment functionality of GitHub Classroom for this assignment. For group assignments **only one person will be creating the team while the other team members will join that team**. Please form a team of **no more than four people** and select one person to create the repository.

The selected person of the team should go into the link to the lab in the assignment sheet. Copy this link and paste it into your web browser. Now, you should accept the laboratory assignment and create a new team with a unique and descriptive team name (under “Or Create a new team”).

Now the other members of the team can click on the assignment link and select their team from the list under “Join an Existing Team”. When other team members join their group in GitHub

Classroom, a team is created in our GitHub organization. Every team member will be able to push and pull to their teams repository.

To push your changes, you can use the following commands to add a single file, you must be in the directory where the file is located (or add the path to the file in the command):

- `git commit <nameOfFile> -m ‘Your notes about commit here’`
- `git push`

Alternatively, you can use the following commands to add multiple files from your repository:

- `git add -A`
- `git commit -m ‘Your notes about commit here’`
- `git push`

Reading Assignment

Please use the inter-library loan service, databases or other online resources to help you find academic articles (i.e., IEEE, ACM and similar quality publications) that provide your group with ideas and that you can cite in your own work. Please do not use blogs or news articles.

Additional Materials

Please locate your file, `writing/ideas.md` in your repository for this lab. You will use this file to record your group ideas and to include their associated article references for the completion of this lab. Do not submit the articles themselves. Your submission document is to be completed in Markdown. For help, see *Mastering Markdown* <https://guides.github.com/features/mastering-markdown/> for more details about Markdown. Another good reference for writing in Markdown may be found at: <https://markdown-it.github.io/>.

What To Do: Determine Ideas and Find Supporting Articles

Your project is to be made up of Python programming and concepts from Discrete Structures to fit into one or more of the following categories. In this lab, you are to determine five ideas of which one could be selected for the project. Each idea must be supported in some way by a primary source article. Ideas you may want to consider for your project may be the following.

- To explain a mechanism or algorithm (in sets, graph theory, programming, etc.)
- To explain some concept of interest that combines mathematics and computer science
- To provide some insight into an important phenomenon in computer science and programming

- To demonstrate a method or technique in terms of course topics

Some other potential ideas that you might want to investigate for this assignment are methods of security, graphics, interesting algorithms, tools, methods or other similar areas. You are free to choose any topic but remember this topic will be approved by the instructor later on during the semester (when the project is assigned to your group.)

Get the (Research) Party Started

Determine your group members and group coordinator who will handle the repository organization. Give your group a name. Everyone must work in a group.

To help you find your five ideas for potential projects (with supporting primary source articles), you are to work in a group and discuss ideas to find some topic that you all find interesting. With each idea, you are to find at least one academic article (references) to contribute the foundational knowledge, context and background to the potential topic. Be sure to also use your selected articles to motivate or position your idea in terms of our course material. Remember that there will be four group members working together and so the instructor is looking for involved topics.

A Mini-Literature Review For *Primary-Source* Articles

Please use the inter-library loan service (from the campus library) or other on-line resources (such as Google Scholar) to locate primary source (academic) articles that you can cite, data or other resources which you feel would be beneficial in helping you and your team determine a potential project. Your articles are to contain *original* scientific work and do not fit under “news” coverage of popular science. Since your work is to be firmly positioned in academic literature, please do not use blogs for your academic foundational work to base a thesis to explore. If your articles are published by a well-known group, then they are probably acceptable (i.e., IEEE, ACM, Springer, Elsevier and etc.), otherwise, they may not be of the standard with will provide your work with its necessary foundation.

Note: You must use academic articles. If your reference is a link to a web page or video (i.e., blog or vblog), then this material is (probably) not going to be sufficient for your literature review.

Question to Address

For each of your five ideas, you will have at least one article (often you will need two articles) to position an idea in a scientific setting and philosophy. Please be sure that your articles are from recent times: select articles from no more than five years ago.

For your deliverable for this assignment, you are to address the following leading questions concerning each of your articles as it relates to a potential idea for your final project. Your responses to each of the following leading questions will be a paragraph (or more) in length. Please be concise and direct in your discussion.

1. Explain your idea for a class project.

2. How is the idea connected to computer science?
3. What is the article's reference to support this idea?
 - Note: Articles are no older than five years
4. What is the central thesis to the article?
5. How will this article support your idea?

Required Deliverables

Submit deliverables through your assignment GitHub repository bearing your name, as well as all names in your group for your group work. Place ideas and justified citations in the file `writing/ideas.md`. Your submitted document will be about a page in length. Please keep your discussion concise.

1. **Work in Groups with a Team Leader:** You are to work in groups no larger than four (4) people to complete this idea-lab. Give your group a name. Each member is to work collaboratively with group members. The group will submit the `writing/ideas.md` document to the group repository to be graded by the instructor. You are to use Markdown to format your written documents. **Please be sure to add the names of each member of your group in all your submitted work (i.e., code and markdown documents).**
2. Locate the File, `writing/ideas.md`. You will use this file to respond to the questions in blue above. For each question, you can estimate about a paragraph will be necessary to fully justify your argument. **Please be sure that you justify why your idea of interest to discrete structures.**

Please let the instructor know of any questions that you or your group may have. Please use email or make office-hour appointment slots if you would like to discuss an issue.