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Requirements for Project 2

**FUNCTIONALITY**

1. **W**h**at will the system do?**
   1. The Program will being by opening a prompt with a drop down menu for grid selection, a drop down menu for difficulty selection, it will also have a start button.
      1. The first drop down menu will allow user to select different grid sizes ex; 3x4, 3x5, 4x4, 4x5, 4x6,4x7.
         1. Since this project requires only grids 3x4 all other actions will return display message to select different option.
      2. The second drop down menu will allow user to select difficulty to play on.
         1. Since this project requires only easy mode to be played. All other selections other than easy will return display message to select different option.
   2. The system will initialize a new pane system with a grid inserted on the center. Also in the center pain will contain 3 buttons. The pane system will also initialize a right hand pane with a two pane system one for north and one for south.
      1. The center pane will contain a grid system of 3x4. Where 3 will represent the topics and 4 will represent the pairs. One part of the grid will generate the 1x4 gird, which will have the String values of the topic and pairs. This grid portion will not be clickable. The second grid portion will be a 4x4 grid system that will be clickable.
         1. When you click on a clickable section it will display an x. when you press this button or section again it will display a O. With all columns and rows in this grid turning into an X. If you Press on an O in the same row or column it will be highlighted in red to let you know this is not an accurate solution.
      2. An undo button that will allow the user to undo the last action they did.
      3. A hint button that will tell them what to put at a certain spot. It will mark the spot on the grid by highlighting it. This button will also add 120 seconds to the time.
      4. Clear errors that will clear spots on the grid that do not match the solution. Does not check for X on the grid as this can give hints to the player.
      5. It will contain a VBox of labels the clues and hints the player can use to solve the puzzle. If the player uses a hint it will add 120 seconds to the timer.
      6. The south right pane will have text box that displays the backstory and goal of this game.
2. **When will it do it?**
   1. It will do everything instantly to not waste time.
3. **What kind of computation or data transmission will be performed?**
   1. The system will compare current grid position value to the actual answer.

**DATA**

1. **Input & output: form of data?**
   1. The user will input by clicking on the grid either true or false.
      1. The output will show a circle if true or and x if false on the grid based on the user input.
2. **Must any data be retained?**
   1. The answers must be retained and the user input on the grid.
3. **Can this system transfer to cloud or on the web?**
   1. No, this system will not transfer to the cloud or the web.

**USABILITY**

1. **How easy must it be for the user to understand and use the system?**
   1. The system will be straight forward and easy for the user to just read and see what to do next.
2. **Can the user easily misuse the system?**
   1. Yes, the user can misuse the system by getting hints to solve the problem. Getting all the answers with a bad time, then restarting the problem and solving it again.
3. **Can the user undo …………?**
   1. Yes, the user can undo the actions he already did, using a button.
4. **What happens when user ………..?**
   1. The user presses create it will create the new game board. The one with a center panel and the right panel.
   2. When user presses the undo but it, it will undo the last action the user input.
   3. When the user presses the clear button, they will clear all mistakes and leave all correct responses.
   4. When the user presses hint they will get a hint with where to press on map, this also adds 120seconds to the time.
   5. When the user presses the Start over it will reset the board and timer.
5. **Can the program support …………?**
   1. The program will support a system that allows future programmers to add new grids and difficulty settings.

**RELIABILITY AND AVAILABILITY**

1. **Must the system detect errors? Which kind?**
   1. Yes, the system must detect errors. The errors it will detect is if the user makes the wrong choice in the grid system.
2. **What should be saved and backed up?**
   1. The number of times the user has played the game. The time they have completed the game must be backed up and saved as well.

**PERFORMANCE**

1. **Constraints on execution speed, response time, or throughput?**
   1. The program will currently be constraint to only use one grid system with only one difficulty setting
2. **How much data will flow through the system?**
   1. The system will use many objects and 2d array lists, however this will not be a lot of data to process for today’s computer.
3. **How often will data be received and sent?**
   1. Data will be received every time pressing the check errors button.

**SUPPORTABILITY**

1. **When and in what ways might the system be changed in the future?**
   1. The system might change to support other grid sizes.
   2. The system might have more games and clues to play.
2. **How easy should it be to add features to the system?**
   1. The system should be easy to add new features.

**FURPS(PLUS)**

1. **Interface requirements:**
   1. The system will have a popup menu allowing user to select size of grid difficulty of puzzle and then a button to create the puzzle.
   2. The System will have a center panel and a right-hand panel.
      1. In the center panel it will contain another panel system that will use two types of grids systems to create the board of the game.
      2. Inside of the center panel it will contain four buttons
   3. On the right-hand side, it will contain a north and south panel
      1. The north panel will contain 3 buttons that switch displays
         1. The first display will be a none editable text box with a series of clues to solve the problem.
         2. The second display will have an input text box, so the user can type notes for himself.
         3. The third text box will contain an answers grid that will update when correctly inputting answers on the board.
2. **Does the system allow the user customize ……..?**
   1. The system will not allow the user to customize his display settings.