



Baseball MiniPros

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Version: 1.0

Overview

Baseball MiniPros is a 2D sports game that brings the classic sport of baseball to your computer screen. The game is set in a 2D world where the user faces off against a team of baseball players. The user's sole objective in the game is to get hits and home runs to score as many runs as possible against the opposing team! The game is suitable for players of all ages, genders, and nationalities!

Game Description

Objective – Score as many runs against the team of robotic baseball players as possible by getting hits!

Gameplay --

First, the user chooses their difficulty and the color that they would like their team to be. Then, they can start the game!

When the player is up to bat, there is a bar that moves along a gradient in the bottom right corner of the screen. The player must press 'P' for "pitch" to get the pitcher to pitch the ball. The closer that the bar is to the green part of the gradient when 'P' is pressed, the farther the ball will go. If the ball is hit hard enough, it will be a fly ball to the outfield and maybe even a home run! Otherwise, it will be a groundball that can be fielded by either the infield or the outfield.

The mechanics work just as they do in regular baseball. A single will advance all runners 1 base, a double 2 bases, a triple 3 bases, and a home run scores all runners currently on base and the batter.

For fielding, it also works the same way that it does in baseball, but with a little touch of simplicity. Instead of throwing the ball to a base, once the ball is hit, a *vertical* bar appears on the

right side of the screen. A black bar will ascend that. The bottom layer is out (red), followed by single (yellow), double (orange), and triple (green). The hit that the user will get corresponds to the area where the ascending black rectangle is on that vertical bar. That way, I avoided the timing, force checking, and decisions of throwing to a base. When a user gets a hit, the runners simply advance proportionally. An out results in them staying in the same place.

If you miss 3 times (or foul for the first two), that is a *strikeout*. The user cannot strike out on a foul ball. Three *outs* will cause the inning to increase, and thereby the level increases too!

Here is where the clever implementation of *levels* comes in. The difficulty can be chosen at the beginning of the game. But that is just the starting difficulty. The difficulty increases with each successive inning, of which there are a total of 4 in this game. What changes with the difficulty, you may ask?

- Speed of the hitBar (the one that determines the strength of the hit)
- Speed of the players
- Speed of the pitches

Once the game reaches the third out of the 4th inning, the game will display the user's score and ask them if they want to start over or quit the game.

Controls

The controls of this game are very simple. It only requires pressing two buttons!

‘P’ – When waiting for a pitch, there is a bar moving horizontally over a gradient that goes from red to yellow to green. Pressing ‘p’ will stop that bar, determining the strength of the hit. It will also initiate the pitch, which the user has to stand ready for, because it comes fast!

‘Spacebar’ – The spacebar is used to hit the ball. The user must time this accordingly, or they will miss the ball. The direction at which the ball is hit is dependent on when the user hits the space bar. For example, if the user hits the space bar a early (but not too early such that they miss), the bar will sail foul to the left. The same goes for swinging late, the ball will go foul to the right.

The user must also use their mouse to select menu options.

Assets Used

- Images
 - Background image of the field (which I modified to have a Bezier curve as the outfield fence): [Baseball | Baseball diamond, Baseball field, Baseball photography \(pinterest.com\)](#)
 - The bar to determine the strength of the hit: I made myself in Canva
 - Baseball: [Baseball Los Angeles Dodgers Jersey MLB Clip art - Baseball ball PNG png download - 2866*2862 - Free Transparent Baseball png Download. - Clip Art Library \(clipart-library.com\)](#)
 - MenuBall (used for displaying in the menu): [Baseball clipart black and white free clipart images 2 - Cliparting.com](#)
 - Scoreboard *based on* the one from this image: [Screen Shot 2018 04 04 at 11.20.15 PM.0.jpg \(1200×800\) \(vox-cdn.com\)](#)

- Sound files
 - Background (take me out to the ballgame 8-bit): [\(467\) Take Me Out to the Ball Game - 8bit Jazz Version - YouTube](#)
 - Hit sound: [\(467\) Bat Hits Baseball Sound Effect - YouTube](#)

User Menu

To play Baseball MiniPros, follow these steps:

1. Launch the game: Start by launching the game application on your computer.
2. Choose Difficulty and Team Color: You will be presented with a menu where you can select the difficulty level and the color of your team. Use the mouse to click on the desired options.
3. Start the Game: Once you have selected your options, click the "PLAY BALL" button to begin the game, just as umpires say ☺
4. Gameplay: The game consists of four innings, and your objective is to score as many runs as possible against the team of baseball players.
5. Batting: When it is you bat, a bar will move horizontally along a gradient in the bottom right corner of the screen. The closer the bar is to the green part of the gradient when you press the "P" key, the farther the ball will go when hit. Once you press the "P" key, the pitcher will pitch the ball towards you. You must use the spacebar to hit the ball. If you hit the ball with enough force, it will be a fly ball to the outfield and possibly even a home run. If not, it will be a groundball that can be fielded by either the infield or the outfield.
6. Running the Bases: The game mechanics work just like they do in regular baseball. A single will advance all runners one base, a double will advance them two bases, a triple will advance them three bases, and a home run will score all runners currently on base and the batter. You don't have to do any running strategy; the players will automatically run depending on what hit you get!
7. Uh, oh, strikeout!: If you miss three times, or foul for the first two, that is a strikeout. You cannot strike out on a foul ball.

Difficulty Levels: The clever implementation of levels comes in with the increasing difficulty level. The difficulty increases with each successive inning. The speed of the hit bar (the one that determines the strength of the hit), the speed of the players, and the speed of the pitches all increase with each level.

Game Over: Once the game reaches the third out of the fourth inning, the game will display your score and ask you if you want to start over or quit the game.

Hotkeys:

- P key – Press P to initiate the pitch and determine the strength of the hit.

- Spacebar – Use the spacebar to hit the ball.
- Mouse – Use the mouse to select menu options.

Difficulties

Oh, boy, there were a lot of them.

For starters, the foul line does not exactly line up with home plate in the image, so that made foul balls annoying to calculate. I settled for the solution to just name a ball foul based on the angle at which it was hit instead of the coordinates at which it was fielded. This ended up being easier to implement than my first go-around, especially since it allowed me to have players catch foul balls. But it was still annoying to figure out.

Making the runners advance was not as difficult as it was just a logic puzzle. I had to keep track of the index of the runner (in the runner array) to see who was hitting. Because there can only be 4 runners, the game only stores 4 of them – and thereby, only 4 members of the offence.

The biggest annoyance was the homerun checking. At first, I had it if hitspeed was greater than 5.5, it was a home run. However, this did not work with what I wanted to have, which was the ability for the outfielders to track and catch fly balls. So, I added functionality to predetermine where the balls were going to land. The challenge that this creates was I had to check to see if that value was below or above the fence. That proved to be *almost* impossible. I say *almost* because I came up with a very clever solution. I covered the original image with a Bezier curve the same color as the home run area. That way, the home run fence is demarked by a Bezier curve whose y values I can calculate. Then, I used bezierPoint to get the y coordinate at a given x coordinate, which allowed me to check if the ball's landingY was greater than the y coordinate of the fence at the ball's landingX. And there I was in the second week of class thinking I'd never use Bezier curves, well here I am!

Roles and Responsibilities of Each Team Member

Justin Strikowski – Absolutely Everything, Everywhere, All at Once, and he deserves extra credit for making something exceptionally complex 😊



User's Manual for Baseball MiniPros



ScoreBoard

In the top right, there is a **scoreboard**.

The score to the left is **your score**! That is how many runs you have scored! Don't worry that it is low now, it can only go up! The number to the right is the opposing team's score. Because this is just a hitting game, though, that will always be zero.

Below that, on the left, it says the **inning**. The inning also corresponds with the **level**. That means that as the innings progress, the pitches, players, and decision making gets faster and more difficult!

To the right of that is the number of **outs** in the inning. Once there are three outs, it will go to the next inning. Unlike regular baseball, this **Baseball MiniPros** games only have 4 innings.

On the bottom is a graphical representation of where there are currently **runners** standing. You can either look at that, or you will be able to clearly see where your players are standing.

To the right of that is the **count**. That is a baseball term for how many balls and strikes there are. Remember, three strikes, you're out!

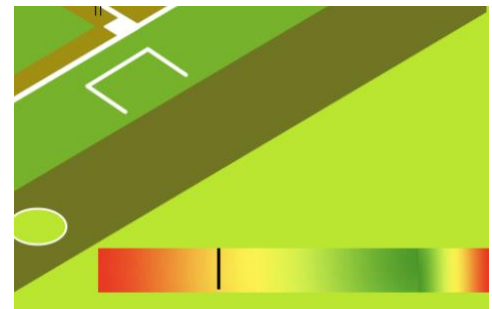
You	Mini Pros
0	0
▲ 1 ▼	○ ○
◆ ◆	0-0

The Hit Bar

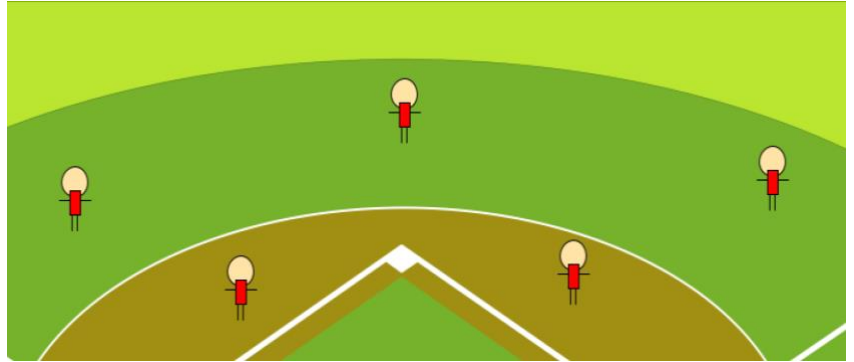
In the bottom right, there is a **hitBar**.

The black bar will move back and forth really really fast. You will try your best to press the 'p' key when the black bar is over the green. That will result in the hardest hit, and the best chance at a home run! Pressing 'p' when the black bar is in the red will result in a bad hit ☹.

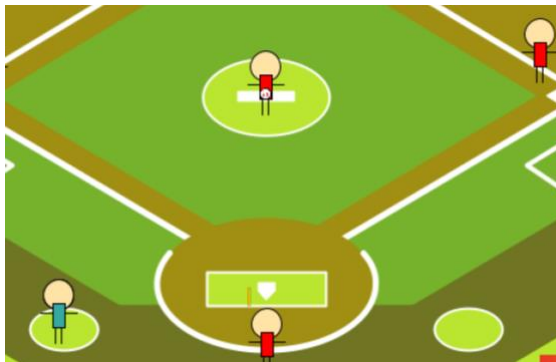
Immediately after 'p' is pressed, the ball will be pitched.



Try and aim for the fences, because hitting the ball well enough will make the ball fly over the fence, getting you a home run and scoring everyone on base!



Pitching



The pitcher, seen here, is holding a baseball. When that 'p' key is pressed, the ball will come darting towards home plate. It is your job to be ready with your finger on the space bar to hit the ball!

Swinging too early or too late will cause you to swing and miss, resulting in a strike. And if you swing *juuuust* barely too early or late, you could hit the ball foul. So, make sure you swing on time!

Menu

You can press the Menu button in the bottom right with your mouse. That will give you the option to resume or quit the game.



And that is *all* you have to do! Hit the ball, have fun, PLAY BALL!!!

