

You Are It

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Introduction:

Our program lets users play a game of tag which is a really popular outdoor game to play with friends. You can choose between several different types of tag game modes like normal tag, freeze tag and cops and robbers. Our game was created to solve the lack of tactical and strategic based games in recent times. The game of tag involves a heavy use of strategy since you have to decide where to run or the most effective way to tag someone. The rules of tag are dependent on the game mode you choose however there are some basic rules each mode has. There is a person who is the tagger and a group of people who are running away from the tagger and you want to not let them catch you or else you will be out of the game. People who would want to use our program are people who love playing games which are not specifically shooter based and require thinking and also military strategists who are trying to find the optimal way of tracking down their enemies based on their weapons and resources. The primary features of our game will include a menu screen, rules screen playable maps, different tag modes, networking and obviously the actual game screen where you are playing the game. The game of tag has a "boundary" in which you play, which means that you are restricted to how far you can run around.

Instructions:

The Setup:

When you start the program you will see a menu screen where there are four choices. The button at the very top will be the play button. When you click on that, you can select the map you want to play in and also what tag mode you want to play. The next button will lead you to the instructions screen where it will explain how each tag mode works and other necessary instructions to start a game. The next button will be the settings button where you can choose between WASD and arrow keys when playing networking. The next button will be the credits button that will give credits to the creators. For the first through fourth button, when you want to go back to the menu, there will be a 'back' button at the bottom left corner.

Basic Gameplay:

Once you start the game, the program will randomly assign one of you to be tagger and others as runners. You can control movement using WASD or arrow keys. The goal of the runner is to run away from the tagger and the goal of the tagger is to tag everybody before the time runs out. To tag a person you will need to have your character overlap with the runner character. To make the game require more strategy, the tagger will have a 10% speed advantage compared to the runners. There will be minor changes to the rules between each game mode. There will also be colorful cubes

located around the map. These cubes represent special abilities that last for a short period of time. When the game starts, there will be a five second countdown before the runners can exit into the map. After the five seconds pass, an exit will be created and the runners can go into the map. During these 15 seconds the taggers cannot move. After 15 seconds, the taggers will be able to move and the game starts. The game ends when the timer reaches 0 or if a win condition is satisfied.

Features List (THE ONLY SECTION THAT CANNOT CHANGE LATER):

Must-have Features:

- Different playable maps to play tag on
 - Different platforms in the maps
 - Different backgrounds and sceneries
- 3 different tag modes to have in our game
 - Normal Tag (At least 2 people for multiplayer) - Once someone gets tagged they get kicked out of the round. People who were tagged can still spectate the round but not play it. If not everyone is tagged by the time the time runs out then runners win else taggers win
 - Goal for tagger - Tag everyone before the time runs out
 - Goal for runner - Not to get tagged before time runs out.
 - Freeze Tag (At least 4 people for multiplayer) - If taggers tag someone they do not get kicked out of the game, instead they freeze. The other people can also unfreeze the person frozen if another runner is able to continuously touch them for 2 seconds. If everyone is frozen by the time the timer runs out then taggers win or if the taggers are able to freeze one person 3 different times then they win also. Else the runners win.
 - Goal for tagger - Tag everyone or tag one person three times
 - Goal for runner - Don't get tagged, save others
 - Cops and Robbers (At least 4 people for multiplayer) - Once a robber is tagged by a cop, they will be teleported to the jail which is at the corner of the map and will not be able to move. Another robber can save a robber in jail by touching that robber.
 - Goal for cops - Put all the robbers in jail by tagging them
 - Goal for robbers - Avoid being put in jail and save other robbers in jail
- The game of tag is playable over a network
- Make the menu screen for the game where you can go to the instructions page, the play screen, the settings screen, and the credits screen
- Make a settings screen where you can choose between WASD and arrow keys.
- Make a rule screen where you can learn about the rules of each mode and instructions on how to join or create a server
- Make a credits screen where you can see who created the game

- The abilities in each game which can change the tides of the game very quickly towards your specific teams. Each of these abilities spawn in a random location on the map. Each ability is one-time-use and the spawn will disappear the moment someone picks it up. These abilities activate the moment you touch them.
 - Abilities which help the taggers
 - Dive tag - Lets the taggers catch runners in a bigger radius. The tagger who gets this will have an increase in size by 50%. Lasts for 7 seconds.
 - Abilities which help the runners
 - Sneaky cloak - Lets you be invisible to both runners and taggers for 4 seconds
 - Abilities both can pick up
 - Increased jump - Lets you jump 20% higher for a period of 7 seconds.
 - Super Slick - Gives you a 25% increase in speed for 7 seconds.

Want-to-have Features:

[These are features that you would like to have by the project due date, but you're unsure whether you'll hit all of them. A good final project would have perhaps half of these completed. At least 5 are required. Again, fully describe each.]

- Characters to be able to perform combo moves once they reach a certain point throughout their game
- Add more maps
- Sound effects in the game to make it more intense and packed and make the ticking sound when the timer reaches the last 30 seconds.
- Animations for special effects which make the UI look more cleaner
- A way to collect rewards when you get wins and a battle pass where you can unlock skins
- Adding emotes in your game to express how you feel: happy, angry, sad
- Adding a way to save your progress so that you can progress in the battle pass

Stretch Features:

- 3D version which depicts how a real life game of tag would look like if you played it
- A chat system where people can chat and be toxic to each other once they win
- Allowing you to create your own maps to play on including adding special features to your map

Class List:

- Sprite - Representing the player in the game
 - Player - Represents the tagger and runner class

- Screens - Superclass for the screens below
 - MenuScreen - The menu screen which appears first when you start the program
 - PlayScreen1 - The screen where you pick game modes and maps
 - RulesScreen - The screen which contains the rules for all the gamemodes
 - ScreenSwitcher - The interface responsible for switching screens
 - SettingScreen - The screen where you can change your input from wasd to arrow keys and vice versa
 - AbilitiesInstructScreen - This screen contains all the abilities for each ability so that you know them before the game starts
 - GameOverScreen (not used)
 - RoundOverScreen - When the timer runs out or a player loses it switches to the game over screen
 - NormalMapScreen - This is the basic game mode and the basic map screen
 - CreditsScreen - The credits for the game
 - ForestMapScreen - When you select the forest map it goes to this screen
 - FourPlayerOrNetwork (not used)
 - MultiplayerOrNetwork - Checks to see whether you are playing multiplayer or network version of tag
 - NormalMapFreezeTagScreen - Map for freeze tag on the normal map
 - Start1v1Game - Starts the 1v1 game by prompting the users to enter their name
 - StartNetworkGame - Starts the game when played over a network
 - TwoPlayerOrNetwork (not used)
 - WaterMapScreen - The water map screen
 - CopsNRobbersWaterMap - Screen for water map and cops n robbers game mode
 - ForestMapCopsNRobbers - Screen for forest map and cops n robbers game mode
 - ForestMapFreezeTag - Screen for forest map and freeze tag game mode
 - NormalMapCopsNRobbers - Screen for normal map and cops n robbers game mode
 - ServerNetworkHelp - Gives instructions on how to use networking
 - WaterMapFreezeTagScreen - Screen for water map and freeze tag game mode
- SpecialAbilities - Superclass for the below abilities
 - DiveTag - The dive tag ability gives the tagger increased range so it is easier for him to tag the person
 - HighJump - High jump makes it so that the runner can jump higher
 - SneakyCloak - Sneaky cloak is an ability where the player can become invisible
 - SpeedBoost - SpeedBoost makes the player faster
- System - Representing the driver class
 - DrawingSurface - The class where all the screens are instantiated and the switching between screens happened
 - Main - Calls the DrawingSurface which runs the code

Credits:

Inside Sources:

Noah:

- a) AbilitiesInstructScreen
- b) GameOverScreen
- c) RoundOverScreen
- d) DiveTag
- e) HighJump
- f) SneakyCloak
- g) SpecialAbilities
- h) SpeedBoost
- i) Sprite
- j) StartNetworkGame
- k) TwoPlayerOrNetwork

Kartik:

- a) Screens
- b) ScreenSwitcher
- c) TwoPlayerOrNetwork
- d) FourPlayerOrNetwork
- e) MultiplayerOrNetwork
- f) Start1v1Game
- g) WaterMapScreen
- h) CreditsScreen
- i) ForestMapScreen

Both:

- a) Player
- b) MenuScreen
- c) SettingScreen
- d) RulesScreen
- e) PlayScreen1
- f) DrawingSurface
- g) Main
- h) NormalMapFreezeTagScreen
- i) CopsNRobbersWaterMap
- j) ForestMapCopsNRobbers
- k) ForestMapFreezeTag

- l) NormalMapCopsNRobbers
- m) ServerNetworkHelp
- n) WaterMapFreezeTagScreen

Outside Sources:

- Shelby's Coding demo - Screen Switcher
- Processing
- Shelby's Networking Demo - Not fully implemented
- Shapes library - Intersection between lines and rectangle