

Project Abstract

Project Title:

Tic-Tac-Darts

Project Objectives:

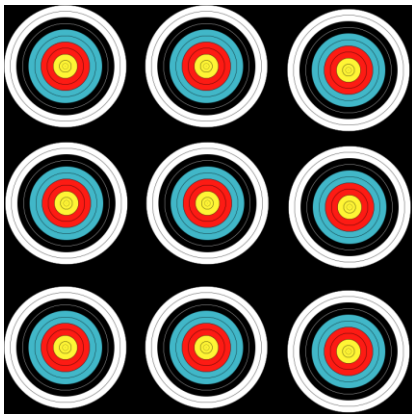
The objectives of the game would be:

1. To provide a fun and engaging gameplay experience for players.
2. To test the player's reflexes and hand-eye coordination.
3. To improve the player's strategic thinking and decision-making skills.
4. To provide a multiplayer experience for players to compete against each other.
5. To showcase the capabilities of OpenGL graphics and sound effects.

Project Description:

The game that I propose for my project is Tic-Tac-Darts, which as the name suggests is a hybrid between the existing games: Tic-Tac-Toe and Darts.

The game would be developed in a 3-Dimensional environment consisting of a board with 9 bullseyes consisting of 10 rings arranged in a 3x3 matrix as shown below.



This is 1v1 game whose is to control the 3 continuous bullseyes in a vertical, horizontal, or diagonal direction just like Tic-Tac-Toe.

The game would occur in a turn-by-turn manner consisting of 18 rounds of alternate turns of the players. The bullseyes can be captured by aiming the darts at it. The player would also be awarded a score from 1 to 10 indicating the dart's closeness to the centre of the bullseye (10 indicating a perfect bullseye and 1 indicating the outermost ring of the bullseye).

The twist of the game over Tic-Tac-Toe is that a player can capture the opposing player's bullseye as their own by having a higher score at the bullseye i.e., by aiming it closer the centre than the opposing the player. For example, if a player has captured a bullseye with score 6, the opposing player can recapture the bullseye as their own by having a score of 7 or above at that bullseye.

In case of the game lasting more than 18 rounds, the game would be awarded to the player with the higher cumulative score, and in the rare case of a tie the game would be awarded to the player who starts latter or player 2.

The aiming mechanism of the game would work by first aiming the dart towards a particular bullseye using the arrow keys and adjusting the power using a power slider found in games like Mario Golf:



The power slider would alternate quickly between the lowest and highest point and the player can select the power of the dart by pressing spacebar at their intended power level.

To increase the skill of the aiming mechanism, the aiming system would consist of a transparent circle whose centre would indict the aim point and would move slowly with input(Arrow keys) and would fix automatically after 5 seconds.

The dart would move in a 3-Dimensional space in a parabolic motion (opposed to gravity) where the starting velocity of the dart would be determined by the aim and the power level set by the user.

The game would also consist of HUD that would show the score of both the players.

Project Timeline:

- Week 1: Asset Creation (Board, Dart, HUD).
- Week 2: Aiming Mechanism and Collision detection algorithm.
- Week 3: Coding the Business logic of the game.
- Week 4: Finishing the game and Touch-up.

Project Requirements:

- A Windows or Linux system with sufficient graphic capabilities.
- G++ Compiler.
- OpenGL Library.

Team Members:

Om Morendha

20bcs095

20bcs095@iiitdwd.ac.in

Aditya Hegde

20bcs006

20bcs006@iiitdwd.ac.in

Sai Tarun Parasa

20bcs096

20bcs096@iiitdwd.ac.in

Rohan Singh

20bcs113

20bcs113@iiitdwd.ac.in