

## ACKNOWLEDGEMENT:

We created this project (Scientific Calculator) with our hard work and dedication. We would like to thank our professors Deepak Phatak and Supratik Chakrabarthy for giving us wonderful chance to create project. We would like to thank our hardworking TAs and also other members involved.

Simple.Cpp and other graphics related option was of great use which was uploaded on CS101 course homepage.

We would also like to thank Professor Abhiram G Ranade for his wonderful video lecture on graphics part.

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# **PROJECT REPORT**

**TEAM MEMBERS-** ABHISHEK EKKA (TEAM LEADER)

- GANGAM VAMSI CHANDRA

- SHUBHAM KUMAR

- RAHUL GOPE

**TOPIC-**SCIENTIFIC CALCULATOR

This project deals with a scientific calculator which is well equipped with operators and functions which can correctly calculate values of any numeric application.

## further development:

we added functions like roundingoff  
greatest integer function , error  
function, gamma function , solving of 2  
& 3variable linear equations

and many

even after this we can many more  
functions ,

we can bring many more functions to  
our window

but as of now we have given sufficient  
functions as per time permitted

## functions:

we have the normal functions like  
arithmetic, trigonometric, inverse  
trigonometric, hyperbolic, exponential,  
logarithmic, algebraic, etc

we have even added the functions  
specified above

some statistical functions are also  
added,

### BASIC OPERATORS-

- 1) '+'
- 2) '-'
- 3) '\*'
- 4) '/'
- 5) sin
- 6) cos
- 7) tan
- 8) inverse sin

- 9) inverse cos
- 10) inverse tan
- 11) inverse cot
- 12) inverse cosec
- 13) inverse sec
- 14) hyperbolic sin
- 15) hyperbolic cos
- 16) hyperbolic tan
- 17) square function
- 18) cube function
- 19) square root function
- 20) cube root function
- 21) power function
- 22) log to the base 10
- 23) exponent function
- 24) log to the base e.

## **BRIEF REPORT-**

In our calculator, we have used two variables input and output; input is like, if mouse clicks on particular range of co-ordinates then the part which is there on that part of windows will be taken as input, for every button on our windows, there is some integer, so we have taken input as that integer and we have used switch operator for the further operation

Our calculator window consists of only operators like arithmetic operators, trigonometric etc and a Numpad also for input of data.

Numerical inputs will be given from mouse. It consists two types of arrays, one array is for numerical input , other array for operators, if first input is from mouse such that there may be one or more than one inputs continuously then whatever number given till user clicks any operator on our window that number will become first element in our number array, and the operator which user clicked will become first element in our operator array. So if until now user had given one numerical input and one operator, so it continues like that and when user clicks "=" operator on the window compilations takes place so as mentioned above our operators on the window have some inputs in numerical form and we will be using it for further operations

some corresponding characters as '+'='aa' '-'='ab', '\*'='ac' '/'='ad',//in this program I have taken character input in the form of characters

## team contribution:

**ABHISHEK EKKKA:** overall co-ordinator

helped in almost every part

contributed check function,

evaluate function,

update2 array

code for converting c&d arrays to A,B  
arrays

merging all the functions

even in canvas part,

written code for taking the inputs  
through mouse

by specifying the respective co-ordinates  
on our simple cpp window

**VAMSHI CHANDRA:**

contributed evaluate 2 function

update1 array

code for all the mathematical functions  
specified above, using cmath

included functions like permutations, combinations, modulo, gamma function and other routine mathematical functions

ekka and vamshi changed the minute parts for atleast 20 times

while verifying the code written for evaluation

and also in completing documentation for both stage 1 & stage 2

**SHUBHAM KUMAR:**

contributed on the entire graphics part  
creating window using simple cpp



also used graphics.h, for completing the text part

worked for display part

wrote functions on the terminal window for solving linear equations

statistical part and also vector part

and also helped in documentation

**RAHUL GOPE:**

code for hyperbolic part,

inverse trigonometric functions

took major part in completing documentation

**stage 1:**

**Abhishek ekka:**Documentation and

sample coding and invoking ideas on programming.

**Vamshi Gangam** :Documentation,sample coding and writing function.

**Shubham kumar**:graphics part and sample coding

**Rahul Gope**:Documentation

### **WORKING HOURS:**

1.Abhishek Ekka-35 hrs.

2.Vamshi Gangam-35hrs.

3.Shubham kumar-33 hrs.

4.Rahul gope-22 hrs.

