PROJECT REPORT

Project Name: Calculator

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  - Sololearn certification in ‘C’ language
  - Cisco NDG linux
  - Screenshot of firstdayongithub learning
  - Screenshot of hackerearth points

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- how to run that feature
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- References

Description:

Simple Calculator

Introduction: Simple Calculator helps users to calculate simple calculations with great speed and accessibility.

- Simple calculator is a project to allow users to calculate basic four operations in mathematics, they are addition, subtraction, multiplication, division.
- But in this Project also included three additional operations such as square, square root, cube of given number. However, the input has to be in the form "number1 operator1 number2 "(i.e., 2+4). •
- The input includes the command such as we can give numbers based on the operation for example for addition, we give 1 as a command and that particular operation works. Moreover, this calculator is smart enough to operate multiplication/division/subtraction.

Requirements :

High Level Requirements:

ID	Description	Category	Status
HR01	User shall be able to specify their operation choice.	Technical	IMPLEMENTED
HR02	User should able to select the operation.	Technical	IMPLEMENTED
HR03	User shall be able to add the numbers	Technical	IMPLEMENTED
HR04	User shall be able to subtract the numbers	Technical	IMPLEMENTED
HR05	User shall be able to multiply the number	Technical	IMPLEMENTED
HR06	User shall be able to find division	Technical	IMPLEMENTED
HR06	User shall be able square , square root and cube.	Technical	IMPLEMENTED

Low Level Requirements

ID	Description	Category	status
LR01	If the calculations is impossible the calculator has to display information helping the user to resolve the erroneous situation.	Technical	IMPLEMENTED
LRO2	On encountering a division by 0 the display should read "Cannot divide by 0" and typing the key “C” should reset the calculator		
LR03	On calculating the square root value of a negative operand, the display should read "Wrong operand"	Technical	IMPLEMENTED

SWOT: **STRENGTHS**: The ultimate strength of Calculators is its innovative, user-friendly and long lasting etc.

• **WEAKNESSES**: Do not include all the operations rather have only addition, subtraction multiplication, division, square, square root and cube.

• **OPPORTUNITIES**: This is very good calculator for beginner

• **THREATS:** The slower growth in technological innovation will also bring a significant threat in the upcoming dynamic world.

5W's and 1H's

Who

- Students who want to solve mathematics related problems for their academic work.
- People working on machine learning , data science applications which majorly involve calculations Software engineer.
- Researchers and mathematicians.

What

- Calculate the sum, difference, multiplication, division , square, square root and cube of given number

When

- Students facing a difficulty in solving a matrix related problem, can use this program to conform their outputs.
- Researchers can use it for getting a quick calculation output.
- Comes to a great use when calculating for matrices of huge order.

Why?

- For beginners even basic calculations are tough. To make sure that they feel better and to give them the confidence in arithmetic operations I have made this

Where:

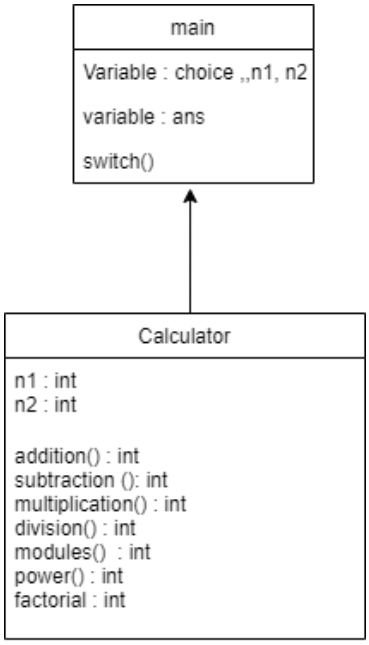
- Students, employees and researchers all over the world.

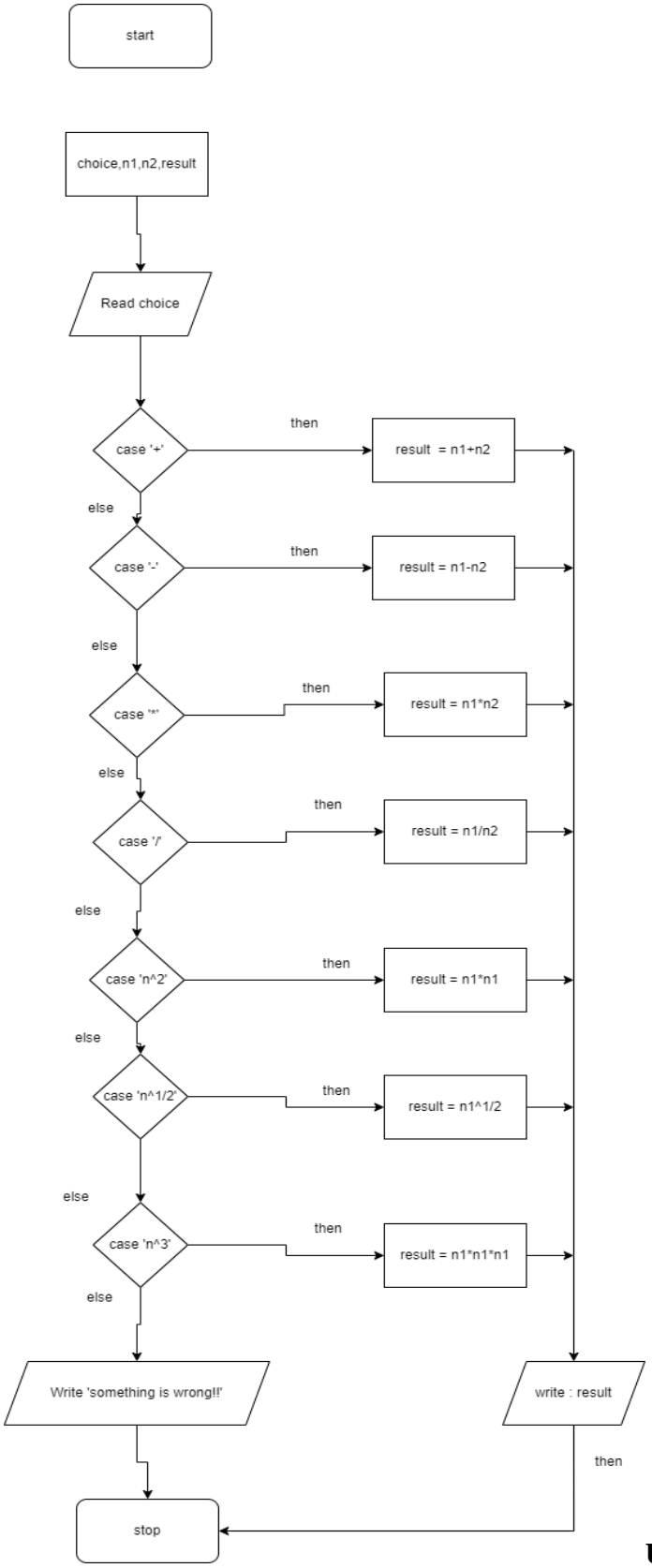
How:

- This program can be executed in a system which has Linux or Windows operating system.

Architecture

Design:




start
choice,n1,n2,result
Read choice
case '+'
then
result = n1+n2
else
case '-'
then
result = n1-n2
else
case '*'
then
result = n1*n2
else
case '/'
then
result = n1/n2
else
case 'n^2'
then
result = n1*n1
else
case 'n^1/2'
then
result = n1^1/2
else
case 'n^3'
then
result = n1*n1*n1
else
Write 'something is wrong!!'
write : result
then
stop

UML DIAGRAM

Test plan & output:

High Level test Plan

Test ID	Description	Exp I/P	Exp O/P	Actual Output	Type of Test
H01	Check if the code is working as expected, by considering the test cases	Valid input	Correct output	Correct output	Manual testing
H02	Check if the system handles boundary conditions	Invalid input	Termination	Terminated	Manual testing
HO3	Check for the flow control jumping	For valid input	Jumping correctly	Jumping correct	Manual testing
H04	Check for the flow control jumping	For invalid	Terminating	Terminate	Manual testing

Low Level test Plan

Test ID	Function	Exp I/P	Exp O/P	Actual Output	Type of Test
L_01	addition	Int value	Int output	Int output	Unit test
L_02	addition	Float value	Termination	Termination	Unit test
L_03	subtraction	Int value	Int output	Int output	Unit test
L_04	subtraction	Float value	Termination	Termination	Unit test
L_05	multiplication	Int value	Int output	Int output	Unit test
L_06	multiplication	Float value	Termination	Termination	Unit test
L_07	division	Int value	Int output	Int output	Unit test
L_08	division	Float value	Termination	Termination	Unit test
L_09	power	Int value	Int output	Int output	Unit test
L_10	power	Float value	Termination	Termination	Unit test
L_11	modules	Int value	Int output	Int output	Unit test
L_12	modulus	Float value	Termination	Termination	Unit test
L_13	factorial	Int value	Int output	Int output	Unit test
L_14	factorial	Float value	Termination	Termination	Unit test

Features

- This calculator can be used to do simple math calculation in very fast and efficient way.
- Beginner Friendly

Future scope of the project

- Trigonometric calculations can be added.
- We can make this calculator for octa decimal, hexadecimal logic and many more...

References:

https://www.programiz.com/c-programming/examples/calculator-switch-case