A mini project report submitted on

“ LUDO ”

For partial fulfilment of the requirement of the degree of

Bachelor of Technology

In Computer Science & Engineering

By

STUDENT NAME	PRN NO.
Mr. Nikam Kiran Gungaji	2021076081
Mr. Patil Aditya Vijay	2021075926
Mr. Patnekar Vivek Sandeep	2021076002
Mr. Patil Akhilesh Ajit	2021076008
Mr. Kumbhar Prathamesh Ramdas	2021075918

Under the guidance of

Prof. P.G. Sanmane

Academic Year 2022-23

Department of Computer Science & Engineering

Sant Gajanan Maharaj College of Engineering , Mahagaon

NAAC B++ Accredited & ISO 9001:2015 Certified Institute
SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING, MAHAGAON
Site- Chinchewadi, Tal – Gadhinglaj, Dist – Kolhapur 416502

CERTIFICATE

This is to certify that, following students have satisfactorily completed the mini project work entitled, **" LUDO ".** This mini project is being submitted for the partial fulfillment of the award of degree of **Bachelor of Technology** in **Computer Science and Engineering** under Shivaji University, Kolhapur, for year 2022-2023.

.

STUDENT NAME	PRN NO.	SIGNATURE
Mr. Nikam Kiran Gungaji	2021076081	
Mr. Patil Aditya Vijay	2021075926	
Mr. Patnekar Vivek Sandeep	2021076002	
Mr. Patil Akhilesh Ajit	2021076008	
Mr. Kumbhar Prathamesh Ramdas	2021075918	

Prof. P. G. Sanmane
Guide

Mr. S. G. Swami
Head of Department

Examiner

Dr. S. H. Sawant
Principal

ACKNOWLEDGEMENT

We would like to express our sincerely gratitude towards respected Hon. Founder Chairman Adv. Annasaheb D. Chavan, trustee & all Board of Directors, our beloved Principal Dr. S. H. Sawant for his encouragement & support.

We are very thankful to. Prof. S. G. Swami (Head of Computer Science & Engg. dept) & respected guide Prof. P. G. Sanmane for her constant encouragement and valuable guidance during the completion of this project & valuable co-operation & guidance during this project work & we also thank our mini project coordinator Prof. P. G. Sanmane.

We take this opportunity to thank the entire Teaching & Non-Teaching members of CSE dept. for their co-operation and their helpfulness during this project work. Last but not the least assistance offered by various friends and colleagues related directly or indirectly to this work are also gratefully acknowledged.

STUDENT NAME	PRN NO.
Mr. Nikam Kiran Gungaji	2021076081
Mr. Patil Aditya Vijay	2021075926
Mr. Patnekar Vivek Sandeep	2021076002
Mr. Patil Akhilesh Ajit	2021076008
Mr. Kumbhar Prathamesh Ramdas	2021075918

ABSTRACT

This is a simple GUI based strategy board game which is very easy to understand and use. All the playing rules are the same just like we play in real time ludo. This is a simple 2D multi player game. After starting the game, a GUI ludo board appears, other rules are the same. First, the player has to roll the dice. The main thing in this simple GUI based game is that the player just has to press " 1 " to roll the dice. At the top of the board, it displays a dice with the number. The player has to keep on rolling until there's a possible pawn to move. All the game movements are to be performed manually by the player. A simple 2D GUI is provided for easy game play. The game play design is so simple that user won't find it difficult to use and understand.

INDEX

PROBLEM STATEMENT

The problem at hand is to design and implement a digital version of the ludo game that meets the following requirement :

1. Game board
2. Game logic
3. User interface
4. Game progression

INTRODUCTION

In this project, the basic ludo that is present in the real world is computerized i.e., the program that is written in this project creates a board which is quite similar to that of the board that is seen everywhere. Special areas of the ludo board are typically coloured yellow, green, blue, red. Each player is given a color and possesses four tokens(coins) of one color in their game. The board is normally square with a cross-shaped game track, with each arm of the cross consisting of three columns with six squares per each column. The middle column consists of five colored squares which represent the player's respective home column. A sixth colored square which is not on the home column represents the player's starting square. At the centre of the board is a large finishing square often composed of triangles in the four colors atop the player's home column thus forming the arrows pointing to the finish.

SOFTWARE AND HARDWARE REQIREMENT

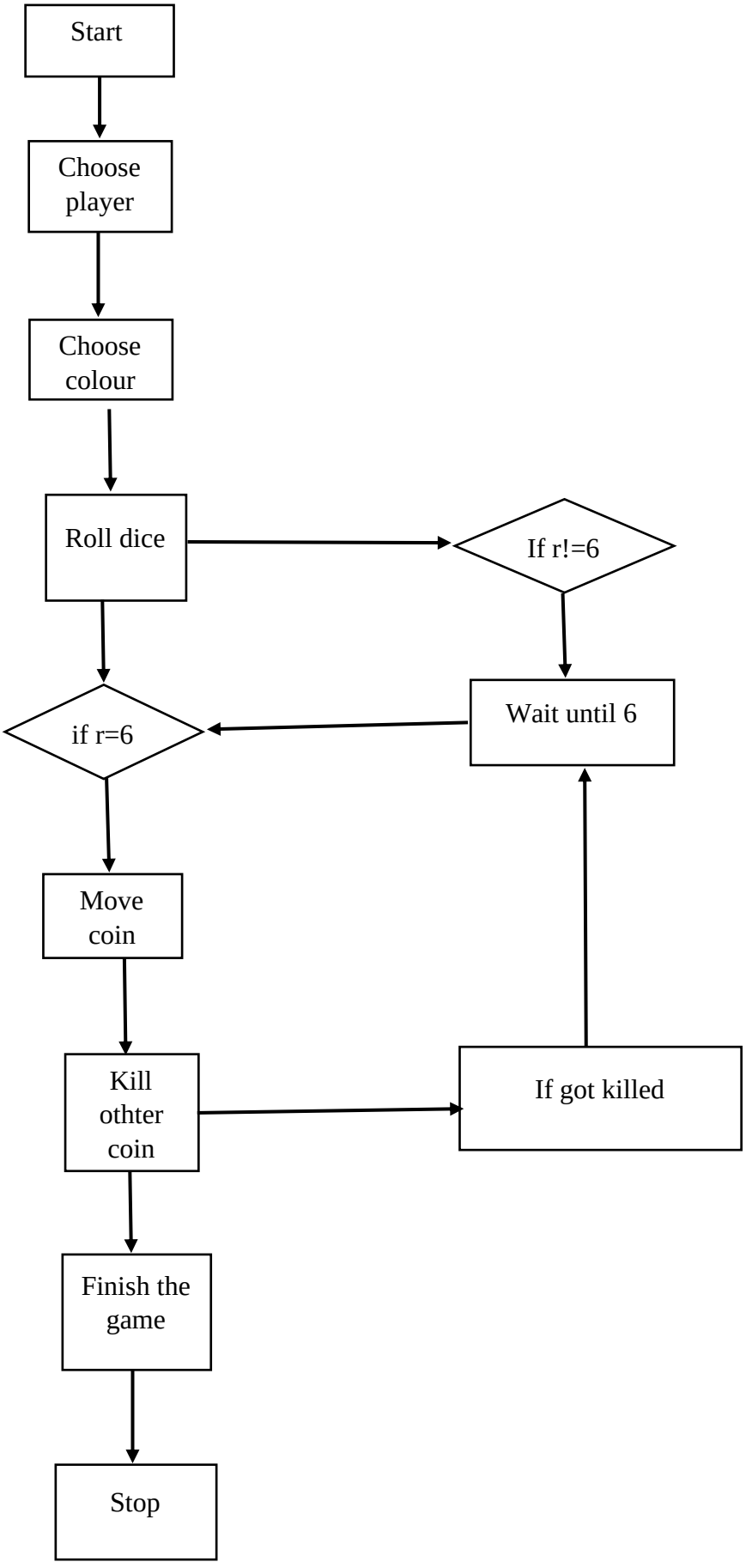
SOFTWARE REQUIREMENTS

Language used	:	C Language
Software	:	dev c++ with including graphics(graphics.h).
Operating system	:	windows 10

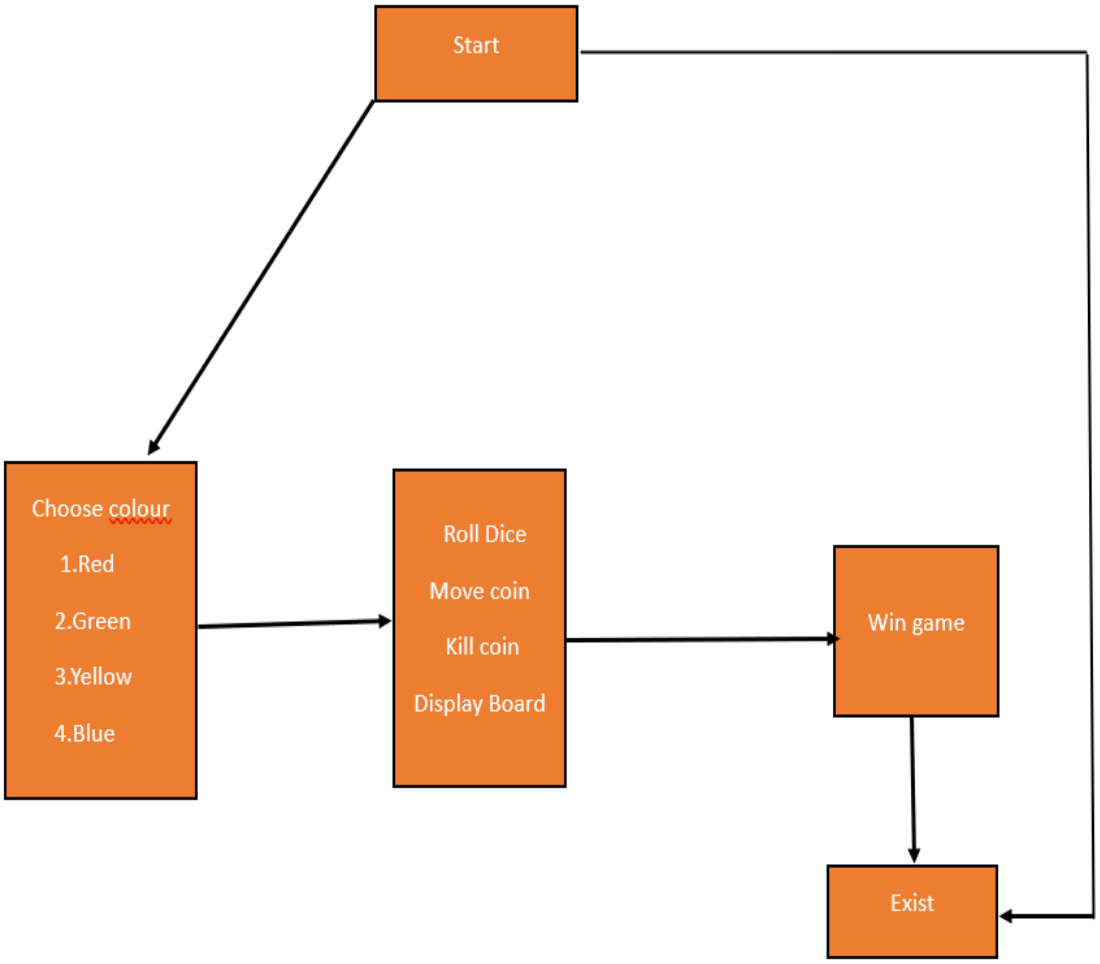
HARDWARE REQUIREMENTS

System	:	AMD
Hard disk	:	Not necessary.
RAM	:	2GB(min)
Processor	:	i5
Memory	:	128 GB SSD(min)

FLOWCHART


Start
Choose player
Choose colour
Roll dice
If r!=6
Wait until 6
if r=6
Move coin
Kill othter coin
If got killed
Finish the game
Stop

BLOCK DIAGRAM



IMPLEMENTATION

- The Ludo Game Mini Project is a digital implementation of the popular board game called Ludo. It recreates the gameplay mechanics and rules of the traditional Ludo game in a user-friendly graphical interface.
- During the implementation part of the Ludo game we have mainly focused on retrieval of the information as easy as possible, and without ambiguities.
- we have use some loops like for loop, while loop and switch case in our project.
- We use file handling to store the rules of the ludo game.
- We Have use graphics in our program to show the ludo board.
- Some logic and functions that we used to implement in our project.

  Void rd()

  Void display_Board()
- The implementation includes the following key steps:

1. Game Initialization: Initialize the game board, player tokens, and starting positions.

2. User Interaction: Enable user actions such as dice rolling, token selection, and gameplay actions through the GUI.

3. Dice Rolling: Generate a random number between 1 and 6 to simulate the outcome of the dice roll.

4. Token Movements: Track token positions and update them based on the dice roll, ensuring adherence to movement rules and game board boundaries.

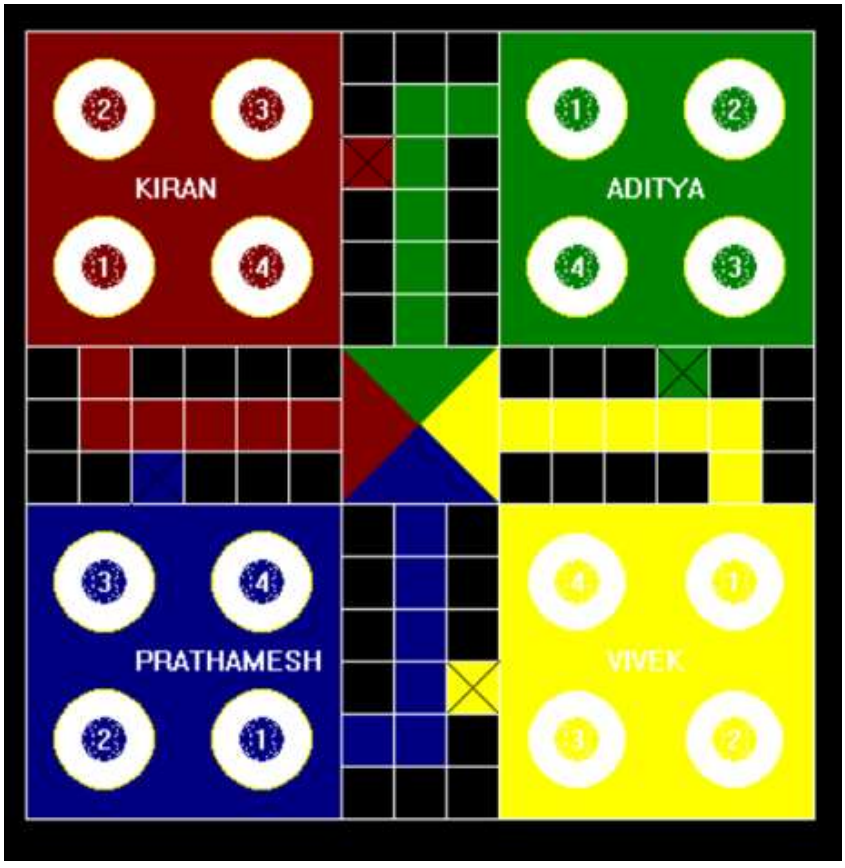
5. Game Rules: Enforce game rules such as allowing a player to roll again on a six, capturing opponents' tokens, and determining win conditions.

6. Game Progress and Display: Update and display relevant information, including the current player's turn, token positions, and messages.

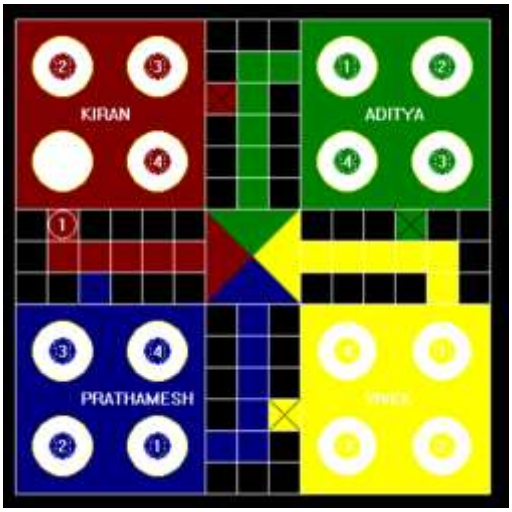
7. Testing and Debugging: Conduct rigorous testing and debugging to ensure the accuracy and stability of the implementation.

INPUT-OUTPUT SCENARIO

```
                                    LUDO

**************************************************************************************
*                                    $ RULES $                                       *
*     1.The game is played between 2, 3, or 4 players without a partnership.         *
*     2.You need to roll a 6 to activate each token. If your token is not activated and *
*       you roll any other number than 6, your turn passes to the next player.       *
*     3.The value on the dice determines how many boxes your token moves.            *
*     4.You get an extra turn if you roll a 6.                                       *
*     5.If you happen to roll a 6 three consecutive times, you lose your next        *
*       turn.                                                                        *
*     6.If your token lands on an opponents token, two things will happen:           *
*          -The opponents token is sent back to their base, and they must roll a 6   *
*           again to activate it.                                                    *
*          -You get an extra turn.                                                   *
*     7.Once your token reaches the home column, you need to roll the exact number or *
*       less than the required number to get your token to the home base. For instance, *
*       if you have three spaces to move and you roll >=4, you cannot move that token 3 *
*       spaces. In such a case, you have to move another token or pass.            *
*     8.All of your 4 tokens must travel around the board and move into the home base *
*       space to win the game.                                                       *
**************************************************************************************


        1. PLAY
        2. EXIT
ENTER YOUR CHOICE : 1

ENTER RED/1st PLAYER NAME : KIRAN

ENTER GREEN/2nd PLAYER NAME : ADITYA

ENTER YELLOW/3rd PLAYER NAME : VIVEK

ENTER BLUE/4th PLAYER NAME : PRATHAMESH
```

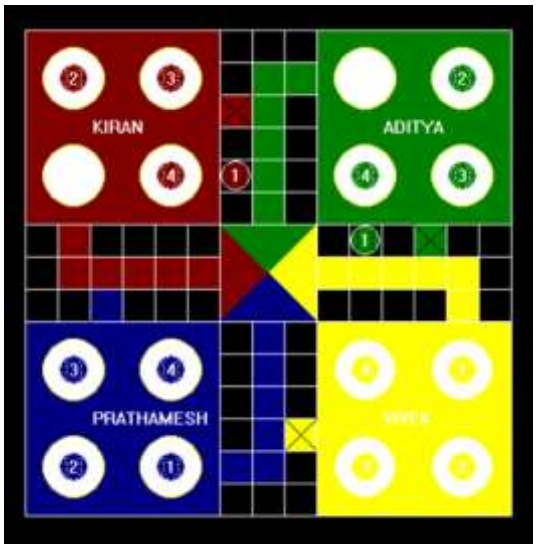


```
PRESS ENTER KEY TO CONTINUE....

KIRAN TURNS ENETR 1 FOR PLAY : 1

        DICE : 6

KIRAN. ENETR THE PIECE NUMBER WHICH PIECE YOU WANT TO MOVE : 1
```




```
PRESS ENTER KEY TO CONTINUE....

KIRAN TURNS ENETR 1 FOR PLAY : 1

        DICE : 3

KIRAN. ENETR THE PIECE NUMBER WHICH PIECE YOU WANT TO MOVE : 2

YOU CAN'T MOVE PIECE NO 2..PLEASE ENTER PIECE NO AS PER THE RULE...

KIRAN. ENETR THE PIECE NUMBER WHICH PIECE YOU WANT TO MOVE :
```

```
PRESS ENTER KEY TO CONTINUE....

ADITYA TURNS ENETR 1 FOR PLAY : 1

        DICE : 2

ADITYA. ENETR THE PIECE NUMBER WHICH PIECE YOU WANT TO MOVE :
```



CONCLUSION

This project is one of the basic GUI applications of the C Programming. This game can be played and enjoyed by all the people who are very much interested. All the players whoever they are, will become much attracted to the game as long as they are playing it. There will be no trouble playing the " LUDO ".

FUTURE SCOPE

As the technology changes or new requirements are expected by the user, to enhance the functionality of the product may require new versions to be introduced. Here the player must roll the dice for all the colours which is very time taking. The enhancement is going to be that the player will have a chance to select their required colours to play the game. Also a few changes can be done to the appearance of the board and we can upgrade for multiplayer game.

REFERENCE

WEB REFERENCE

1. https://youtube.com/playlist?list=PLiOa6ike4WAFOn9oStv0YI9QMcCVzv-AV
2. https://www.udemy.com/course/c-programming-for-beginners-programming-in-c/

BOOK REFERENCE

1. C the Complete Reference by Herbert Schild (Tata McGraw Hill) 4th Edition.

2. The C Programming Language- Brian W. Kernighan, Dennis Ritchie 2nd Edition.