**SPL-1 Project Proposal Form, 2023**
**Institute of Information Technology (IIT)**
**University of Dhaka**

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**DeriveSmart – Intelligent Derivative Calculator**

**Project Description:**
The DeriveSmart project is a sophisticated and user-friendly software tool designed to assist users in calculating derivatives efficiently and accurately. This intelligent derivative calculator aims to simplify the process of finding derivatives of various mathematical functions. Here differentiation is a process of finding a function that outputs the rate of change of one variable with respect to another variable. For many complex calculations and formulas, most learners give up easily. To make it with an accurate and easier solution. I am giving effort on the project of a differentiation calculator. My project receives equations as input which are described in the scope section. Firstly, I tokenize the input and then based on tokenization result used string matching algorithm and then parsed the string. And finally the program prints the outputs step by step derivative equations and shows the graphical representation of the given input and derivative . So, my project is about indefinite differentiation calculation.

**Scope:**
- **Algebric Functions**
- **Trigonometry functions**
- **ln functions(logarithm)**
- **Exponential functions**
- **Composite function**

**Languages or Tools to be used: C/C++,Github**

**Supervisor's Name:** Dr. Mohammed Shafiul Alam Khan

**Signature of the supervisor:** _____ **Date:**_____

**Before the Midterm Presentation:**

I confirm that the progress is satisfactory and I am forwarding it for midterm presentation.

**Signature of the supervisor:**_____

**Date:**_____

**Midterm Presentation Feedback:**