

Forum:[Hack Forums](#)

Thread: [Nought ++ | JavaFX Game](#)

+Haze - June 29, 2015, 6:33 am

[Video: <https://www.youtube.com/watch?v=ytrL009jq5s>]

Nought++ is an enhanced version of the traditional noughts and crosses game. This game was developed in JavaFX.

The home page is where the user can change their image and name, view the about page and the recent scores page.

The main home screen looks like this.

Spoiler [\(Click to View\)](#)

This is the recent scores where you can view all of the past games you've played.

Spoiler [\(Click to View\)](#)

Finally, here's the main game scene.

Spoiler [\(Click to View\)](#)

Here's the GitHub link to the game..

<https://github.com/PlusHaze/NoughtPlusPlus>

Please, I've made this game from first principals and it's the first game ever I've ever coded, and also this is one of my first proper JavaFX applications, so if anyone could give me feedback on how to improve the code, I'd really appreciate it.

Note: The total amount of lines of code was around 2.5 - 3k so it's not just any 100 line shitty game you see on YouTube. I designed this game in a fully OOP manner, and I've made the game such that regardless of how big the grid is, the game will ALWAYS check it correctly, apart from the last part of the check which I cut short because I got pissed off.

Credits:

<https://www.youtube.com/watch?v=hpcpCGwPep> -For the iOS type transition I used
<https://hackforums.net/showthread.php?tid=4879295>

csgo_player - June 29, 2015, 6:35 am

Nice work, what algorithm does the AI use?

+Haze - June 29, 2015, 6:52 am

(Jun 29, 2015 06:35 AM)csgo_player Wrote: [\[CITE\]](#) Nice work, what algorithm does the AI use? Thanks :),

The computer has no choice but to try the good ole bruteforce method. It first makes a copy of the board behind the scenes, it then tries each move and if a move generates a WIN it will add it to a list, it also does the same thing with the player 1's character and logs everything.

It then checks both of the results at the end, and it prioritizes winning over blocking the user.

Here's the folder that contains the main logic for the game, including the computer checking.

Look at the ComputerPlayer.Java and GridPaneLogic.Java in particular.

<https://github.com/PlusHaze/NoughtPlusPlus/tree/master/Nought%2B%2B/src/game/models/logic>

Reval - June 29, 2015, 7:16 am

Very nice work +Haze!

I was planning to code something similar using Swing, but I think it's time to start learning and working with JavaFX.

WildeThing - June 29, 2015, 7:32 am

Looks great, well done.

If you're up for a little bit of fun, you could actually program the game board into a custom JavaFX component and this will allow you to import it into scene builder and use it everywhere (you'd just need to write the methods for computer playing and picking stuff etc.). I use custom components on most projects since they allow me to prototype and generate similar things again and again. This suggestion does not imply that I'd class a game panel as a standard components of any sort but it's a fun thing to use as an example to learn custom components (I used a search engine result panel as mine when learning - yawn).

I hope this inspires more people like Reval to pick up JavaFX as a standard around here since it'd make some fantastic HF-ish desktop tools.

+Haze - June 29, 2015, 7:53 am

(Jun 29, 2015 07:16 AM)Reval Wrote: [\[CITE\]](#) Very nice work +Haze!

I was planning to code something similar using Swing, but I think it's time to start learning and working with JavaFX.

Thank you, I appreciate it.

I would 100% recommend anybody interested in Java to go towards JavaFX. It was 100% worth my time and effort.

And there's lots of tutorials and help for it on the internet.

(Jun 29, 2015 07:32 AM)WildeThing Wrote: [\[CITE\]](#) Looks great, well done.

If you're up for a little bit of fun, you could actually program the game board into a custom JavaFX component and this will allow you to import it into scene builder and use it everywhere (you'd just need to write the methods for computer playing and picking stuff etc.). I use custom components on most projects since they allow me to prototype and generate similar things again and again. This suggestion does not imply that I'd class a game panel as a standard components of any sort but it's a fun thing to use as an example to learn custom components (I used a search engine result panel as mine when learning - yawn).

I hope this inspires more people like Reval to pick up JavaFX as a standard around here since it'd make some fantastic HF-ish desktop tools.

Thank you.

You know after a certain point while coding the game, I realized why Game engines are used to develop games ? . I mean this is a simple basic game so it shouldn't matter, but next time if I would look into game engines. I was going to make the board a custom component, but I wanted it to be dynamic, I wanted the board size to change at runtime as I wish. So if I wanted 7x7 grid or 2x2 then I should do that with ease.

It was lots of fun to code this and I really hope it inspires other devs to start using JavaFX. I still got more JavaFX work to release on here too. The amazing thing is that I haven't even styled anything with CSS (properly), so if I did then woah!.

Reval - June 29, 2015, 7:56 am

(Jun 29, 2015 07:53 AM)+Haze Wrote: [\[CITE\]](#) Thank you, I appreciate it.

I would 100% recommend anybody interested in Java to go towards JavaFX. It was 100% worth my time and effort.

And there's lots of tutorials and help for it on the internet.

Does it work fine on Eclipse Luna now? I tried to setup everything some time ago and I had no success.

+Haze - June 29, 2015, 7:58 am

(Jun 29, 2015 07:56 AM)Reval Wrote: [\[CITE\]](#) Does it work fine on Eclipse Luna now? I tried to setup everything some time ago and I had no success.

I don't really know, I use IntelliJ Idea for JavaFX. I see no reason why it shouldn't work on Eclipse

MrOrang - June 29, 2015, 8:30 am

Nice program man. You did use the `AlertBox` or something class for the alerts right? It was added in one of the last Java updates wasn't it?

+Haze - June 29, 2015, 9:06 am

(Jun 29, 2015 08:30 AM)Looka Wrote: [\[CITE\]](#) Nice program man. You did use the `AlertBox` or something class for the alerts right? It was added in one of the last Java updates wasn't it?

Uhm yeah, the `AlertBox` class was just a wrapper to the `Alert` class. My motivation to do that was because I came from a C# background, in C# we were able to do

```
MessageBox.Show();
```

and with JavaFX one they just make you do everything yourself so I just created a wrapper class.

Here;

<https://github.com/PlusHaze/NoughtPlusPlus/blob/master/Nought%2B%2B/src/game/models/misc/AlertBox.java>

Is that bad? Should I not have done it that way?

JavaProfit - June 29, 2015, 10:13 am

Nice job +Haze! The lack of final variables disturbs me...Just kidding, it's a good program.

+Haze - June 29, 2015, 10:21 am

(Jun 29, 2015 10:13 AM)Systemic Wrote: [\[CITE\]](#) Nice job +Haze! The lack of final variables disturbs me...Just kidding, it's a good program.

Thanks dude!

I was hoping you commented, you seem like one of the members here who actually know what they're doing you know.

Anyway, yeah this final variable thing weirded me out when I saw other people on StackOverflow and Oracle using it. I thought it was strange, see I came from a C# background and I never learnt to declare a constant/final everywhere?

When do I declare it as final? Is it only when I don't intend to change it? Why declare something as final when its scope is only in a method?

JavaProfit - June 29, 2015, 11:30 am

(Jun 29, 2015 10:21 AM)+Haze Wrote: [\[CITE\]](#) When do I declare it as final? Is it only when I don't intend to change it? Why declare something as final when its scope is only in a method?

Exactly. There's [a good question on StackOverflow](#) that says the same thing.

That modifier makes your code more expressive of how it's supposed to function, in my opinion.

When I started aggressively/liberally using final to describe all members and classes that I shouldn't extend, it looked a little strange...After getting used to it, it just makes sense and solidifies (almost literally) what your program does and will do in the future.

For example, some libs have made their implementations final because there's no purpose of extending them or implementing more. (I personally don't always like that, but you can always bytecode inject if you really need to extend a final class).

quick edit: Most people don't make their method parameters final, and that's usually okay.

MrOrang - June 29, 2015, 11:32 am

(Jun 29, 2015 09:06 AM)+Haze Wrote: [\[CITE\]](#) Uhm yeah, the AlertBox class was just a wrapper to the Alert class. My motivation to do that was because I came from a C# background, in C# we were able to do

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MessageBox.Show();
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Here;

<https://github.com/PlusHaze/NoughtPlusPlus/blob/master/Nought%2B%2B/src/game/models/misc/AlertBox.java>

Is that bad? Should I not have done it that way?

Nah that's not bad lol. In Swing there was a class named JOptionPane and you could just do a message box like this:

```
Code JOptionPane.showMessageDialog(null, "your txt") ;
```

The alert class is something for JavaFX

+Haze - June 29, 2015, 11:40 am

(Jun 29, 2015 11:32 AM)Looka Wrote: [\[CITE\]](#) Nah that's not bad lol. In Swing there was a class named JOptionPane and you could just do a message box like this:

Code JOptionPane.showMessageDialog(null, "your txt") ;

The alert class is something for JavaFX

I genuinely think that the original JavaFX were just lazy. I mean, wouldn't it make sense for them to implement something like JOptionPane.showMessageDialog(), instead of forcing programmers their own wrapper class.

Either way making your own wrapper class isn't really too much of a hassle though

(Jun 29, 2015 11:30 AM)Systemic Wrote: [\[CITE\]](#) Exactly. There's [a good question on StackOverflow](#) that says the same thing.

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For example, some libs have made their implementations final because there's no purpose of extending them or implementing more. (I personally don't always like that, but you can always bytecode inject if you really need to extend a final class).

quick edit: Most people don't make their method parameters final, and that's usually okay.

Hmmm that was an interesting read, I understand the concept. Using final acts as a red light to you and other programmers to let them know not to modify what you've written and to help understand your intentions.

I will most definitely work on it though, I'll try and get into the habit of using final. You see the most difficult thing for me is juggling all these programming language I know. I always have to adhere to the coding convention of each. E.g. VB, C# PHP and Java. It's quiet a task.

Thanks though. I'll take your advice onboard.

WildeThing - June 29, 2015, 11:46 am

(Jun 29, 2015 07:56 AM)Reval Wrote: [\[CITE\]](#) Does it work fine on Eclipse Luna now? I tried to setup everything some time ago and I had no success.

Easy peasy:

<http://www.eclipse.org/efxclipse/install.html#for-the-lazy>

I've always used Eclipse for JavaFX. Just install that, make sure you've got JDK 8 and then boom, New Project -> JavaFX Project -> boom.

clark.dll - June 29, 2015, 12:42 pm

I'm going to get download this as soon as I get home! It looks awesome Haze, good job.

Update:

:/

Lol this is sick man, great work. Looks like a lot of time and effort went into this bad boy.

Kroos - June 29, 2015, 2:45 pm

This looks pretty good, Haze. Watching the video that AI could do with being a little bit smarter, there are chances where it can win but does something different. As well as the menu: the picture loads to fast and looks out of place, it should roll in with the side bar. Other than that, good job!

+Haze - June 29, 2015, 3:04 pm

(Jun 29, 2015 02:45 PM)Kroos Wrote: [\[CITE\]](#) This looks pretty good, Haze. Watching the video that AI could do with being a little bit smarter, there are chances where it can win but does something different. As well as the menu: the picture loads to fast and looks out of place, it should roll in with the side bar. Other than that, good job!

The problem with the image was that for some odd reason, it doesn't load with the rest of the menu bar. I have no idea why it behaved like that and I just left it.

As for the AI mechanisms, I really wanted to make it smarter but there was a simple problem. I initially designed the first prototype of this application to allow the user to even use a custom grid size, therefore this meant that I had to code my application to be dynamic. Hence why the code I use to check the grid is dynamic and works regardless of the grid size. This works fine, but when checking a grid in a parallel motion, for example, 4x4, it was VERY VERY tricky to write code that was able to dynamically check it in this direction.

Spoiler [\(Click to View\)](#)

I found it a pain to get that to work , I got half of it to work, but by that time I realised that it took code that was just difficult to read and maintain and thus I scrapped it and resorted to checking it in a cheap way for a 4x4 grid.

Spoiler [\(Click to View\)](#)

I really wanted it to work but it pissed me off so much so I resorted to entering the coordinates manually which I didn't want to do. the code to the version I didn't use is still in the code,

<https://github.com/PlusHaze/NoughtPlusPlus/blob/master/Nought%2B%2B/src/game/models/logic/GridPaneLogic.java>

Go all the way to the bottom to see what I tried to implement.

So, if I were to make the AI smarter then it meant that I'd have to write a FUCK ton of code that works in all situations, also for the AI to be smarter it would produce an n factorial (n!) type solution. Because it would need to have tried every single possible solution. For a 3x3 grid it's $(3 \times 3) = 9$, 9 factorial is 362880. That's the many possibilities of moves that could be made. If a 3x3 is that much, I just thought fuck it, that's overkill for a simple game that no one will probably play.

Anyway thanks for taking interest in my thread. I appreciate it :D.... If you have any ideas on how I could improve this other than the Menu bar thing then I'd appreciate it.

(Jun 29, 2015 12:42 PM)ClarkTheCoder Wrote: [\[CITE\]](#) I'm going to get download this as soon as I get home! It looks awesome Haze, good job.

Update:

Lol this is sick man, great work. Looks like a lot of time and effort went into this bad boy.
Thanks Clarky :D I appreciate it fam

JershDervis - June 30, 2015, 3:43 am

Looks very nice, makes me want to learn JavaFX as it seems to allow a lot more functionality than swing. Good job OP.

+Haze - June 30, 2015, 12:23 pm

(Jun 30, 2015 03:43 AM)JershDervis Wrote: [\[CITE\]](#) Looks very nice, makes me want to learn JavaFX as it seems to allow a lot more functionality than swing. Good job OP.

Thanks, you should definitely learn JavaFX :D

- I've got more to release too.

Sparta - *June 30, 2015, 11:57 pm*

Cool stuff. Never used JavaFX (I prefer making my own effects for GUI and UI for games and other projects) but it looks great regardless.

I saw you purposely lose in the demo video though. You should add a multiplayer mode and high scores as a side project.

+Haze - *July 1, 2015, 1:57 pm*

(Jun 30, 2015 11:57 PM)Sparta. Wrote: [\[CITE\]](#) Cool stuff. Never used JavaFX (I prefer making my own effects for GUI and UI for games and other projects) but it looks great regardless.

I saw you purposely lose in the demo video though. You should add a multiplayer mode and high scores as a side project.

I recorded the video at 4am in the morning, so that should explain that (look at the timestamp on the bottom right) ;). But yeah I did kinda intentionally let it win one round in the 4x4 grid setting. The thing with 4x4 grid is that is easier for either players to win if they connect 3, but when I changed the setting to connecting 4 then it was impossible for either players to win and thus a boring game aha
But 9/10 the computer genuinely beat me

I did add a high score, and I initially made this multiplayer but it wasn't too good so I left it out..

Thanks tho :D

CoolMaster123 - *July 3, 2015, 6:53 pm*

Sexy game looking nice :)

I suck at it though

Zbogus - *July 4, 2015, 11:34 am*

I really like the design. I am used to using swing which makes it look like my programs are automatically shit. Definitely going to look into JavaFX.

WildeThing - *July 4, 2015, 2:57 pm*

(Jul 4, 2015 11:34 AM)Zbogus Wrote: [\[CITE\]](#) I really like the design. I am used to using swing which makes it look like my programs are automatically shit. Definitely going to look into JavaFX.

Not necessarily. Try out setting the UIManager's look and feel to the system's default or download webLaf and use that to style your programs.

+Haze - *July 8, 2015, 1:49 pm*

(Jul 3, 2015 06:53 PM)CoolMaster123 Wrote: [\[CITE\]](#) Sexy game looking nice :)

I suck at it though

Ahah thank mate.

(Jul 4, 2015 11:34 AM)Zbogus Wrote: [\[CITE\]](#) I really like the design. I am used to using swing which makes it look like my programs are automatically shit. Definitely going to look into JavaFX.

Thanks man :) and yeah you should look into JavaFX.

Jopper - *July 29, 2015, 4:31 pm*

Nice game! :)

Consider implementing a magic square approach for the AI. It would make for a fun challenge.

+Haze - July 29, 2015, 4:41 pm

(Jul 29, 2015 04:31 PM)Jopper Wrote: [\[CITE\]](#) Nice game! :)

Consider implementing a magic square approach for the AI. It would make for a fun challenge. Not quiet sure what you mean by a magic square. Mind explaining? :)

Snoweyes - July 30, 2015, 6:04 am

Looks really cool! I might try out JavaFX myself aswell as it reminds me a lot of WPF (.NET). The usage is so simple but yet very effective.

Warren Buffett - July 30, 2015, 10:56 pm

Didn't read the OP but are you willing to make this open source?

+Haze - July 30, 2015, 11:00 pm

(Jul 30, 2015 10:56 PM)Warren Buffett Wrote: [\[CITE\]](#) Didn't read the OP but are you willing to make this open source?

It already is. All my public releases are open source.

<https://github.com/PlusHaze/NoughtPlusPlus>

Go to the

/Nought++/src/

folder for the source

+Haze - July 30, 2015, 11:22 pm

(Jul 30, 2015 11:07 PM)Yani Wrote: [\[CITE\]](#) This looks really nice. Good job.

Thanks man much appreciated xD

clark.dll - July 31, 2015, 5:31 pm

I'm glad to see that you've taken my idea (not to mention my source code) and ran with it! It's okay lol.. that's why I gave it to you.

hk_Reborn - March 4, 2016, 12:10 pm

Thank you for the share of this game made in Java.

SIM-1964408 - March 4, 2016, 7:11 pm

When I first read I thought it said "Notepad++" and was about to cry lol. Good job on the game though! Looks clean : P

ZenLove - March 15, 2016, 11:45 am

Looks good but the AI is a bit poor. Maybe make 3 difficulty settings,

- 1 - easy - AI generates random moves
- 2 - medium keep your old algorithm
- 3 - hard, an AI which is impossible to beat (easier than it sounds)

other than that, good work!!

0x42434e - March 16, 2016, 9:45 pm

Very nice.

Now it is time to make pinball ;p!