Concordia University

SOEN 6011 - Software Engineering Process

ETERNITY : FUNCTIONS
Function 6 : B(x,y)

Problem Solution 2

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https://github.com/JuhiCodes/SOEN-6011-Course-Project

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1 Functional Requirements

1.1 Assumptions

- A1: x, y are positive real numbers, i.e R^+

- A2: For $x, y \in Z^+$ the computation of Beta function becomes very easy.

- A3: In case of real values of x and y, the computation of the integral function is not necessary.

1.2 Requirements

- ID: FR1

  - Type: Functional Requirement
  - Version: 1.0
  - Difficulty: Easy
  - Priority: 1
  - Risk: High
  - Description: The function throws an error when it is encountered with an input that is out of the domain.
  - Rationale: Outputs for values that are out of domain range are not defined.

- ID: FR2

  - Type: Functional Requirement
  - Version: 1.0
  - Difficulty : Easy
  - Priority: 1
  - Risk: High
  - Description: The function requires exactly two input values in order to perform computations.
  - Rationale: x and y

- ID: FR3

    - Type: Functional Requirement
    - Version: 1.0
    - Difficulty : Easy
    - Priority: 2
    - Risk: High
    - Description: For valid input, the output is always a positive real number.
    - Rationale: Output is defined with in co domain range.

- ID: FR4

    - Type: Functional Requirement
    - Difficulty : Easy
    - Version: 1.0
    - Priority: 1
    - Risk: low
    - Description: For all the positive integer inputs to the function , it may not result in any error. Such cases can be handled by gamma function.
    - Rationale : $\{\ \forall x,y \in Z^+\ |B(x,y)=\frac{\Gamma x \Gamma y}{\Gamma(x+y)}\ \}$

- ID: FR5

    - Type: Functional Requirement
    - Difficulty : Easy
    - Version: 1.0
    - Priority: 3
    - Risk: Low
    - Description: Input to the function should be numeric values only.
    - Rationale: $x,y \in R^+$

- ID: FR6

- Type: Functional Requirement

- Difficulty : Easy

- Version: 1.0

- Priority: 3

- Risk: Low

- Description: Input values to the function can be similar as well as distinct.

- Rationale: $x = y$ or $x \neq y$

- ID: FR7

  - Type: Non- Functional Requirement

  - Version: 1.0

  - Priority: 3

  - Risk: Low

  - Description: The results of the function should be computed in a specified time frame.

  - Rationale: To increase performance of the system.