**PROJECT REPORT**

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**start( )**

to begin the game by displaying required text and grid and also to start the game by calling the function to generate the numbers.

**display( )**

the purpose of this function is to show on the screen the instructions and also the grid of the game.

**random value()**

every time we move in any direction a number either 2 or 4 needs to be generated randomly. so in this function we inserted this condition and also a logic for when and where to generate 2 and 4.

**end( )**

this function includes the conditions for ending the game either when one wins or loses.

This function lets the user know about the rules of the game and about the control keys they would be using during the game.

**Up, right, down, left ( )**

This function are for the movement of the digits within a grid. It will add the similar number when collide with each other in a move and will replace the two digit by the sum of them and a null value. Moreover if any two different digits collide so if the numbers are different and not null so nothing will happen else the digit will take place of null value if the null value is on that side of the grid which arrow key user pressed.

**Score ()**

In this function every time the new numbers are generate on the grid when an arrows is press by the user a sum of them is calculated and placed in sum global variable.

**Check ()**

For every time arrow key presses by user the nested for-loops are run. The first nested for-loop checks that any 2048 number is created or not if yes then then game then flag 0 is return. The second nested for-loop check that is the grid full or not. If yes then will return flag 1 and if no then return

flag 2. **Record ()**

This function use filing to record the data of the player when game end. The data will be recorded back into the file along with other players record also the data of that player will be display on the command screen.

**Move ()**

This function will be called every time when a key is pressed and call pressed key function. Also, will increment the count and will call random value, display and score function

**Initialization ()**

This function initializes all the values of the grid by

zero.

**Int main()**

* Declaration of game on and arrow. Calling of the functions: start, initialization, intro.
* While loop is ran until the user presses the digit 9.
* The game starts when any key is pressed by the user.
* The pressed key is assigned to the arrow and the arrow is sent to the move function, one the move function runs, the grid is checked by the check function and it’s return is assigned the game on. If the game on is 2 the game will be continued, and if the game\_on is zero or 1 it means that the user has lost or won.
* Once this happens another function end and record functions are ran and the loop breaks.
* The screen will get cleared and a statement of thankyou will be displayed on the command screen the the game/program will come to an end.