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Introduction

1.1. Purpose

This document will describe the functionality and constraints of the calculator program that will be provided to students of the school division

1.2. Intended Audience

This document is intended for administrators of the school division, teachers, and parents of the students who will use the program

Overall Description

2.1. Product Perspective

Elementary students will use this calculation program to test their knowledge of simple math equations by allowing them to guess the result rather than just giving them the answer.

2.2. Product Functions

The calculator will allow user input and 4 math functions

2.3. Operating Environment

The application must be able to run on Windows

2.4. Design and Implementation Constraints

The program is to be used by young children so care in wording must be taken and all system messages must be reviewed by school division administration

2.5. Assumptions and Dependencies

Dependency on the .Net Framework

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External Interface Requirements

3.1. User Interfaces

The user interface will have 2 fields for entering numbers, one for selecting the operation, one field for entering an expected result, and one button to execute the calculation test to display if they had the correct answer.

3.2. Hardware Interfaces

None defined as yet

3.3. Software Interfaces

None defined as yet

3.4. Communication Protocols and Interfaces

None defined as yet

System Features

4.1. Addition

4.1.1. This will test the students' knowledge of addition facts

4.2. Subtraction

4.2.1. This will test the students' knowledge of subtraction facts

4.3. Multiplication

4.3.1. This will test the students' knowledge of multiplication facts

4.4. Division

4.4.1. This will test the students' knowledge of division facts

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Non-functional Requirements

5.1. Performance Requirements

Results of the calculation test should take less than 1 second

5.2. Safety Requirements

There should be no tracking or usage logging of any kind

5.3. Security Requirements

There should be no requirement to reduce any security level or request security access from a logged on windows user without administrative access.

5.4. Software Quality Attributes

Each feature should have automated tests ensuring that valid entry calculates properly and that invalid entry doesn't cause exceptions. Invalid entry should prompt for re-entry.