**APrimeperstudentD:**

This java class computes the Area Under the Receiver Operating Characteristic Curve (AUC ROC), using the A-prime (A’ ) implementation. It can compute AUC ROC across students, and can compare two models to each other. A’ is the probability that, given data in two classes (e.g. correct, incorrect; gaming, non-gaming, etc., etc.), the model can distinguish which is which (Hanley & McNeil, 1982; Baker, Fogarty, & Hudson, 2005). This code computes A’ within each student, and then uses meta-analytic statistics (Stouffer’s Z) to integrate across students. This approach avoids violating non-independence assumptions, leading to a statistical calculation that is neither over-conservative or under-conservative.

This class expects two model names as the argument. For example, if one is comparing BruteForce and ContextualGS then one should run as below

> java APrimeperstudentD APrime\_testData.txt BruteForce ContextualGS

The input file for this class should be tab delimited and should be sorted on Student. More information on using A-Prime meta-analytically can be found in [1].

**SimpleAPrimeB:**

This java class computes the Area Under the Receiver Operating Characteristic Curve (AUC ROC), using the A-prime (A’ ) implementation. A’ is the probability that, given data in two classes (e.g. correct, incorrect; gaming, non-gaming, etc., etc.), the model can distinguish which is which (Hanley & McNeil, 1982; Baker, Fogarty, & Hudson, 2005). This code computes A’ for a single model.

This class expects one model name as the argument.

> java SimpleAPrimeB APrime\_testData.txt ContextualGS

The input file for this class should be tab delimited and should be sorted on Student. More information on using A-Prime meta-analytically can be found in [1].

This is research code, version 4.1 (modified 11/8/2020)  
This code is not cleaned up, and is not guaranteed in any fashion.   
Use at your own risk, and sanity check your results!

Reference:

1. Baker, R.S.J.d., Corbett, A.T., Aleven, V. (2008) More Accurate Student Modeling Through Contextual Estimation of Slip and Guess Probabilities in Bayesian Knowledge Tracing. Proceedings of the 9th International Conference on Intelligent Tutoring Systems, 406-415