# Inter-Hall OpenSoft Competition 2013

## *Project Specification*

**Title**

**Citation Analyzer**

## Objective

Citations of a published article are other articles/papers/books etc. that refer to this article. A researcher is often interested to look at citations to a paper to assess the impact of a work, or of papers published in a journal to assess the quality of a journal. You are required to build a system that will show and analyze citations to papers published by a particular researcher or in a particular journal.

## Basic Architectural Requirement

Your system must be a standalone application, and must not use any browser like IE/Firefox/Chrome etc.

In order to build the system, you need the citations. Your system should connect to Google Scholar (scholar.google.com) as and when needed during its operation and collect the citations. The Google Scholar results should be parsed by your application and analyzed to provide the different features of the system. If you are not familiar with Google Scholar and how to access it, all necessary information is easily available on the net.

## Target Features

The user interface must provide the following basic features:

1. Given an author name
   a. Show the author's papers and number of citations to each, sorted in decreasing order of number of citations
   b. Show the author's papers and number of citations to each, sorted by year (most recent to least recent)
   c. Same as (a) and (b) above, but restricted to papers within a year range, sorted in decreasing order of number of citations
   d. Same as (a) and (b) above, but restricted to papers within a year range, sorted by year (most recent to least recent)
   e. Show the h-index and the i-index of the author (look up their definitions in Google)

f. Show the citation statistics such as number of cites per paper, number of cites per year etc.

2. Given a journal name
   a. Show all papers published in the journal and number of citations to each, sorted in decreasing order of number of citations
   b. Show all papers published in the journal and number of citations to each, sorted by year (most recent to least recent)
   c. Same as (a) and (b) above, but restricted to papers within a year range sorted in decreasing order of number of citations
   d. Same as (a) and (b) above, but restricted to papers within a year range sorted by year (most recent to least recent)
   e. Show the h-index and the i-index of the journal
   f. Show the citation statistics such as number of cites per paper, number of cites per year etc.

3. For any paper shown in any of the features (either a paper of the author or the journal name given, or a citation to any paper), show the list of citations to the paper.

The above features are required to be implemented. However, you are encouraged to add more features that you think would be useful for a researcher while browsing citations of his/her own papers, papers of others, or papers published in journals. The features must be meaningful and useful in this context, simply adding more features that may not be deemed to be useful by the judges may not help you.

## Input/Ouput Devices

**Input:** Keyboard and Mouse only          **Output:** Monitor only

## Environment

*Platform*: 64-bit Linux (Fedora 18/Ubuntu 12.04 LTS) or Windows 7
*Programming Language*: C / C++ / C# / Java

You can use any html parser.

**Very Important:** Your software will be installed on a vanilla Linux or Windows 7 machine, with .NET 4.0 (for Windows) and Java (for both) installed, but with no other software installed. Any parser that you use must be packaged with your software and installed while installing your software.

## Report

All projects must be accompanied with three reports in pdf format. Each report must be a neatly-formatted document (Single spaced, Times-roman, 12 pt font for normal text and 14 pt bold font for headings, both left and right justified).

1. **Installation Guide (InstallGuide.pdf):** A user guide for installing your software, including system requirements. *The installation guide will be followed to the letter to install your software, so you must make sure to assume nothing and mention all installation details explicitly.*
2. **User Manual (UserManual.pdf):** This should contain the list of features available and how to use them. Any user should be able to know about all the features in your system and how to use them from this report.
3. **Judges' Report (JudgeReport.pdf):** This should contain the following:
   a. A listing of the features of your application available to the user. Each additional feature you put (beyond the basic features listed above) should carry proper justifications for its inclusion. In particular, it must be accompanied with a description of what it does and why will it be useful.
   b. A description of the architecture of your system clearly showing the different modules of your system and their interactions.
   c. A test plan to show how you have tested your system.

## Grading

Your project will be graded on the following factors:

1. Correctness of Basic Features: 25%
2. System Design, Implementation, and Test: 15%
3. Documentation and Report: 10%
4. Packaging and Installation: 10%
5. Additional Features: 10%
6. Interface Design and Ease of Use: 20%
7. Query Performance: 10%

**Note**:

*Credit will go to elegance, efficiency, ease of use, reliability of the interface design, the quality of your report etc. Note that just putting more features in your system need not earn you more marks – their usefulness needs to be justified.*

*Besides your skills for writing programs, the application also tests your skills in designing software that is easy to use and matches a given user section's needs well. The evaluation of any such software has a subjective component as to how well the designed software caters to the needs. The decision of the judges in this regard will be final and binding on all teams participating in the event.*

**_Plagiarism:_** *Copying any code specific to the application from the internet may cause disqualification.* ***The decision of the judges in this regard will be final and binding on all teams.***