1. RQ2

1.1 Growth Function in Productivity Calculation

$$f = C/(1 + A * exp^{-2*B*count}) \quad (1)$$

$$offset = C/(1 + A) \quad (2)$$

$$productivity = ((f - offset)/(C - offset)) * 100 \quad (3)$$

Here, C = 100, A = 8, B = 0.02, and count = count of programming activities that happened in a particular segment.

1.2 Hypotheses for RQ2

In each of these hypotheses, x corresponds each of the five context switches namely component, file, namespace, project, and state.

- H_0: For context switch x, the difference between the mean amount of context switches made by programmers while being low productive and highly productive is less than or equal to zero.
- H_1: For context switch x, the difference between the mean frequency of context switches made by programmers while being low productive and highly productive, is less than or equal to zero.
- H_2: For context switch x, the difference between the mean amount of associated resources while remaining low and highly productive is less than or equal to zero.
- H_3: For context switch x, the difference between the mean amount of context switches made by programmers while being highly productive and low productive is less than or equal to zero.
- H_4: For context switch x, the difference between the mean frequency of context switches made by programmers while being highly productive and less productive, is less than or equal to zero.
- H_5: For context switch x, the difference between the mean amount of associated resources while remaining highly and less productive is less than or equal to zero.