

# **Project Proposal**

## **Implementation of Call Graph in Understanding Relationship in a C code**

**Course: SE305 : Software Project Lab I**

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## **Table of Contents**

1. Overview	3
1.1 Background	3
1.2 Objectives	3
1.3 Scope	3
1.4 Assumptions and Constraints	3
1.5 Dependencies and Risks	4
2. Project Delivery	4
2.1 Deliverables	4
2.2 Time Scales	5
3. Cost benefit estimate	5
3.1 Costs and Benefits	5
3.1.1 Costs	5
3.1.2 Benefits	6
3.2 Project Resources	6
3.3 Funding and Staff Requirements	6
3.4 Other Staff and Requirements	
4. Summary	7
References	8

## **1. Overview**

In this segment, topics such as “Background, Objectives, Scope, Assumptions and Constraints, Dependencies and Risks” are covered. Here we will try to cover questions like, “Why this project is needed?”, “How can this help people?”, “What are limitations of this project?” etc.

### **1.1 Background**

Structured programming is very hard to manage when the challenges become larger and larger. It's a big problem to find an error in a large C code. Moreover, understanding the approach for a solution of a problem is not easy in structured programming. We wish, if we had a machine that could make our task easy !

### **1.2 Objectives**

Our main objective is to solve the problem described in the “Section 1.1” which is to present a relationship graph that can make us understand the code easy. Our main goal is to create an application which will search for all the global variables and the user defined functions and present their connectedness. There are also some other objectives in this project. Those are:

- a. Handling a big project consisting of several thousands of lines of source code.
- b. Learn to work in a group.
- c. Learn to implement Java programming correctly.

This will help coders to find errors, understand approach of a structured code, find cycles and bugs.

### **1.3 Scope**

This application will present a relationship graph consisting of all global variables and user defined functions. Moreover, this can help you understand the efficiency of the code, find the bugs, function cycles, lifetime of variables.

However, this application will only work for primitive type variables.

### **1.4 Assumptions and Constraints**

Assumptions:

This application is for basic C (or C++) code to implement.

Constraints:

However, few latest flexible operations are not supported for a C++ code.

## **1.5 Dependencies and Risks**

Dependencies:

There must be a C, C++ or a text file with a C (C++) code.

Risks:

There is no risk attached to this project.

## **2. Project Delivery**

In this project, there are many deliverables such as: Project Proposal, Documentation, Report, User Manual, Source Code, Project Demonstration etc. We also have fixed some approximate time for each work to be done.

### **2.1 Deliverables**

There are some deliverable things in this project. These are:

- a. Project Proposal
- b. Documentation
- c. Report
- d. User Manual
- e. Source code
- f. Project Demonstration

## 2.2 Timescales

A Gantt chart of the project is as follows:

Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
Planning																
Meetings																
Collecting materials for study																
Grammatical Study																
Coding																
Bug Fixing																

## 3. Cost Benefit Estimate

Estimating Cost and benefit is very important because it help one to realize if one project is really worth spending time for. Cost Benefit estimation is described below.

### 3.1 Costs and Benefits

The main cost is man hours here. Man hour is the amount of work performed by an average worker (Here, worker means an undergraduate Software Engineering student).

The main benefit is this application will save time for users by searching desired text fast and also will rank files where it has conducted the searching.

### **3.1.1 Costs**

There are 3 members in our group. Each members will work 6 hours per week.

Total working hour per week:  $3 \times 6 = 18$  hours

Total time for project:  $18 \times 16(\text{weeks}) = 288$  (hours)

Time Estimation:

Planning : 1 week

Meeting with Team members : 1 week

Meeting with Team supervisor : 16hrs

Collecting materials for study : 2hrs

Grammatical Study : 2 week

Coding and Implementation : 8 weeks

Bug fixing : 1week 8 hrs

Final report, Presentation & Project submission : 8hrs

### **3.1.2 Benefits**

This application will present a relationship graph consisting of all global variables and user defined functions. Moreover, this can help you understand the efficiency of the code, find the bugs, function cycles, lifetime of variables.

### **3.2 Project Resources**

Laptop, Desktop [www.oracle.com](http://www.oracle.com), [www.github.com](http://www.github.com), [www.stackoverflow.com](http://www.stackoverflow.com),  
[www.google.com](http://www.google.com)

### **3.3 Funding and Staff Requirements**

There is no funding required for this project.

There are three group members required in this project. Three members are-

Feroz Ahmmed 0618

Nazmul Haque 0635

Ruhul Amin 0616

### **3.4 Other Funding and Requirements**

Help from our honored teachers and staffs of IIT are also needed to fulfill the project.

### **4. Summary**

Structured programming is very hard to manage when the challenges become larger and larger. It's a big problem to find an error in a large C code. Moreover, understanding the approach for a solution a problem is not easy in structured programming. We wish, if we had a machine could made our task easy !

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