putianyi888 Inbox Alerts **Forums Members** Home Search... Mark Forums Read Search Forums Watched Forums Watched Threads New Posts For issues you find with the Switch and Console releases, please follow this link and give as much detail as possible. This is the speediest way to get info to Pipeworks and get a hotfix in the works. Switch and Console Issues Mobile Issues [Project] Fully automated timer (counts up and down) with Hoiktronics Discussion in '[T-MEC] Terraria Mechanical Engineering Corps' started by DicemanX, Dec 2, 2014. Terraria - Cross-Platform Discussion Terraria Guides [T-MEC] Terraria Mechanical Engineering Corps Thread Status: Not open for further replies. Thread Tools Watch Thread I spent a little time yesterday thinking about how to link my 24 hour clock to a functional display. Inspired by ZeroGravitas' video (and liking the term "hoiktronics") I worked out a neat way of creating a count up and count down timer. Here's the video of it in action: Terraria: 1 minute in-game timer ... DicemanX Brain of Cthulhu \$ ...... Start a Conversation There should be ways of extending this to include minute displays and hour displays, but for the time being I wanted to showcase how the 7 segment display can be wired and manipulated efficiently to create 0-9 digit outputs. On top of that, it is possible to completely shut off the count up or count down so long as it is done at the start of the cycle (when the timer display reads 00). Here are pictures with and without wires: I use Skeleton statues, but they can be very easily replaced with King or Queen statues and teleporters instead of lava can be used at the end of each track. That way an NPC can be summoned to trigger the pressure plates and then be teleported back home. I should be able to compress the tracks even further and use hoiks with adjacent teeth instead of having spacing of 1 in between. I built it this way for now because I was anticipating having to use multiple wires vertically through the tracks necessitating the spacing in the pics, but since it looks as if I only need one color wire per vertical column a further compression can be achieved. So the next step is to add two additional 00-59 minute displays and integrate them with the 00-59 second display. Then it should be easy to hook it up to a 00-12 hour display with AM or PM indicator. In the meantime, I think there will be a wide variety of applications of these sorts of parallel tracks - they can be used to generate some really neat effects not even related to keeping time. Suggestions welcome as always! Last edited: Apr 29, 2015 Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWuI92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ ahamling27 and ZeroGravitas like this. 0\_0 \*speechless from the amount of awesome here\* Yup. I like Purple. **Predious** Golem DicemanX likes this. Start a Conversation Very cool - definitely a fan. Chris made something similar to go along with the scoreboard in 1.2 beta - we were gonna originally use it as a countdown clock to 1.2 release (couldn't as couldn't guarantee when steam would release the update to the second)....but I couldn't begin to tell you the design. I'll have to ask him sometime to see if he recalls - if it would be helpful. Loki Consigliere Re-Logic ZeroGravitas and DicemanX like this. Administrator Start a Conversation Loki said: ↑ Very cool - definitely a fan. Chris made something similar to go along with the scoreboard in 1.2 beta - we were gonna originally use it as a countdown clock to 1.2 release (couldn't as couldn't guarantee when steam would release the update to the second)...but I couldn't begin to tell you the design. I'll have to ask him sometime to see if he recalls - if it would be helpful. DicemanX Brain of Cthulhu I made a post about your and PowerCosmic's builds in the beta showcase: Start a Conversation http://forums.terraria.org/index.ph...ical-builds-inspired-impressed-you-most.5623/ So I'm a fan too 👫. What happened to Chris anyways? He had a lot to offer and it's too bad he no longer builds in Terraria. Speaking of score boards, here's a pic of his set-up: Reset Mechanism He posted this pic here: http://www.terrariaonline.com/threa...-builders-showcase.113402/page-3#post-2388437 Last edited: May 21, 2015 Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWuI92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ Loki likes this. Yeah, he is still around - just not on Terraria as much. Maybe someday, you never know. Our friendship wasn't ever tied to one game, of course. I wish he had finished some of the experiments he had going in the working lab he had under VooDoo. Loki There is other trivia, of course - and a list of recommendations he once made to make mechanics better....perhaps I should dig up the latter (it's somewhere in Consigliere my files, but it's over a year ago...) Re-Logic Administrator Start a Conversation DicemanX and ZeroGravitas like this. #5 Like Amazing work Mr Diceman; you amaze me how fast you're picking these things up and implementing them! That's pretty similar to a setup I was vaguely thinking about, with the hoik runs reading the 7-seg display updates at right-angles to the example link I posted you earlier. Wouldn't have thought to put teleporters in, or make it reversible... Loki said: ↑ ...experiments he had going in the working lab he had under VooDoo. ZeroGravitas The Destroyer Do you know of any good (public) sources of wiring inspiration that I don't have in my troublesome link-library yet, Loki? (Or anything that might be Start a Conversation published/de-classified?) Loki said: ↑ a list of recommendations he once made to make mechanics better Would be interesting too! I'm feeling pretty uninspired on this topic, currently. Tutorial Threads and Info DicemanX likes this. Way cool. The possibilities almost seem endless with Terraria's wiring system. 🔭 Do you think you could replace the torches with actuators and gemspark blocks? You could really make some trippy effects with this kind of control. I need something like this in my next adventure map but I don't know what to use it for. Maybe not as a timer but you could make some great flashing designs and you might even be able to create a crude display that could almost be interactive, albeit slow. ahamling27 Thanks for sharing man! Official Terrarian Start a Conversation (crude Tetris anyone?) Play my Zelda Adventure Map, now available for Mobile 1.3! DicemanX likes this. Well, I was usually the idea guy and he was the brains on the execution - so it depends on what you mean in regards to inspiration. I'll look next time I'm on my PC....and I'll ask him if he had any good ones cooking in the lab or in the prototype server. Bellagio still floors me every time I turn it on. Seriously proud of our work there - Chris is a genius. Loki Consigliere Re-Logic Administrator Start a Conversation ahamling27 said: ↑ Way cool. The possibilities almost seem endless with Terraria's wiring system. Do you think you could replace the torches with actuators and gemspark blocks? You could really make some trippy effects with this kind of control. I need something like this in my next adventure map but I don't know what to use it for. Maybe not as a timer but you could make some great flashing designs and you might even be able to create a crude display that could almost be interactive, albeit slow. 🎥 DicemanX Brain of Cthulhu Absolutely! I think the main thing to get excited about is not so much the timer display itself, which is just the tip of the iceberg, but the idea of parallel Start a Conversation tracks with vertical wires passing through and pressure plates only sending impulses down specific wires. The applications are pretty staggering from my perspective. There are some details to work out first though. Stay tuned for more - it's just starting to get good 🤲 . ZeroGravitas said: ↑ Amazing work Mr Diceman; you amaze me how fast you're picking these things up and implementing them! That's pretty similar to a setup I was vaguely thinking about, with the hoik runs reading the 7-seg display updates at right-angles to the example link I posted you earlier. Wouldn't have thought to put teleporters in, or make it reversible... 📸 The reversibility was a happy accident - I initially had a switch at one position which caused an upward count (from 0-9 seconds - I started with one digit first) but then moving the switch higher caused a reverse countdown. I seems I accidentally learned how wire length can control impulses. Controlling the tens digit was a little tougher - counting up was easy, but counting down wasn't. It required an activation of the topmost track to change the 0 to a 5 to coincide with the 0 changing to a 9 in the ones column, so it needed to be delayed by 1 second. Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWuI92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ DicemanX said: ↑ so it needed to be delayed by 1 second. Hence the 3rd, little, skeleton brail-rail? ZeroGravitas Talking of which, now my brain's spooled back up a little... Critique!: The Destroyer • You could use waist-high bottom hoiks to shorten the actual skeleton runs by a factor of 2. Plates will still fit underneath just fine. Start a Conversation • If it were me, I'd have tried to have used a single skeleton statue per block with an up hoik to feed the row readers, and the timers would then actuate teeth to select the line to be read. This would add a little extra lag, and possibly be less robust and more fiddly, but possibly worth it for a quieter, teleporter-free life... • Incidental thought: you could equally have placed the plate tracks vertically along up-hoiks. Might be a useful re-orientation in future, possibly save space or make wiring easier. • If using NPCs in future, you should totally drop them down a chute at the end of each row, into a hot-tub oasis retreat, with bubble machine and free drinks, where they can wait in style for their next call to service.... • Obviously you can't pause, reset or reverse that design mid-count, which I hadn't realised immediately, but we'll let you off with that for now. 👺 Chris's bird powered display driver is pretty compact there. It shows quite a few hints at the subtleties of bird AI too (of which I saw some reaaally weird behaviours when fiddling with them last night; they almost behave like wave functions under certain conditions...). Loki said: ↑ so it depends on what you mean in regards to inspiration. Well, ideas for some purpose for a new machine are always welcome (Diceman here tends to chew through those rather quickly... 👹 ), but I guess I was talking mostly about posibile improvements/additions for the wiring mechanics. My shopping list is pretty non-existant there atm, although having an opinion on these matters at this juncture may be irrelevant anyway. Tutorial Threads and Info DicemanX likes this. ZeroGravitas said: ↑ Hence the 3rd, little, skeleton brail-rail? Yes - it's an example of a time delay "diode" which can delay signals for any amount specified by the timer(s) used (can use a cascade of timers) and the number of hoik teeth. DicemanX Brain of Cthulhu You could use waist-high bottom hoiks to shorten the actual skeleton runs by a factor of 2. Plates will still fit underneath just fine. Start a Conversation Indeed - I mention this in the opening post 脧 . I left the spacing as is for the time being to allow for other colored wires to overlap the existing wires in case I need to. For the timer alone I would be able to make it 2x more compact. If it were me, I'd have tried to have used a single skeleton statue per block with an up hoik to feed the row readers, and the timers would then actuate teeth to select the line to be read. This would add a little extra lag, and possibly be less robust and more fiddly, but possibly worth it for a quieter, teleporter-free life... Interesting idea! I'll have to try it out although the increasing lag might get to the point of being too noticeable. You'd still need to teleport the skeleton though, right? If using NPCs in future, you should totally drop them down a chute at the end of each row, into a hot-tub oasis retreat, with bubble machine and free drinks, where they can wait in style for their next call to service.... Ah, a chute, that's a good idea! I was thinking it would take a bit of work to swap the skeleton statues with NPC statues but a chute instead of teleporters at the end of the tracks makes way more sense! It might even be possible to just leave the NPCs there because a King or Queen statue will yank those NPCs right back into the tracks anyways. Obviously you can't pause, reset or reverse that design mid-count, which I hadn't realised immediately, but we'll let you off with that for now. 餐 This can actually be set-up without too much trouble with your very own suggestion above 👫 . It would require additional structures to allow a single switch to be the off mechanism, but it can be done! I'll work on it a bit later to show how. We'll then be able to use it to shut off any timer cascade, no matter which pair of timers are on in the cascade. Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWuI92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ ZeroGravitas likes this. OK, delivering on the promise to show a way to shut off timer cascades with one flick of a switch: **|**[IMG] ☑[IMG] DicemanX The pics show the mechanism for eight 1-second timers in a cascade. The idea is to actuate a block to cause a skeleton to fall out of the hoik and hit a Brain of Cthulhu pressure plate in the lava that triggers the spear traps to kill that skeleton and to shut off both timers. Only one block is ever in an actuated state, and it is always above the pressure plate connected to the two active timers. Start a Conversation This not only means that a timer cascade can be shut off at any time, but also indicates a mechanism of storage of information. In the case of the timer, whatever number the mechanism is stopped at, it will resume next time the switch is flicked from exactly the time stored (even if the world is re-loaded). I will merge this with the timer a little later when I get the chance and record another video showing how time can be stopped and resumed using this mechanism. For the time being however, some thought might be given to other ways in which this mechanism can be exploited. EDIT: Tried linking the stop mechanism to the timer and it works beautifully - video coming soon. I need to sacrifice counting up though - now it's just a countdown timer. It can be reversed to be count up, but I haven't engineered a way to have both yet. Still, the ability to stop time and resume is far more important than having the options to count up and down I think. Last edited: Dec 3, 2014 Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWuI92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ ZeroGravitas likes this. DicemanX said: ↑ You'd still need to teleport the skeleton though, right? Not necessarily. Your teleporter mechanism makes it instant to spawn and mount the hoik, but if you pre-spawn the skeleton(s) in good time, you can have them walk through a ghost wall, into a mounting chamber ready. And it is easy to make a feedback mechanism that only hoiks up one skeleton, even if multiple ZeroGravitas are in the loading chamber. The Destroyer DicemanX said: ↑ Start a Conversation just leave the NPCs there because a King or Queen statue will yank those NPCs right back into the tracks anyways. ...aww, but they'll be bored and lonely! 👹 I still say a hot-tub is necessary.... DicemanX said: ↑ actuate a block to cause a skeleton to fall out By "fall" you mean down-hoik, I think? At least that's what it looks like will happen there (so they should hit the reset plate very quickly). I see you added spear traps to make sure of the kill, heh. You \*should\* be able to remove the extra tooth between each reset switch there too, with a little re-wiring, I should think (or cut it down to 1 tile wide, with a waist-down tooth). Sure you know all this already... But actually, I think there's a better reset mechanism possible, that only terminates the skeleton at the end of the track every time, as I was describing in a PM to you yesterday: instead of actuating a block under each bottom hoik tooth, toggle between a top hoik tooth (as default), and a bottom hoik tooth to hit a plate on the floor. It may have to be the pair of teeth on the step before each reset switch that must be actuated (I forget which step will control the skeletons height at the crucial moment). This method, I imagine, should be a lot cleaner and also more generalisable - you can then reset any arbitrary number of states consecutively, very fast, taking the same number of ticks regardless of the number of resets! Obsoleting this kind of bird reset tower... Tutorial Threads and Info ZeroGravitas said: ↑ By "fall" you mean down-hoik, I think? At least that's what it looks like will happen there (so they should hit the reset plate very quickly). I see you added spear traps to make sure of the kill, heh. You \*should\* be able to remove the extra tooth between each reset switch there too, with a little re-wiring, I should think (or cut it down to 1 tile wide, with a waist-down tooth). Sure you know all this already... 👯 DicemanX Great idea! Here's a rework of the timer incorporating your suggestions: Brain of Cthulhu **⊯**[IMG] Start a Conversation **⊯**[IMG] Works perfectly, and is a bit faster due to the removed teeth in the shut-off system. I compressed the tracks as per your previous suggestion, and I could even compress the lava to 1 block since the skeletons no longer enter completely but still get hit by the lava as they get trapped in the wall. I also tried replacing the skeleton statues with king statues and it worked perfectly as well (I replaced the lava with a pit). The shut-off system should also work with NPCs if I get rid of the lava and spear traps and let the NPCs just sit there (only part I haven't tested - if they create any problems they could be teleported away). To make the wiring simpler I could also turn the tracks on their side, as you suggested previously, and instead of hoiking skeletons horizontally I could hoik them up. I only present a single digit timer here because I realized a problem with the tens digit - if I use a cascade of 5 second timers, and I shut off the timer, the timer cascade doesn't "remember" how many seconds elapsed towards the next 5 second activation. This means that unless the timer is shut off when the ones digit is 5 or 0, the tens digit and ones digit will go out of sync. One solution would be to have a cascade of 60 1-sec timers, but that would massively inflate the shut-off system. But actually, I think there's a better reset mechanism possible, that only terminates the skeleton at the end of the track every time, as I was describing in a PM to you yesterday: instead of actuating a block under each bottom hoik tooth, toggle between a top hoik tooth (as default), and a bottom hoik tooth to hit a plate on the floor. It may have to be the pair of teeth on the step before each reset switch that must be actuated (I forget which step will control the skeletons height at the crucial moment). This method, I imagine, should be a lot cleaner and also more generalisable - you can then reset any arbitrary number of states consecutively, very fast, taking the same number of ticks regardless of the number of resets! I tested this but unfortunately I haven't been able to make a successful transition from bottom hoik to top hoik. The transition from top hoik to bottom hoik works fine, but when the skeleton moves past a bottom hoik to a waiting top hoik it gets momentarily stuck. Did you have a smooth transition in mind? If so this suggested shut-off mechanism would of course be far superior to the one I have now! Last edited: Dec 4, 2014 Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWul92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ ZeroGravitas likes this. #14 Like Returning to the original count down and count up timer, I incorporated the suggestions for compressing the tracks, so this is what it now looks like: [IMG] The Skeleton Statues can be swapped out for King Statues and the lava can be removed for an NPC-driven timer that can be left running even when far away. Next up - adding the 00-59 minute digit display, and possibly 01-12 hour display as well. DicemanX Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWul92o6zPXfw Brain of Cthulhu Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ Start a Conversation ZeroGravitas likes this. DicemanX, Dec 4, 2014 Report DicemanX said: ↑ I tested this but unfortunately I haven't been able to make a successful transition from bottom hoik to top hoik. The transition from top hoik to bottom hoik works fine, but when the skeleton moves past a bottom hoik to a waiting top hoik it gets momentarily stuck. Did you have a smooth transition in mind? If so this suggested shut-off mechanism would of course be far superior to the one I have now! Nuts. This kind of mechanism was somewhat central to programmable digital logic, in my mind. I'll have to get around to fiddling with it too, some month or ZeroGravitas other. (I did have a very smooth, fast process in mind, yeah.) If this reaches a complete impasse maybe a vertical alternative, or a complete re-think will The Destroyer present itself... Basically there need to be a way to toggle the pressing of a plate(s) without loosing any steps. Start a Conversation Tutorial Threads and Info ZeroGravitas said: ↑ Nuts. This kind of mechanism was somewhat central to programmable digital logic, in my mind. I'll have to get around to fiddling with it too, some month or other. (I did have a very smooth, fast process in mind, yeah.) If this reaches a complete impasse maybe a vertical alternative, or a complete re-think will present itself... Basically there need to be a way to toggle the pressing of a plate(s) without loosing any steps. I think we're going to have plenty of alternatives to work with! For instance, I've been a busy boy today - I've succeeded in creating a 24hr clock with full 7-DicemanX Brain of Cthulhu segment display that can be reset and stopped and started at any time 脧 . Not only that, but the clock can also be set to any starting time. I've used some of your great suggestions scattered across the two threads in constructing this beast, which almost fits entirely on one screen! I'll make a video and open a new Start a Conversation thread since the mechanics are different. Terraria Engineering - Autofarms and Hoiktronics Contraptions: https://www.youtube.com/channel/UCllYBm-\_FbqWuI92o6zPXfw Interested in Terraria Engineering? http://forums.terraria.org/index.php?social-forums/t-mec-terrarian-mechanical-engineering-corps.203/ ahamling27 likes this.

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