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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: KakuroPuzzle – extends JFrame** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private Container cp | public KakuroPuzzle() – constructs window to run program | JFrame, EventHandler, GameBoard, GameLogic, Fonts, JLabel |
| **2** | private JMenuBar *menuBar* | public void buildMenu() – builds menubar |
| **3** | private JMenu *gameMenu* | private JPanel createStausBar() - initializes status bar panel where clues are displayed |
| **4** | private EventHandler *eh* | public static void main(String[ ] args) – runs program |
| **5** | private JPanel *statusBar* | public JPanel createTitleCard() – creates title of the game |
| **6** | private JLabel *statusLabel* |  |
| **7** | private Board *board* |  |
| **8** | private JFileChooser *fileChooser* |  |  |
| **9** | private JPanel *titleCard* |  |  |
| **10** | private JLabel *title* |  |  |
| **11** | private Fonts *aFont* |  |  |
| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: EventHandler implements ActionListener – inner class inside KakuroPuzzle** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** |  | public void actionPerformed(ActionEvent arg0) – handles user clicking in menu | KakuroPuzzle |
| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: Board – extends JPanel** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private int *row* | Board(int rows, int column, String inString, JLabel statusLabel) – constructs board | JPanel, KakuroPuzzle, EventHandler, MouseListener, Tile, GameLogic, JLabel |
| **2** | private int *column* | public void clearBoard( ) – clears all the enteries in the board |
| **3** | private Tile[ ][ ] *tiles* | public String toString( ) – creates a string representation of the board |
| **4** | private GameLogic *gameLogic* |  |  |
| **5** | private EventHandler *eh* |  |  |
| **6** | private JLabel *statusLabel* |  |  |
| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: EventHandler implements MouseListener– inner class inside Board** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** |  | public void mouseEntered(MouseEvent arg0) – shows a clue when a user hovers over an open cell | Board, GameLogic, OpenTile, JLabel |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: Tile - abstract** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | protected int *tileSize* | public abstract toString(); – SumTiles and OpenTiles must be able to create a string rep. of themsleves | Board, EventHandler, SumTile, OpenTile, GameLogic, KakuroPuzzle |
| **2** | protected int *rowInd* |  |
| **3** | protected int *colInd* |  |  |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: SumTile – extends Tile** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private int *verticalSum* | public SumTile(String rightSum, String leftSum, int rowIndex, int columnIndex) – constructs sum tile | Board, Tile |
| **2** | private int *horizontalSum* | public toString() – creates a string representation of itself |
| **3** | private JLabel *sumLabel* | public int getVertSum() – returns vertical sum |
| **4** | private Fonts *aFont* | public int getHorrizSum() – returns horizontal sum |  |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: OpenTile – extends Tile** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private JTextField *textField* | public OpenTile(String value, int rowIndex, int columnIndex ) – constructs open cell tile | Board, EventHandler, Tile, KeyListener, Fonts, JTextField, ArrayList |
| **2** | private int *tfSize* | public toString() – creates a string representation of itself |
| **3** | private Fonts *aFont* | public String getText() – gets the text stored in the tile |  |
| **4** | private KeyHandler *keyHandler* | public void clearText() - clears the text stored in the tile |  |
| **5** | private ArrayList<Integer> *validValues* | public void setValid(ArrayList<Integer> valid) – makes a copy of valid numbers |  |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: KeyHandler implements KeyListener– inner class inside OpenTile** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** |  | public void KeyReleased(KeyEvent arg0) – checks to see if the input is allowed and stores it if it is and clears it if its not | Board, JTextField OpenTile, KeyListener |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: GameLogic** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private SumGenerator *sumGenerator* | public GameLogic(Tile[ ][ ] board) – constructs itself | Board, SumGenerator, Tile, SumTile, OpenTile, ArrayList |
| **2** | private Tile[ ][ ] board | public int getHorizTarget(int rowInd, int colInd) – returns horizontal sum of an open tile |
| **3** |  | public int getVertTarget(int rowInd, int colInd) – returns vertical sum of an open tile |
| **4** |  | public int countRow(int rowInd, int colInd) – returns number of open spaces in a row of whatever open tile you’re in |
|  |  | public int countRow(int rowInd, int colInd) – returns number of open spaces in a column of whatever open tile you’re in |  |
|  |  | public ArrayList<Integer> calcTile(int rowInd, int colInd) – creates possible values based on vertical and horizontal sums |  |
|  |  | private ArrayList<Integer> getRowInput(int rowInd, int colInd) – keeps track of the user input of the tiles in a specific row |  |
|  |  | private ArrayList<Integer> getColumnInput(int rowInd, int colInd) - keeps track of the user input of the tiles in a specific column |  |
|  |  | private ArrayList<Integer> possibleVals(ArrayList<ArrayList<Integer>> partials, ArrayList<Integer> input) – generates the possible values for a sum that were not already entered by the user |  |
|  |  | private ArrayList<Integer> intersect(ArrayList<Integer> one, ArrayList<Integer> two) – generates all the values that are found in both array lists |  |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: SumGenerator** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private ArrayList<Integer> *range* | public SumGenerator( ) – constructs itself | ArrayList, GameLogic |
| **2** | ArrayList<Integer> *partial* | public <ArrayList<Integer>> genSums(int target, int groupLength) – generates all the possible sets of numbers that add up to the target based on the number of open spaces |
| **3** |  | private <ArrayList<Integer>> findNums(ArrayList<Integer> numbers, int target int groupLength, ArrayList<Integer> partial) – generates possible sets of numbers between 1 and 9 that could add up to a given target number based on the allowed number of operands |
| **4** |  | private void subset\_sum(ArrayList<Integer> numbers, int target, int groupLength, ArrayList <Integer> partial, ArrayList <ArrayList <Integer>> resultList) - builds partial sum for target value based on group length |
| **5** |  | private int sum(ArrayList <Integer> partial) - calculates the sum of an array list of integers |
| **6** |  | public ArrayList <Integer> coalesce(ArrayList <ArrayList <Integer>> listOfLists) – condenses all possible values for a sum into a 1-d array with no repeated values |

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| **Modified Component-Responsibility-Collaborator (CRC) CARD** | | | |
| **Your Name: Skylar Soehl and Matthew Ritchie** | | | |
| **Component Name: Fonts** | | | |
|  | **List properties (Instance Variables)** | **List responsibilities (Methods)** | **Collaborators (what other** *components* **does this component interact with?)** |
| **1** | private static ArrayList<Fonts> *fontList* | public Fonts(String filePath) – constructs a custom font by setting the font path and registering the font | Board, SumTile, OpenTile, KakuroPuzzle |
| **2** | private static String *fontPath* | private void registerFont() - registers a custom font |
| **3** |  | private static void addFont(Fonts font) - adds a custom font to an ArrayList of Fonts |
| **4** |  | public static void loadFonts() – loads custom fonts |