Activity 3: calculator and tools(software)

High Level Requirement: -

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| --- | --- |
| **ID** | **Description** |
| HL\_01 | Input and Output will be displayed on screen |
| HL\_02 | Should do calculator operation |
| HL\_03 | Memory Unit for storage |
| HL\_04 | Should do basic gates operation |
| HL\_05 | Should give adder sum results |
| HL\_06 | Should give difference of subtracter |

Low Level Requirement: -

|  |  |
| --- | --- |
| **ID** | **Description** |
| LL\_01 | displays input numbers, commands and results in the screen |
| LL\_02 | No divide by zero error |
| LL\_03 | Should take all inputs |
| LL\_04 | Should not crash for any inputs |

**Test Plan: -**

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| --- | --- | --- | --- | --- | --- |
| **ID** | **Description** | **Pre-Condition** | **Expected**  **Input** | **Expected Output** | **Actual**  **Output** |
| 1. calculator | Fetch the initial user input for operand | The maximum number of digits for one operand should be 3 | Integer Values | The operand will be input to the system | Ask for the operands to be  updated |
| 1. andgate | Fetch the user input for operation | The operation is assigned based on the case assignment | Respective case for operand | The function of and operation | And operation output and with all type of parameter |
| 1. Orgate | Or gate operation | Zero | Operand1=some bit  Operand2=some bit | Or operations | Orgate output with all type of parameter |
| 1. Nandgate | Nand gate operation | Cleared condition | Operand1=some bit  Operand2=some bit | nand operations | nand output with all type of parameter |
| 1. Norgate | Nor gate operation | Cleared condition | Operand1=some bit  Operand2=some bit | Nor operations | nor output with all type of parameter |
| 1. Full adder | Full adder operation | Clear condition | 3 bit input | Full adder sum | Full adder sum |
| 1. Divide by 0 error | Divide by 0 | Division operation | Operand1=some number  Operand2=0 | Program crashes | Returns 0 |
| 1. Full subtracter | Full adder operation | Clear condition | 3 bit input | Full subtractor difference | difference |

Design:







