User Story

1. The Calculator should contain 10 elements consisting of arithmetic numbers from 0-9 identified as 1,2,3,4,5,6,7,8,9,0
2. The Calculator should contain a clickable Clear button .
3. The Calculator should be able to do precision with rounding upto three decimal places .
4. The Calculator should contain a clickable Backspace button .
5. The calculator should have clickable button “Universal Parabolic Constant” which computes the value of the constant.
6. The calculator should have calculate button which computes the expression entered by the user.
7. The calculator should be able to perform mathematical operations (addition, subtraction, multiplication, division)
8. User should be able to perform calculation with the usage of parabolic constant to calculate the thermal energy received by the solar cooker.

|  |  |
| --- | --- |
| Identifier | US1 |
| US Statement | The Calculator should contain 10 elements consisting of arithmetic numbers from 0-9 identified as 1,2,3,4,5,6,7,8,9,0 |
| Constraints | There are no negative numbers on the view for the usage. |
| Acceptance Criteria | The user should be able to view the numbers from 0-9 in the calculator.  On click of number, the user is able to view the clicked number on the display. |
| Priority | Medium |
| Estimate | 2 |

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| --- | --- |
| Identifier | US2 |
| US Statement | The Calculator should contain a clickable clear button. |
| Constraints | No constraints |
| Acceptance Criteria | On Click of clear button, all the text displayed on the calculator will be cleared. |
| Priority | Low |
| Estimate | 1 |

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| --- | --- |
| Identifier | US3 |
| US Statement | The Calculator should be able to do precision with rounding up to three decimal places |
| Constraints | Calculator will not display the result rounded to more than 3 decimal points. |
| Acceptance Criteria | The calculator should display the result of the calculation rounded upto the three decimal places. |
| Priority | Medium |
| Estimate | 2 |

|  |  |
| --- | --- |
| Identifier | US4 |
| US Statement | The Calculator should contain a clickable Backspace button . |
| Constraints | No constraints |
| Acceptance Criteria | On click of backspace button, the last digit entered by the user which is displayed on the display screen will be omitted. |
| Priority | Medium |
| Estimate | 2 |

|  |  |
| --- | --- |
| Identifier | US5 |
| US Statement | The calculator should have clickable button “Universal Parabolic Constant” which computes the value of the constant |
| Constraints | No Constraints |
| Acceptance Criteria | On Click of clear Universal Parabolic Constant button, the calculator should calculate the value of constant and display its value as 2.295 |
| Priority | Medium |
| Estimate | 2 |

|  |  |
| --- | --- |
| Identifier | US6 |
| US Statement | The calculator should have calculate button which computes the expression entered by the user |
| Constraints | Only certain mathematical operations are performed(addition, subtraction, multiplication, division) by the calculator. |
| Acceptance Criteria | The user should be able to view the result of the expression entered. |
| Priority | High |
| Estimate | 3 |

|  |  |
| --- | --- |
| Identifier | US7 |
| US Statement | The calculator should be able to perform mathematical operations (addition, subtraction, multiplication, division) |
| Constraints | Higher level mathematical operations like differentiation, integration, exponential functions are not performed. |
| Acceptance Criteria | The user should be able to view the result of the operations entered by the user. |
| Priority | High |
| Estimate | 3 |

|  |  |
| --- | --- |
| Identifier | US8 |
| US Statement | User should be able to perform calculation with the usage of parabolic constant to calculate the thermal energy received by the solar cooker |
| Constraints | No Constraints |
| Acceptance Criteria | User should be able to calculate the energy consumption by the solar cooker. |
| Priority | Critical |
| Estimate | 5 |

**A close up of a map

Description automatically generated**

Fig1 Use Case Diagram

UC1 – Power On

UC2 – Select Operand

UC3 – Select Operator

UC4 – Select Clear

UC5 – Select Backspace

UC6 – Select Calculate

UC7 – Display

UC8 – Execute Expression

UC9 – Store Data

UC10 – Universal Parabolic Constant

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| --- | --- | --- | --- |
| User Story | Use Case Number | Persona | Interview |
| US1 | UC2 |  |  |
| US2 | UC4, UC7 |  |  |
| US3 | UC7 |  | \* |
| US4 | UC5, UC7 |  |  |
| US5 | UC7 | \* |  |
| US6 | UC8, UC9, |  |  |
| US7 | UC3, UC8, UC9 |  |  |
| US8 | UC8 |  | \* |