CMPE230 Project 3

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Purpose

Our purpose in this project was creating a pair card game as described in project description. To briefly summarize our project, there will be 30 buttons as 5x6 grid. Player will select two cards and if these two cards are the same player's score will be increase by one. Also, player will have 50 tries to select pair of cards. There will be no time limit on player.

Design

We designed our project by using Color Game project that we saw in PS. We benefited a lot from this app. We changed Color Button object to Card Button Object and used My Grid object by adding extra functionalities. We added an extra file named mygamewindow and in this file we implemented base functionalities of the game.

Implementation

As I mentioned above, we have three source files and two header files. These are:

- mygrid.h
    - This class extends the QGridLayout. We keep the try count, label of the try count, new game button, and currently selected card in this class.
- cardbutton.h
    - In this class we keep the text of the button -which is an animal name in our project, a Boolean value named isFlipped and implemented a function which allow us to flip the card.
- mygrid.cpp
    - In this source file we initialize the try count to 50 and create label of the remaining tries and the button of the new game. Also, we set currently flipped card object to null pointer at the starting of the game.
- cardbutton.cpp
    - In this file we write a constructor for the CardButton class. When we call the constructor, it sets the text of the card, sets the isFlipped value to false and adjusts visual of the button. We also implemented the flip_card function. It basically adds functionality of the flipping two cards to match them.
- mygamewindow.cpp
    - Our main file is this file. We create MyGrid and Card button objects in this file. We choose 15 animal names and added each of them in a list twice. After that we traversed this list by using for loop and assign each of them to a button. We also add new game button, remaining tries label to mygrid object and add this object to a Box Layout.
    Implementation of score_changed function is in this file. We increase the score

when this function is called and check that if score is equal to 15. If it is equal to 15 we show a pop up. Which tells 'You Won'.

Another function is try_count_changed and in this function, we decrease the tryCount variable by one when it is called. In each call it also checks that if tryCount is equal to 0 or not. If it equal to 0 we show a pop up which says 'You Lost'.

The last function we implemented is check_card_match. In this function we compare the text content of the two clicked button. If they are same it calls score changed function and so score is increased by one. Also in both situation it calls try_count_changed function and decrease tryCount by one.
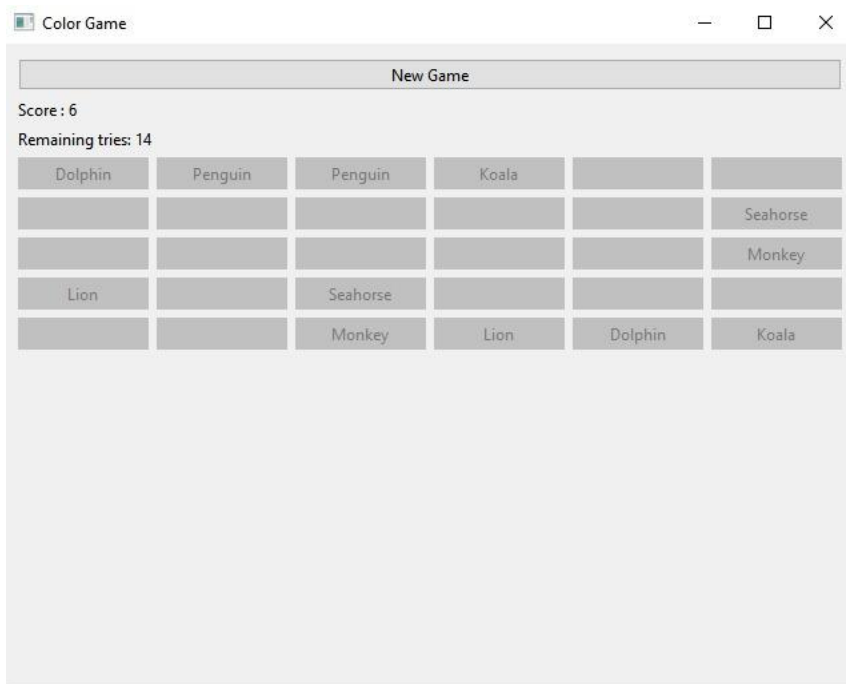
Challenges

C++ is not a language that I am familiar with and at first it was complicated. Also running the app in Qt Creator was very hard task. I think in Macs Qt becomes a headache or just I was incompetent.
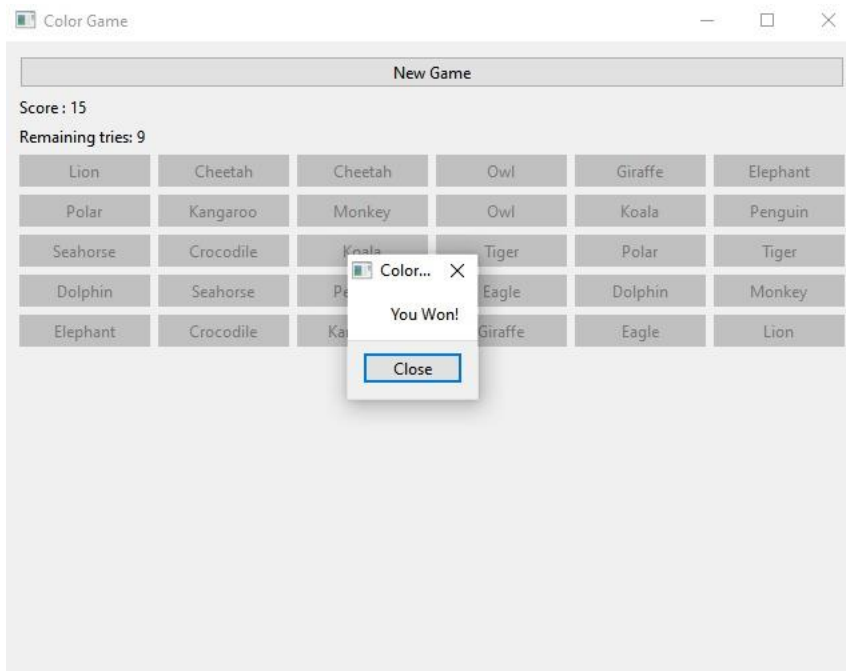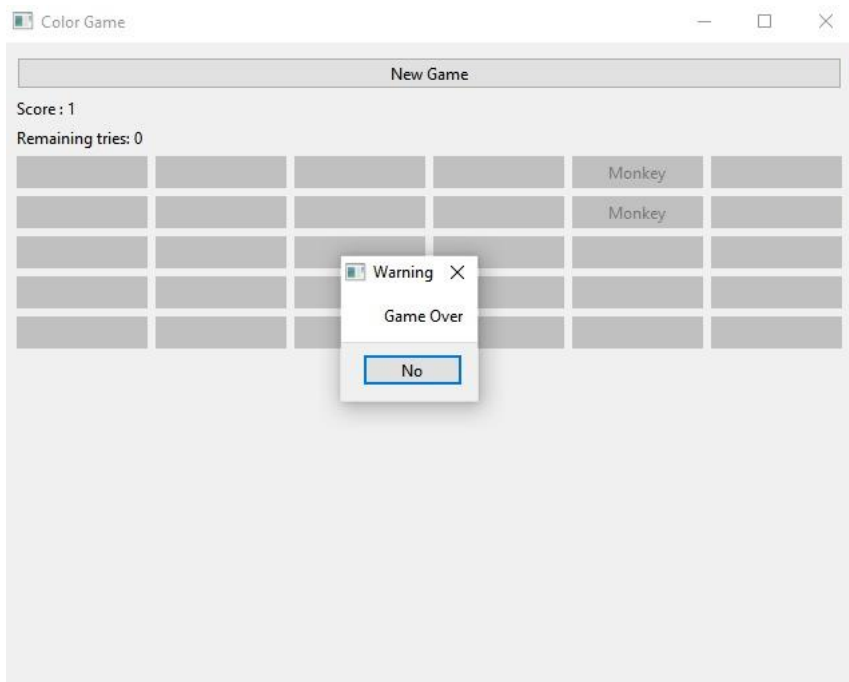
Screenshots
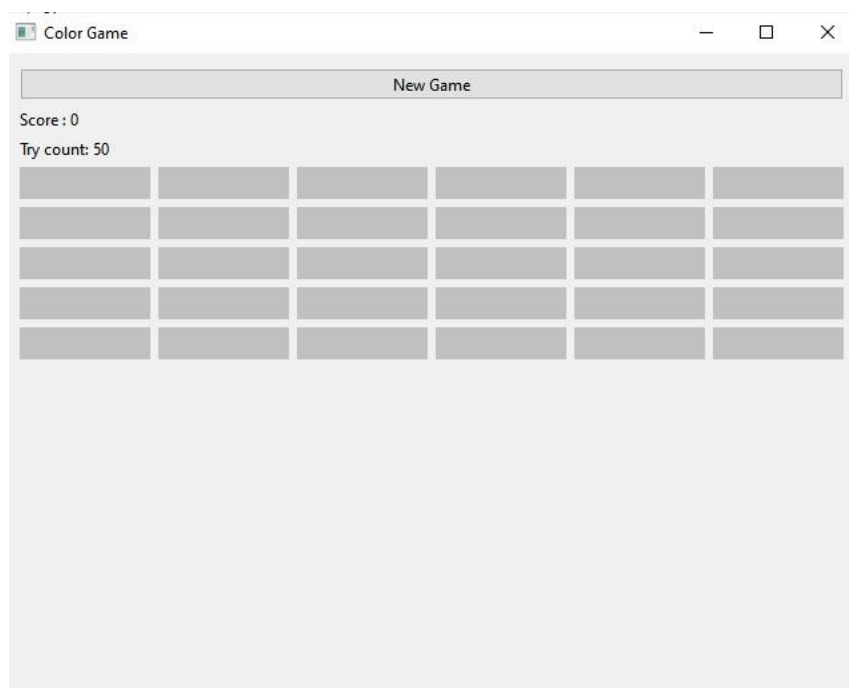
At the beginning of the game

Middle of a game

When the player won the game

When player lost the game