



Easy Ice Cream Cruise

User Guide

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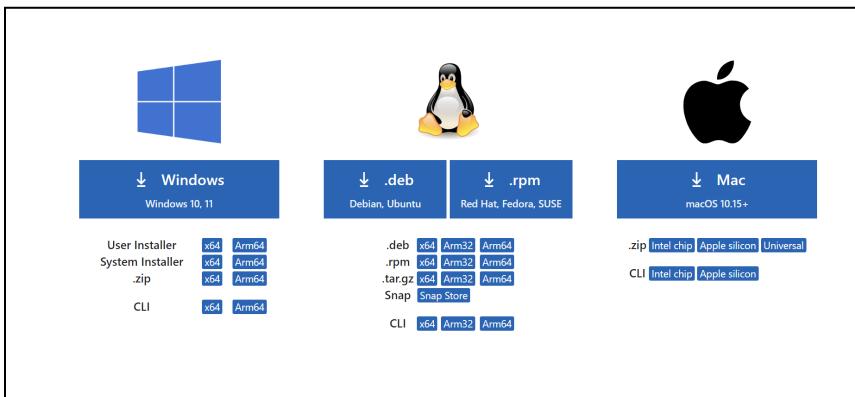
Introduction

Easy Ice Cream Cruise is a *thrilling* 3D online racing game designed to immerse players in a world of high-speed competition. This game transports players into online race tracks where they can experience the exhilaration of racing against the clock and their friends. With realistic physics and beginner-friendly mechanics, Easy Ice Cream Cruise offers an authentic racing experience that tests driving skills and strategic thinking. The game features multiple eight tracks of varying difficulty, catering to both beginners and seasoned racers. Challenge your friends to see who can dominate the leaderboards or set a new record time in this adrenaline-fueled racing extravaganza!

Installation

Note: For all of the following steps, you may need your device's administrator name and password, without this, certain steps may not be completed.

To start, install the latest version of [Visual Studio Code](#) on your device. You should install



the version of Visual Studio Code
that is compatible with your
device's operating system.
Operating system-specific
installation instructions can be

found at the following links: [MacOS](#), [Windows](#), [Linux](#), and [Raspberry Pi](#).

Next, you need to install [Node.js](#) on your computer. Node.js allows your device to host and utilize the online capabilities of Easy Ice Cream Cruise. We recommend downloading the Long Term Support (LTS) version, as it is more stable and reliable for most users.

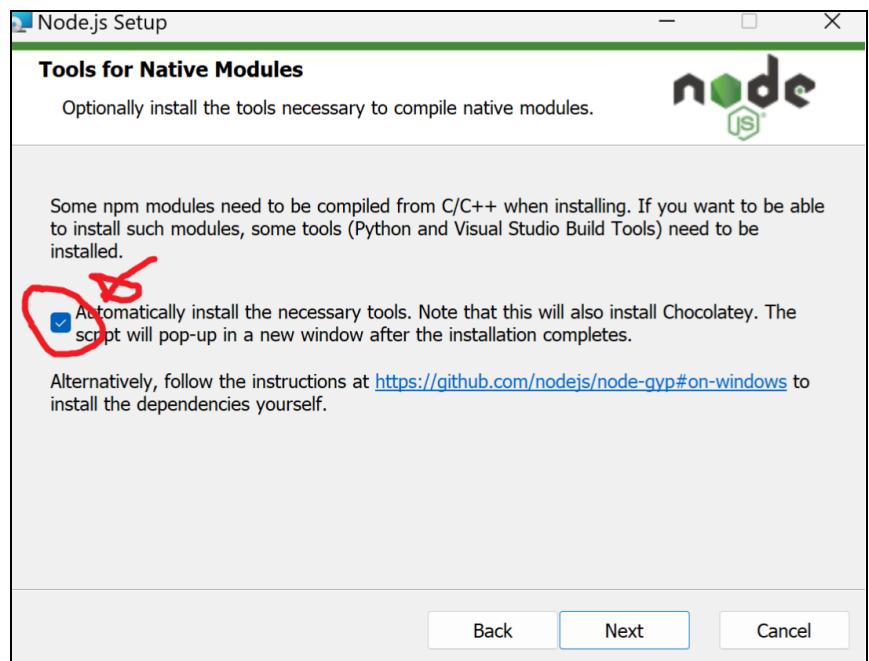
Downloads
Latest LTS Version: 20.10.0 (includes npm 10.2.3)

Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS	Current
Recommended For Most Users	Latest Features
Windows Installer node-v20.10.0-x64.msi	macOS Installer node-v20.10.0.pkg
Source Code node-v20.10.0.tar.gz	

	32-bit	64-bit	ARM64
Windows Installer (.msi)			
Windows Binary (.zip)	32-bit	64-bit	ARM64
macOS Installer (.pkg)			64-bit / ARM64
macOS Binary (.tar.gz)		64-bit	ARM64
Linux Binaries (x64)		64-bit	
Linux Binaries (ARM)		ARMv7	ARMv8
Source Code			node-v20.10.0.tar.gz

After downloading the Node.js installer, run it and follow the on-screen instructions. During the installation process, make sure to check the box that says "Automatically install the necessary tools." This option will install additional software required for Node.js to function optimally on your system.



Once the installation is complete, you can verify the installation by opening a command prompt or terminal window and typing the following commands:

1. “**node -v**” This command should display the version of Node.js that is currently

installed on your computer.

2. “**npm -v**” This command

should display the version of **npm** (Node Package Manager)

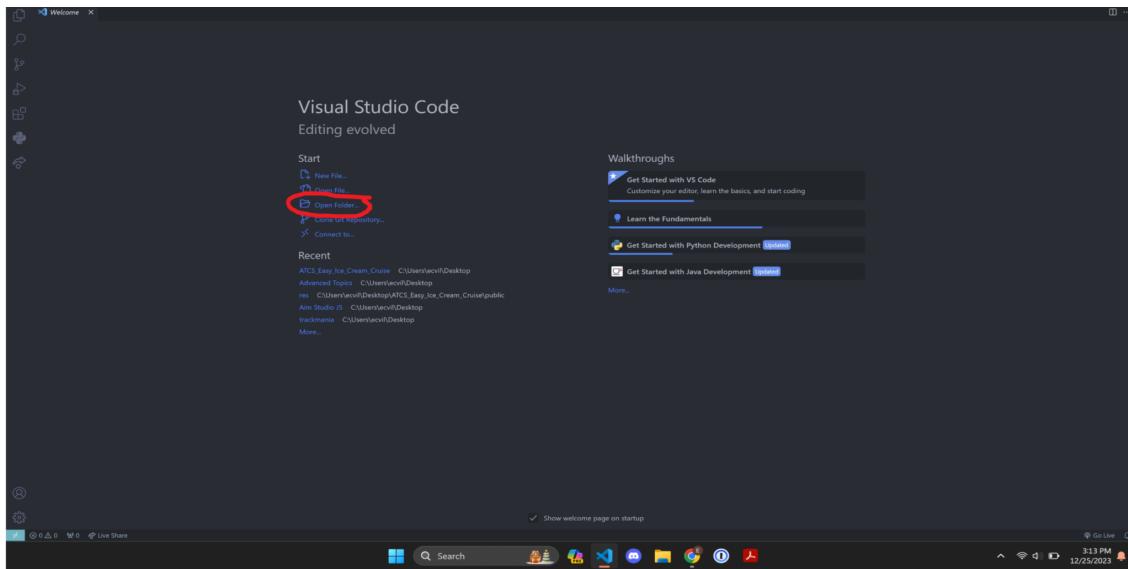
that is installed. **npm** is used to

install modules and packages required for your project.

```
C:\Users\ecvil>node -v  
v20.6.0
```

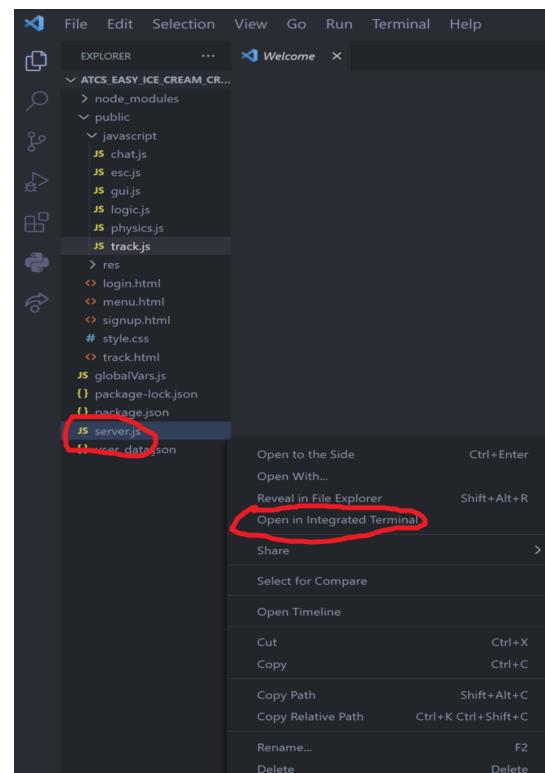
```
C:\Users\ecvil>npm -v  
9.8.1
```

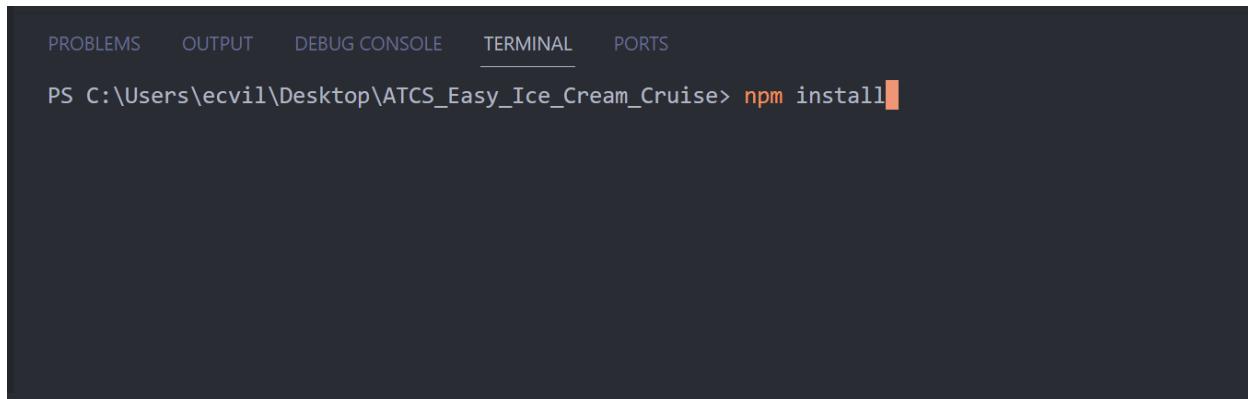
With Node.js successfully installed, the next step is to open Visual Studio Code and use the 'Open Folder' option to open the **ATCS_Easy_Ice_Cream_Cruise** folder on your desktop.



On the left side of your screen, you should see a file called `server.js`, right-click/two-finger click on this file, then click “Open in Integrated Terminal.”

In Visual Studio Code's terminal that you just opened, run the command “`npm install`”. This command will install all the necessary dependencies for the game server from the `package.json` file included in the server files.



A screenshot of a terminal window from a code editor. The tabs at the top are PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (which is underlined), and PORTS. The command 'PS C:\Users\ecivil\Desktop\ATCS_Easy_Ice_Cream_Cruise> npm install' is being typed into the terminal. The background of the terminal is dark.

After the dependencies are installed, you need to get your public IP address. A public IP address is a unique identifier assigned to your device when it connects to the internet. It's like a postal address for your computer, smartphone, or other networked device, allowing it to communicate with other devices and services on the internet. Getting your public IP address is dependent on your operating system:

- MacOS:

- Open the terminal by pressing Command+SPACE on your keyboard.
- Type “Terminal” and click on the Terminal application.
- Once you have the terminal open, type: “**ipconfig getifaddr en0**”.
- Copy the resulting IP address to your clipboard. (It will look like 4 numbers separated by periods.)

- Windows:

- Press the Windows key on your keyboard.
- Type “Command Prompt” and open the Command Prompt application.
- Once you have the Command Prompt open, type “**ipconfig**”.

- Scroll down to where it says, “Wireless LAN adapter Wi-Fi;” and copy the IP address next to “IPv4 Address,” to your clipboard.
- Linux:
 - Press Control+Alt+T on your keyboard.
 - Type “**ip -4 addr show eth0**” into the terminal.
 - Copy the IP address to the clipboard.

Once your IP address is copied to your clipboard, go to the **globalVars.js** file in Visual

Studio Code and replace the word

“localhost” with your IP. **DO NOT** remove
the quotations as it will not work if they are
missing. Save the file using the following

```
JS globalVars.js M ×
ATCS_Easy_Ice_Cream_Cruise > JS globalVars.js > [domainName]
1 // important aspect of the URL: change to IP address
2 // to play with others.
3 export const domainName = "102.177.6.214";
```

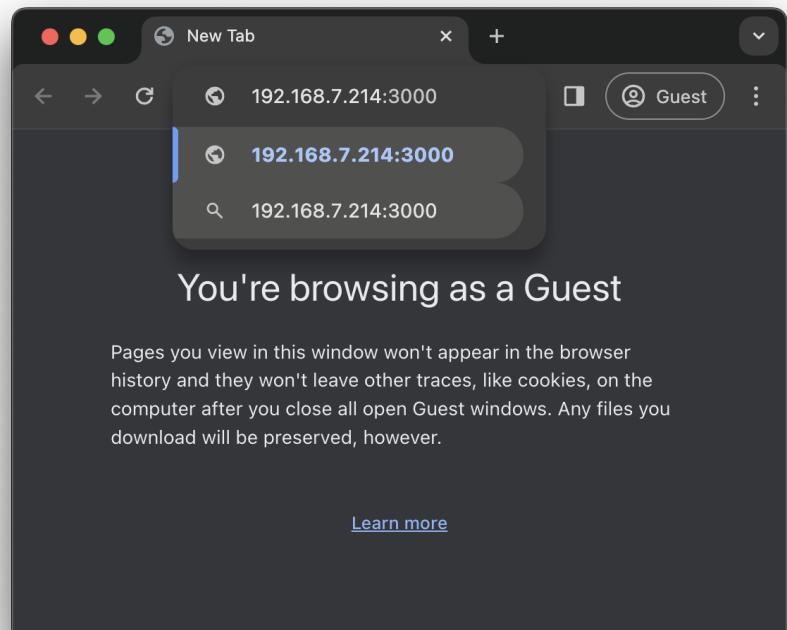
command: Command+S on MacOS, Ctrl+S on Windows and Linux.

You can now start the server by running the command **node server.js** in the terminal. This will start the game server, and you should see a message indicating that “The server is running on port 3000”.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS CODE REFERENCE LOG
○ (base) Lucass-MacBook-Pro:ATCS_Easy_Ice_Cream_Cruise lkross$ node server.js
Server is running on port 3000
```

Finally, to play Easy Ice

Cream Cruise with your friends,
share the server's (your) IP address
and port number with them. They
can then connect to your server
using Firefox or Chrome by
typing your **IP Address:3000** into
the browser. For example, you
might type **192.168.7.214:3000**.



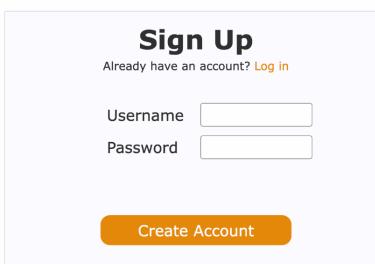
Remember, for a smooth gaming experience, ensure that your internet connection is stable.

Finally, Enjoy your time in the whimsical world of Easy Ice Cream Cruise!

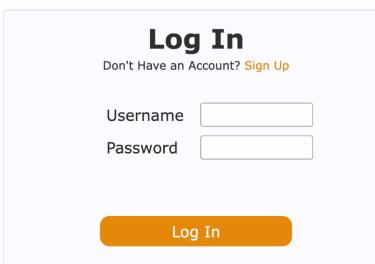
Playing The Game

Creating an Account

If you are a new player, create an account. If you are a returning player, navigate to the “Log In” page and log into your existing account.



The image shows a sign-up form for the "Easy Ice Cream Cruise" game. At the top, the title "Easy Ice Cream Cruise" and the names "Lucas Ross, Finn Taylor, Everett Villiger" are displayed. Below this, a "Sign Up" button is centered. Underneath the button, there is a link "Already have an account? Log In". The form contains two input fields: "Username" and "Password", each with a corresponding text input box. At the bottom of the form is a prominent orange "Create Account" button.



The image shows a log-in form for the "Easy Ice Cream Cruise" game. At the top, the title "Easy Ice Cream Cruise" and the names "Lucas Ross, Finn Taylor, Everett Villiger" are displayed. Below this, a "Log In" button is centered. Underneath the button, there is a link "Don't Have an Account? Sign Up". The form contains two input fields: "Username" and "Password", each with a corresponding text input box. At the bottom of the form is a prominent orange "Log In" button.

Navigating the Main Menu

Once you log in, you will be redirected to the main menu page. Notice the two game modes:

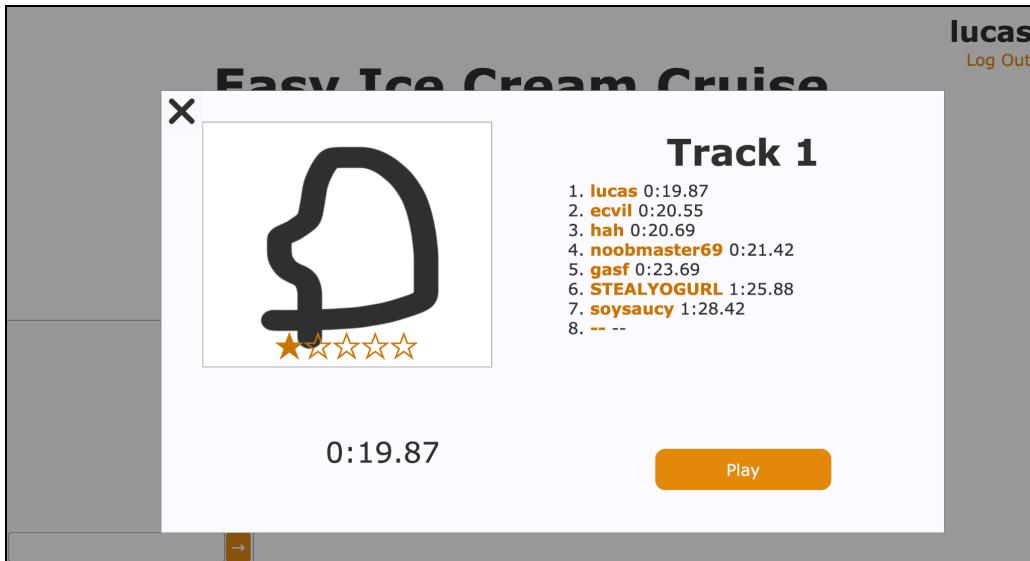
singleplayer and
multiplayer. You will load
with the “Singleplayer”
game mode selected. If
you would like to play in a
multiplayer game,
navigate to the



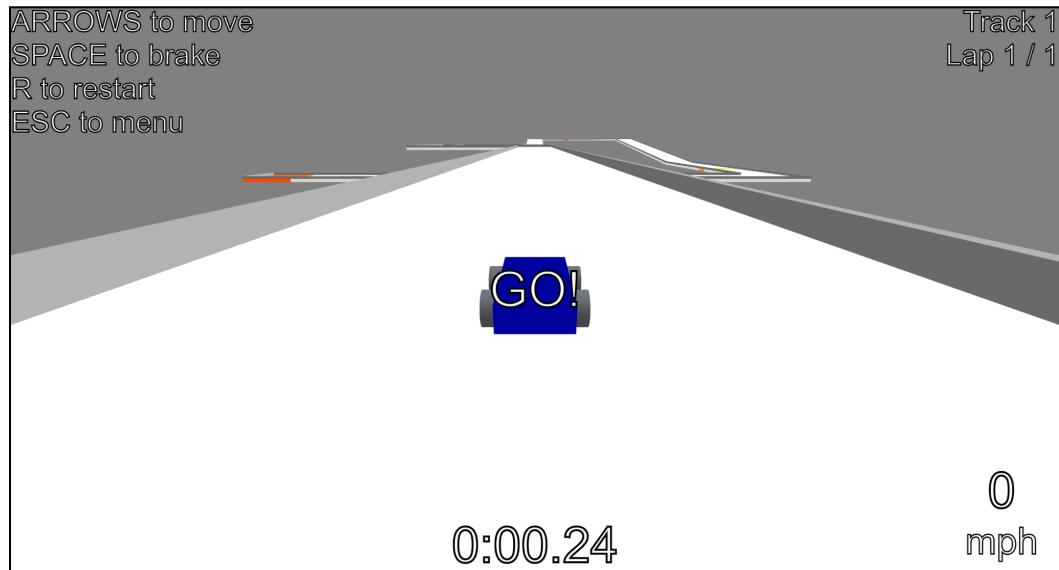
“Multiplayer” tab. There is an online chat that allows you to send messages in real-time to any other device on the main menu page. Try it out!

Playing Singleplayer

If you would like to play singleplayer, click on the track you would like to play. A pop-up will display your current personal best on the track (or “--” if you have not completed the track yet), a global leaderboard for that track, a preview of the track, and a “play” button. Press the “play” button to start the game!

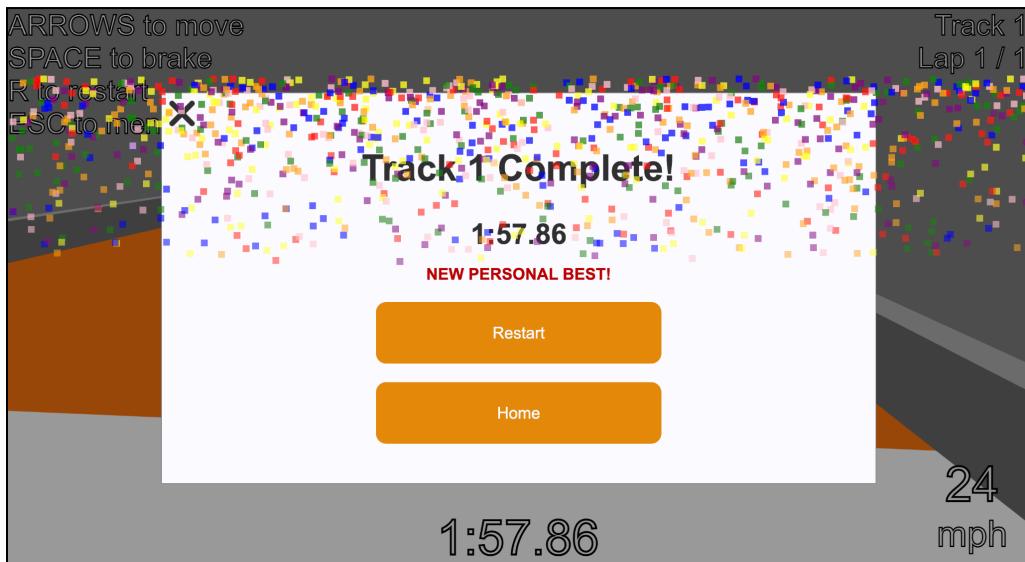


When you load into the game, there will be a 3-2-1 countdown. Once you see "GO!", the timer will start and the game has begun!



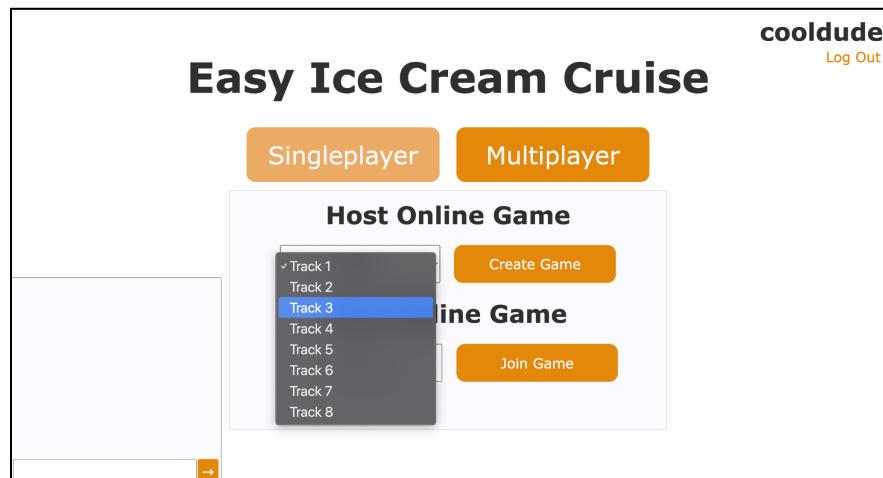
The amount of laps for the given track is displayed in the top-right corner. To complete a lap, you must contact every yellow checkpoint on the track. For tracks with only one lap, there will often be an orange finish block— you must contact every yellow checkpoint and then the orange finish block to complete the track. For tracks with more than one lap, you will spawn at a yellow checkpoint and must contact every yellow checkpoint on the track to register a lap. When you

complete a track, your final time will be displayed in a pop-up. If you get a new personal best time on the track, a fun confetti animation will play!

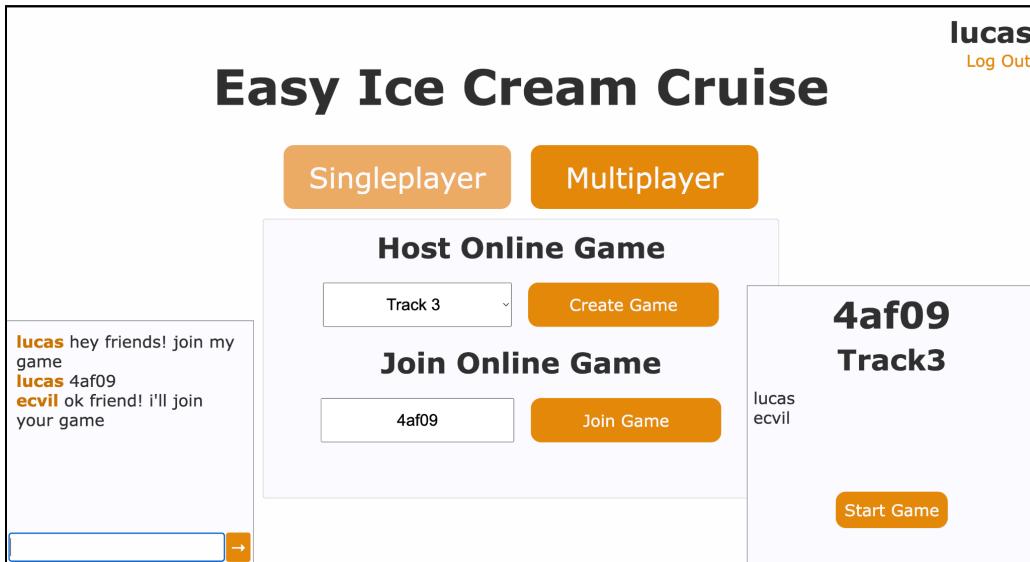


Starting an Online Game

If you would like to host a multiplayer lobby, navigate to the “Multiplayer” tab in the main menu. Choose the track you would like from the dropdown menu under the “Host Online Game” section and press the “Create Game” button to create an online game lobby.



The join code will be pasted into the join code box in the “Join Online Game” section. Press the “Join Game” button to join the new online game lobby. Since you created the game, you are the host and may choose when to start the game. A list of players in the lobby is shown as well. We recommend using the online chat to share your 5-digit join code with other players!

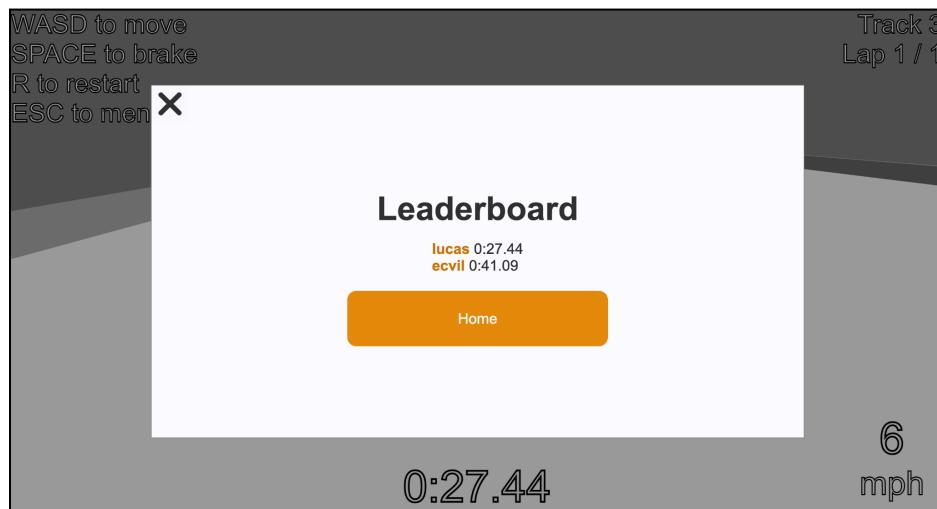


Playing Multiplayer

Once your online game loads, all players will start in the same place at the same time. Your car is blue and your opponents' cars are red.

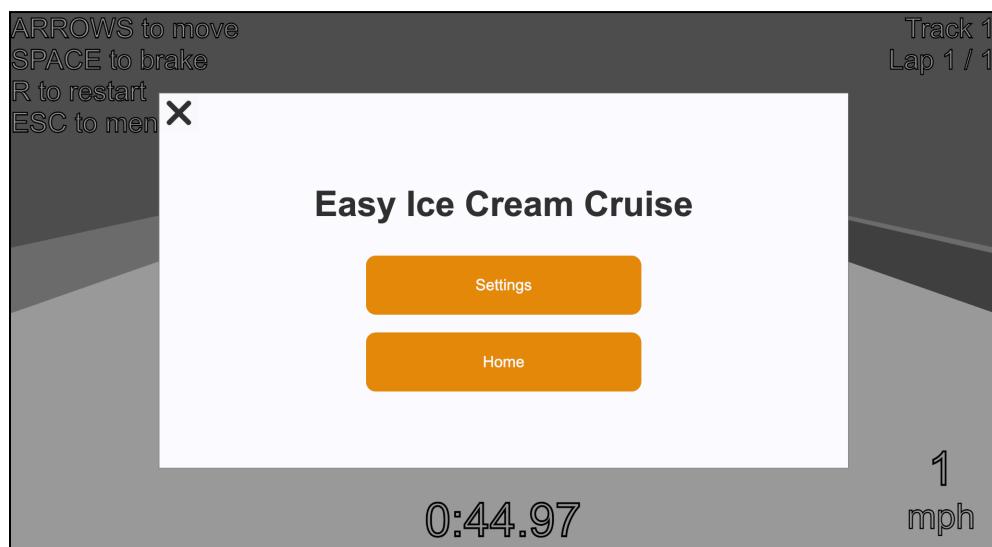


When you complete the track, you will see the lobby leaderboard. As other players finish, you can compare your times! When you're ready to leave the online game, press the "Home" button to return to the main menu.

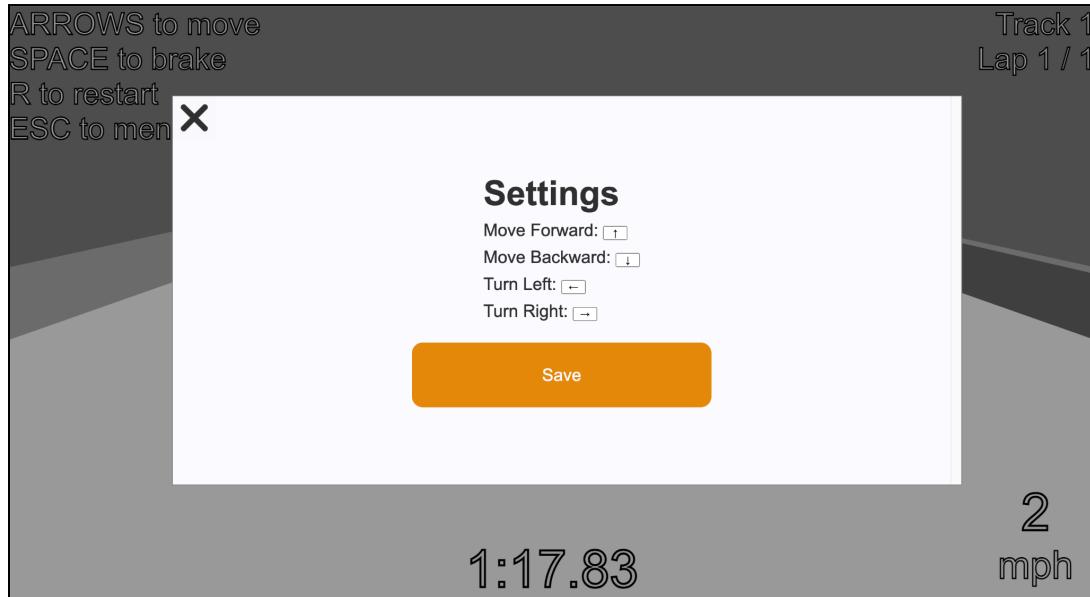


In-game Settings

By default, the arrow keys will move and turn your car. You may also use SPACE to apply a handbrake, slowing down the vehicle to a complete stop, and R to restart the track. If you would like to change your movement key binds (arrow keys), press ESCAPE and a game menu will appear.



Navigate to the “settings” menu and change your key binds as necessary. Furthermore, if you press the “home” button, you will return to the main menu and no final time will be saved.



Resources Used

All of the code written for this project was assembled with Visual Studio Code using Node.js.

In completing our project, we utilized a range of Node.js libraries, selected for their specific functionalities and compatibility with our objectives. They are as follows:

- three (<https://threejs.org/>)
- cannon-es (<https://schtepppe.github.io/cannon.js/>)
- express (<https://expressjs.com/>)
- bcrypt (<https://github.com/kelektiv/node.bcrypt.js>)
- ws (<https://github.com/websockets/ws>)

Furthermore, we used some code written by other people. For such code snippets, we added a comment that linked to the original author's code. Additionally, we used the following sites as references when writing our code:

- chat.openai.com
- stackoverflow.com
- geeksforgeeks.org
- schtepppe.github.io/cannon.js/docs
- threejs.org/docs