SOEN 6011

Software Processes

Problem 2 Express Requirements Function $sinh(x)$

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1 Function Express Requirements

This report aims to describe the $y = sinh(x)$ function requirements and assumptions for a calculator application according to the ISO/IEC/IEEE 29148 standards. This function is expressed by the formula: $sinh(x) = \frac{e^x - e^{-x}}{2}$ where e is constant value.

1.1 Functional Assumptions

- Assumption 1
  - ID: FUNA1
  - Version: 1.0
  - Type: functional
  - Owner: Jesus
  - PRIORITY: 1
  - Difficulty: Easy
  - DESC: Floating-point values are returned for floating-point arguments.
  - Rationale:when $x = 2.8$ $y = 8.19$
- Assumption 2
  - ID: FUNA2
  - Version: 1.0
  - Type: functional
  - Owner: Jesus
  - PRIORITY: 1
  - Difficulty: Easy
  - DESC: $y = sinh(x) = 0$ when x =0, this is due to the nature of the formula $sinh(x) = \frac{e^x - e^{-x}}{2} = \frac{1-1}{2} = 0$ exact for finite x.
  - Rationale:$x = 0$

- Assumption 3
  - ID: FUNA3
  - Version: 1.0
  - Type: functional
  - Owner: Jesus
  - PRIORITY: 1
  - Difficulty: Easy
  - DESC: Euler's Number (e) is an irrational number which is a constant that has an approximate value of 2.71828, this application defines this constant as 2.718
  - Rationale: $e = 2.718$
- Assumption 4
  - ID: FUNA4
  - Version: 1.0
  - Type: functional
  - Owner: Jesus
  - PRIORITY: 1
  - Difficulty: Easy
  - DESC: The sinh(x) curve is positive where e^x is large, and negative where e^{-x} is large.
  - Rationale: e^x and e^{-x}

1.2 Requirements

- Requirement 1
  - ID: FUNR1
  - Version: 1.0
  - Type: functional
  - Owner: Jesus
  - PRIORITY: 1
  - Difficulty: Easy
  - DESC: The arguments passed to the function sinh(x) shall be real numbers from $-\propto to+\propto$ and they can be expressed in radians.
  - Rationale:when $x = 2.2$, $y = 4.45$ where x expressed in radians.

2 Acknowledgments

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Bibliography

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