Punnett Square Builder v2

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Legend
1: Generate a selection of Genes using a Decorator Pattern

2: Generate genetic offspring raw data for two reproducing partners.

3: Format raw data into presentable output.

BuildGeneSelectorGUI

- final DEFAULT_GENES : String[]
- final TEXTFIELD_MAX_WIDTH : int
- parentOneTextField : ArrayList<TextField>
- parentTwoTextField : ArrayList<TextField>

+ buildGeneSelector(numOfGenes : int) : GridPane
+ getParentOneTextField() : ArrayList<TextField>
+ getParentTwoTextField() : ArrayList<TextField>

BuildGeneResultsGUI

- data : ObservableList<String>

+ buildResults(results : TreeMap<String, Double>, totalSize : int) : ObservableList<String>
+ getData() : ObservableList<String>

View →

Driver (View / Controller)

- final DISPLAY_SIDE_COLUMN_WIDTH : double
- final CENTER_DISPLAY_RATIO : double
- final MODAL_DISPLAY_WIDTH : double
- final MODAL_DISPLAY_HEIGHT : double
- final MODAL_BUTTON_HEIGHT : double
- final FIRST_ELEMENT_POS : int
- final iNUM_OF_GENES_POSSIBLE : int[]
- final MAIN_INSETS : Insets
- primaryStage : Stage
- centerDisplay : ScrollPane
- sceneLayout : BorderPane
- buildGeneSelector : BuildGeneSelectorGUI
- buildGeneResults : BuildGeneResultsGUI

+ main(args : String[])
+ start(primaryStage : Stage)
- resetCenterDisplay()
- generateGeneResults()
- showAboutMeWindow()
- buildCSVFile()

Model

1

<<interface>>
GeneBuilder (Decorator Pattern)

+ build() : String
+ buildCombination() : ArrayList<String>

2

<<interface>>
OffspringBuildBehavior

+ buildResults () : ArrayList<String>

3

<<interface>>
OffspringFormatDataBehavior

+ buildData(offspring : ArrayList<String>) : TreeMap<String, Double>

BaseGene

- gene : String

+ BaseGene(gene : String)
+ build() : String
+ buildCombination() : ArrayList<String>

<<Abstract Class>> GeneWrapper

- gene : String
- internalGene : GeneBuilder

+ GeneWrapper (gene : String, internalGene : GeneBuilder)
+ abstract build() : String
+ abstract buildCombination() : ArrayList<String>

OffspringBuilder

- threshold: int
- parentOneCombination : ArrayList<String>
- parentTwoCombination : ArrayList<String>

+ OffspringBuilder(parentOneGenes : GeneBuilder, parentTwoGenes : GeneBuilder) : ArrayList<String>
+ OffspringBuilder(parentOneCombination : ArrayList<String>, parentTwoCombination : ArrayList<String>) : ArrayList<String>
+ buildResults() : ArrayList<String>
- compute() : ArrayList<String>
- buildSingleResult(parentOne : String[], parentTwo : String[]) : String

OffspringFormatter

- totalDataPoints : int

+ buildData(offspring : ArrayList<String>) : TreeMap<String, Double>
+ getTotalDataPoints() : int

Gene

+ Gene(gene : String, internalGene : GeneBuilder)
+ build() : String
+ buildCombination() : ArrayList<String>