**Planning/Development Phase**

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**Risk Management**

**Risk:** Potential lack of time to complete a task

**Solution:** Ensure to always leave an extra day open just in case extra time is required (ex. takes an estimated 2 days to complete a task so mark down 3 days to complete it in the schedule -leaving the third day open just in case we need to extra time)

**Risk:** Errors in Code

**Solution:** Continue coding other things if you can’t solve it on the spot. Leave certain days for debugging the code in order to ensure that everything is working.

**Risk:** Person is busy with other tasks from other subjects so they are unable to do their assigned task within the timeline.

**Solution:** Always ensure that there is someone who can cover for that person and switch tasks with them. This will ensure that people will have the same amount of work, just the switching of what they do

**Detailed Scope**

Creation of a game of Connect 4, coded to be a GUI (Graphical User Interface). Code must be efficient, and must be fully functional. Required features includes: option for 2 Player or Player vs AI, AI of several difficulties, option for point limit for one side to win, 6 by 7 grid, game instructions, winning message, and various other important game options (stated in deliverables). We must also use project management to plan out everything that must be done in the various stages of projects (initiation, planning, executing, monitoring/controlling, and closing). Equal distribution of workload and tasks, with each task having a certain number of days to complete and always one extra day just in case it is needed.

**Finalized List of Deliverables**

The following is as to what is to be expected in our final code:

* must be in GUI format
* must be efficient and functional
* must be error free
* must be thoroughly commented for easy reader’s understanding
* properly formatted (indented properly)
* functioning variables
* various options for gameplay
* one player must be able to win
* display winning message

More specifically how our code should look:

**Home Screen**

* Have Buttons for instructions, player vs player mode, player vs ai mode
* AI level of difficulty (Easy, Medium, Hard)
* Option for point limit, if they choose to have a point limit then how many points (preset to 3 points)
* Option to exit the game (closes game window)

**Instructions Screen**

* Display instructions
* Back button to go back to home screen

**Game Screen**

* 6 by 7 grid
* Player’s scores at the bottom (if they choose to have a point limit)
* Display AI difficulty (if it Player vs AI)
* Give players an option to enter their name (otherwise its preset to Player 1 and Player 2)
* Chips of 2 colours (red and yellow)
* Players click buttons to place chips in column in which button is under (7 buttons)
* Winning message appears on screen
* Options to exit game (goes back to home screen)

**AI**

* Various levels of AI
* AI will determine best places to put its pieces
* Sometimes it will randomly place its pieces (depending on level of difficulty)

**Changing of Schedule**

In the event that we may have to change the schedule around due to some unexpected event. The following possible changes may happen:

* The switching of tasks between people
* Shifting of certain tasks forwards or backwards by 1 or 2 days
* Tasks losing or gaining the extra bumper day

