

# Project Report

Our team aims to create 15 functions for the calculator as mentioned below:

1. Logarithmic functions, using both base 10 and base e
2. Trigonometric functions: sin, cos, tan and inverse trigonometric functions.
3. Exponential functions,  $n^{\text{th}}$  Root and  $n^{\text{th}}$  Power
4. Permutations and Combinations
4. Quick access to constants such as pi and e
5. Area calculations
6. Calculus- Integrator and differentiator  
Differential equations
7. Hexadecimal, Binary, and Octal conversions.
8. Basic Boolean algebra
9. Complex numbers
10. Statistics and probability calculations
11. Equation solving: linear n variables polynomial – quadratic and cubic
12. Physical constants
13. Matrices computations-addition, subtraction, multiplication, inverse
14. Determinants
15. Unit conversion

The work of algorithm and coding in project has been divided among the team members

**Harit:** Trigonometric functions, Algebraic functions, Area Calculations, Physical Constants, Logarithmic functions, using both base 10 and base e .

**Amritesh:** Permutation and Combinations, Unit Conversions, Exponential functions,  $n^{\text{th}}$  Root and  $n^{\text{th}}$  Power

**Pankaj:** Matrices, Determinants, Integration and Differentiation, Differential Equation, Quadratic Equation, Complex Numbers.

**Siddharth:** Infix to Postfix, Postfix to Evaluation, Statistics and probability calculations , Boolean Algebra and Documentation work.

## Work done till Stage 1 as on 19<sup>th</sup> October, 2014:

- SRS has been prepared.
- Algorithms and code for most of the bigger functions have been prepared like
  - Infix to Postfix
  - Postfix to evaluation
  - Matrices computations-addition, subtraction, multiplication, inverse
  - Calculus- Integrator and differentiator  
Differential equations
  - Quadratic Equations
  - Determinants

Use of Classes and object oriented programming format has been decided for the overall connection of all the functions in the final program

The work on coding of all the functions will be completed as soon as possible so that we will hopefully get enough time to work on the Graphics using Qt and most importantly to assess our **Software Quality** in the right manner.