**CANDY CRUSH GAME**

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Board of Game:

We have taken two variables one as rows and second as columns which is user defined .

There is an 2Darray as candiesMatrix of rows and columns. There are two loops the outer loop is rows and the inner is columns.

They are generating random index values by srand built in function and we have added stdlib library for that.

SFML:

There is one window which appears first by running game and there is also music file attached to it.By pressing enter it moves to the next window of board.

There are 5 candies in our game known as Candy1.png, Candy2.png,Candy3.png, Candy4.png, Candy5.png. if these candies don’t load it will cout failed to load respective candy.

Adjusted the size of candy and then by the loop of candies matrix we have generated random values from 0to4 by taking mode of 5 of random function.

From 0to4 each texture of 5 candies is assigned to it. By using sfml ,we have made a rectangular box of boundary white covering the selected candy. We also have set the position of box according to the candy size.

EVENTS:

Firstly the user will select the desired candy by mouse and by that click we will Know the index of rows and columns .SelectedcandyY is no. of rows and SelectedcandyX is the no of columns.We have taken its position by dividing boths by 60 which is size of candies .

Then the user move the selected candies by such that

For upward move W KEY

For downward move S Key

For right move D key

For left move A key

CALLING OF FUNCTION:

All the functions called in main are being called in key pressed such as swap sprite ,swapcandy and check matches.

While loops:

There are two while loops first one is for making the board after every move .

Second one is for the event such mouse click and key pressed.

SCORE:

There is a variable of score which is being passed by reference in check matches and for 3 candies pattern the score is 5 for 4 candies it is 15 and for 5 candies it is 20.

Timer:

The timer is of 20 seconds for every move and after every move it reset to 20 again .

Move counter:

We have taken a variable as move counter and it is decrement by 1 for key pressed and we have given 15 moves.

FUNCTIONS:

SWAPSPRITE:

The swap sprite function takes the two candies texture which are being swaped and it swaps their sprite.

SWAPCANDY:

Swap candy function basically use the builtin swap function to swap the indexes of grid which are being swapped

CHECK MATRIX:

The check matrix function calls all the functions for checking pattern .

FIVEVER FUNCTION:

There are two main loops for checking the condition .i the rowindex will run till rows -4 so that it will not move out of box.

It checks the 5 candies in column vertically checkes the indexes of 5 candies if it is true it will add 20 score and generate all random candies in the column

FIVEHOR :

It checks the 5 candies in rows if it is ture it execute two loops such that all rows fall down and in first row random values are genertated.there are two main loops for checking the condition .J thee column index will run till column -4 so that it will not move out of box.

There is one nested loop the outer loop is running from rows to 0 and the inner loop of column is running from0 to column and it will update the upper row to downward.

The other loop is just generating randoms values at 0 rows.

FourHOR:

There are two loops for checking 4 candies horizontally matches ,that are running to columns-3 .this will add 15 score .

After checking there is nested loop for updating the value of four candies for upper row to fall downward. First loop is running from j to j+3 index from columns and in inner loop respected rows of respected column in moving downward .

The last loop is generating the 4 Radom values at j to j+3

Fourvert:

There are two loops for checking 4 candies vertically matches ,that are running to rows -3 .

In inner loop k is running from 0 to j and and update index in k+4 which means that candies are moved downward.

The last loop is generating the 4 Radom values at top four rows.

Vertical:

There are two loops for checking 3 candies vertically matches ,that are running to rows -2 .

In inner loop k is running from 0 to j and update index in k+3 which means that candies are moved downward.

The last loop is generating the 3 Radom values at top three rows.

HORIZONTAL:

There are two loops for checking 3candies horizontally matches ,that are running to columns-2 .this will add 5 score .

After checking there is nested loop for updating the value of four candies for upper row to fall downward. First loop is running from j to j+2 index from columns and in inner loop respected rows of respected column in moving downward .

The last loop is generating the 3 Radom values at j to j+2.

DIAGONAL:

Righttoleft:

There are 2 loops running to check the diagonal from left to right to rows -2 and columns-2.

I and j is equal to i+1 and j+1and I+2and j+2

There are three loops running that take the first row down then the second loop take the second row down and the third loop tales the row down .

Last loops generate the three random values at the top

LEFTTORIGHT:

The two loop running to rows-2 and columns.

Checking the condition of lefttoright diagonal and then three loops again

The last loop is generating the new random values.