Memory Card game

This project is made using pygame module of python. It is a memory game of cards . All the similar pair of cards has to be matched in the minimum required time. It counts the number of flips and combinations done during the game.

Contribution of the members -:

1. Hardik Asher(1811002)- worked on topic selection, collection of data for the coding part and also helped in programming part.
2. Animesh Chaturvedi(1811009)-: worked on topic selection, collection of data for the coding part and also helped in programming part.
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Functionalities used in the program:-

* Modules -:

1. pygame -> This module provides all the pygame functionalities used for this program.
2. random -> This module is used to randomize the placement of the cards.
3. Timer -> This module is used to call a method/function after a specified number of milliseconds.

* Global variables -:

1. imgDict -> Dictionary which stores pair of card’s images and its key.
2. cardList -> List of object of class Card (Total 32 cards).
3. flips –> Store the total number of flips.
4. combinations –> Store the total number of combinations.
5. start\_time –> Record the start time of the game.
6. Time –> To store the total elapsed time.
7. gameStart -> Boolean value for indicate the state of game.
8. m\_x –> To store the x coordinate of the mouse.
9. m\_y –> To store the y coordinate of the mouse.
10. click –> To check which mouse button is pressed

* Classes -:

Card –> This is the card class. Every card is a object of this card class. Methods of this class are:

1. \_\_init\_\_(self,x,y,key) -> This is the constructor of this class. This initializes all the necessary variables.
2. display(self) -> This method is called to display the card on the screen.
3. canFlip(self) -> This method returns True if the card can be flipped.
4. flip(self) -> This method is called when the card is flipped and returns the key of the card flipped.

* Methods/Functions -:

1. matchLogic() -> This method is called to check if two flipped cards are matched. It returns True if matched or False if not matched.
2. button() -> This method is called to display the button functionality.
3. scoreBoard() -> This method is called to display the score board functionality which displays heading, caption, time, flips, combinations.
4. over() -> This method is called after the game finishes. This method displays the game over screen.
5. init() -> This method initializes all the global variables used in the program.
6. game\_loop() -> This method is called to run the main loop of the game. This contains the main logic of the game.