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**WASHINGTON STATE MIDDLE SCHOOL  
COMPUTER SCIENCE COMPETITION**

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May 14, 2016

Team Challenge  
90 Minutes

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**Please read these directions carefully before beginning. Breaking any of the rules is grounds for disqualification.**

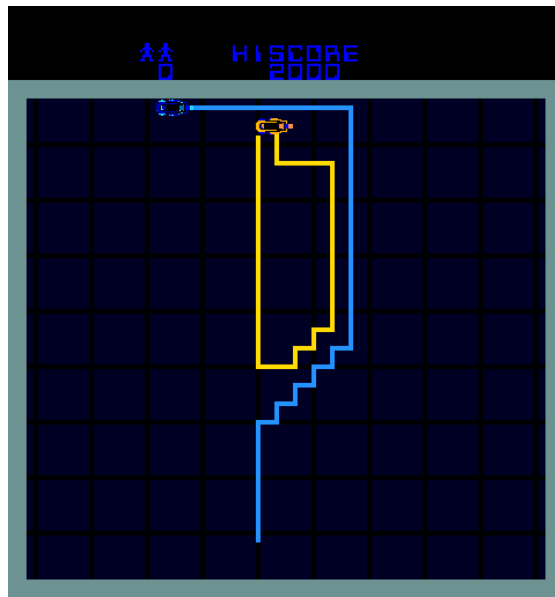
- Do not turn this page and begin working on the test until the start of the test is announced. Once time starts, you will have 90 minutes to complete this test.
- You are only allowed to consult with your teammates during the competition. No talking to anyone else (including coaches) is permitted.
- No devices of any kind (calculators, phones, etc.) besides computers are allowed during the test.
- You are not permitted to have any internet browser windows open during the test.
- Items with a positive point value are bonuses – choose which ones you want to include in your game.
- If you do not complete all of the required items, the rest of your test will not be graded and you will be disqualified.
- Partial credit can be award if you include an item that is not fully functional.
- Bonus points will be awarded for game design and special effects.

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## Requirements

The object of the game is for the user to box in their opponent and to not run into the walls of their opponent's path. The vehicles start in random positions and are pointed in random directions. The game ends when one person touches the edge or runs into their opponent's path.

Sprites do not need to look the same as in the example, but they must have the required names.



### Required Sprites

- Car 1
- Car 2

### Required Variables

- Lives
- Score

### Required Visuals

- Area for cars is separate from lives and score
- Brightly colored paths coming from behind the cars

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## Required Elements

Background including visual requirements appears

**Cars** appear in background with no path

**Lives** is set to 3

**Score** is set to 0

**Car 1** starts in a random position and points in a random direction

**Car 2** starts in a random position and points in a random direction

**Car 1** moves with arrow keys

A line is drawn behind each **Car** when they move

Decrease **Lives** by 1 if **Car 1** hits the wall

Decrease **Lives** by 1 if **Car 1** hits **Car 2's** path or **Car 2**

Game ends when **Lives** is 0

## When Green Flag is Clicked (Optional)

**1 point)** Have both **Cars** do an animation

**3 points)** **Car 2** is controlled by the user

**3 points)** Add a variable named "**Score 2**" that keeps track of **Car 2's** score

**4 points)** Add a variable named "**Timer**" that counts down every second

**5 points)** **Car 2** moves randomly and must last over 3 seconds without hitting a wall or **Car 1's** path

## Car Behavior (Optional)

**1 points)** A sound is made when **Cars** collide

**2 points)** Make an animation when the **Cars** collide

**2 points)** Reset **Timer** if **Cars** collide

**3 points)** Game resets if **Lives** is not 0

**3 points)** When **Lives** is 0, go to a "You Lose" screen

**5 points)** Have two **Obstacles** to avoid and lose a life when a **Car** hits them

**6 points)** Create randomly appearing **Coins** for the **Cars** to collect and keep individual **Scores**

## Extra Features (Optional)

**6 points)** Have a screen to choose if **Car 2** will move randomly or be controlled by the user

**6 points)** Before the game starts, a "3, 2, 1, Go!" countdown displays

**7 points)** When the game ends, a working "Play Again" button displays

**8 points)** At the beginning of the game, a "choose your character screen appears, in which you can choose what your car will look like

**9 points)** Game includes a working "pause / play" button

**10 points)** Part of the line disappears behind each **Car** after some time

**12 points)** When the game ends, a high score list which keeps track of the top 3 fastest times and the usernames of the players displayed