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GENESIS - SDLC & Mini-project Report

ABACUS\_Calculator



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**Introduction:**

A calculator is a device which allows people to do math operations more easily and quickly. For example, most calculators will do operations like add, subtract, multiply, and divide. Some also do square roots, and some of the calculators can help with complex functions like calculus and draw function graphs. Calculators are found everywhere. A smartphone or other computer can also act as a calculator.

Some calculators, like the abacus, will work without batteries. Others, like the electronic calculator, require batteries. There are two types of electronic calculators: simple calculators, which can only add, subtract, multiply while scientific calculators can do complicated operations like calculus.

**2. Research:**

**2.1 Aging:**

**2.1.1 Power calculator:**

A pocket calculator is a small calculator that helps people do arithmetic. It is so small that it can be put in a pocket. It’s most common use is for addition, subtraction, multiplication, and division. Many pocket calculators are powered by solar cells. They are commonly seen in schools and businesses around the world and can be used quickly and efficiently for simple mathematical problems. Other names are 'miniature calculator' or 'mini calculator'.

**2.1.2 Scientific calculator:**

A scientific calculator can do more things. It can often use exponents (or powers or indices), pi, trigonometric ratios, and the order of operations. Scientific calculators can also use bigger numbers. They tend to cost more than pocket calculators. Many are also programmable. The user can make a program directly with the calculator, or transfer one from a computer.

**2.1.3 Graphing calculator:**

A graphing calculator is a calculator that is specially made to draw graphs. Also, graphing calculators can do many advanced tasks, such as solving equations with one or more variables. Graphing calculators are usually bigger and more expensive than a basic calculator, but it can do more. Another feature of most graphing calculators is programmability. This lets anyone to program the calculator to do whatever he or she wants.

**2.2 Costing:**

Table 1: costing of different versions of calculator

|  |  |
| --- | --- |
| **Version of Scientific calculator** | **Costing** |
| Casio MJ-120GST 12 Digits GST Calculator | Rs 397 |
| Casio Mini Portable Printing Calculator, HR-8RC-BK | Rs 1,312 |
| Casio DJ-240 14 Digits Calculator | Rs 712 |
| Casio DR-120R-BK 12 Digits Printing Calculator | Rs 3,182 |
| Casio FX-9860-GII 12 Digits Scientific Graphic Calculator | Rs 5,504 |

**3. 4W1H:**

**What is Calculator?**

A calculator is a device which allows people to do math operations more easily and quickly.

**Why the calculator?**

Calculator is used because it can make arithmetic and complex calculations very quick and accurately.

**When a calculator is used?**

A calculator is used to perform complex operations that are hard for a human or operations which takes time to be computed.

**Where is calculator used?**

A calculator is used in our daily life and they are also incorporated in smartphones and computer for our daily use**.**

**How the calculator used??**

A calculator operates by taking operands and performing arithmetic operations on them it also does conversations of time and numbers.

**4. My Project:**

**4.1 High level Requirements:**

1. Clear screen

2. Vivid display

3. Fast response

4. Easy user interface

**4.2 Low level Requirements:**

1. Operating system – Windows 7 or above

2. Visual studio code

3. Support of GitHub

4. Support of google support.

**5. SWOT Analysis**

**Strengths:**

* Can compute arithmetic operations.
* Quick response
* Accurate response

**Weakness:**

* Can be attacked by a software glitch.
* Needs the help of internet.

**Opportunities:**

* It can be accessed freely on the computer or phone for free.

**Threats:**

* Can be affected by a virus or malware.

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| **6. High level Design and low level design:**  **6.1 high level Structural diagram:**      Figure 1:high level Structural diagram:  **6.2 High level Behavioral diagram:**    Figure 2:high level Behavioral diagram  **6.3 low level behavioral diagram**      **6.4 low level structural design**  **C:\Users\training\Desktop\documents\LL_structural.png**    **7. Test plan:**  Table 2: high level test plan    **8.Git link**  <https://github.com/99003152/calculator_miniproject.git>  **9. Images**  **9.1 Git Dashboard**    **9.2 Our Contributions**    **9.3 Unit Testing:**        **9.4 Git Workflows:**      **10. References**   * <https://simple.wikipedia.org/wiki/Calculator> * <https://www.moglix.com/brands/casio/office-supplies/office-basics/calculators/214181400> |
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