# narrascope@term-world:~\$ date Sun Jun 23 2024





An immersive-world game built to teach computational fundamentals to introductory computer science students using real-world concepts and objects in a digital environment.



### narrascope@term-world:~\$ prebuild





2021: What does it mean to return to the classroom (i.e. why are we <u>here</u>?)

Alden Hall 109, Allegheny College



THE **▶ friendly** ORANGE GLOW

The Untold Story of the PLATO System and the Dawn of Cyberculture

Brian Dear

THE > friendly
ORANGE
GLOW

The Untold Story of the PLATO System and the Dawn of Cyberculture

Brian Dear

But perhaps there was a way to solve [the individual learning] conundrum. Especially if the focus were more on helping the child *learn*, and less on helping the teacher *teach*... If you can't clone the teacher, then why not turn the teacher into a machine, and clone the machine.

> pg. 19

Sidney L. Pressey				
<b>1920:</b> The "Automatic Teacher," a device enshrining <u>self-pacing</u> and <u>immediate feedback</u> in self-guided learning			<b>2022</b> term-world	
:	:	:	:	
John B. Watson	B.F. Skinner	1950s -	current	
<b>1912:</b> "A book could be so arranged that only to [them] that had done what was directed on page one would page two become visible…"	<b>1954:</b> Skinner begins work on <i>The Teaching</i> of Learning	Cogniti influen (This proj Linda Flow Hayes' "Co Discovery.	vism ces pedagogy ect's referent is er & John B. gnition of )	



- > A need to offer automated, dynamic, self-paced discovery
- > Addresses demand to teach computational thinking via computational doing

Teaching and Learning with Jupyter, Barba, et al.

> pg. 21



#### Teaching to Transgress

Education as the Practice of Freedom

> K bell hooks

Engaged pedagogy does not seek simply to empower students. Any classroom that employs a holistic model of learning will also be a place where teachers grow, and are empowered by the process. That empowerment cannot happen if we refuse to be vulnerable while encouraging students to take risks.

#### PAUSE INIT DONE statement executed To resume execution, type go. Other input will terminate the job.

#### Adventure (1976/7)

SOMEWHERE NEARBY IS COLOSSAL CAVE, WHERE OTHERS HAVE FOUND FORTUNES IN TREASURE AND GOLD. THOUGH IT IS RUMORED THAT SOME WHO ENTER ARR ENVER SEEN AGAIN. MAGIC IS SAID TO WORK IN THE CAVE. I WILL BE YOUR EVES AND HANDS. DIRECT ME WITH COMMANDS OF IO R 200 RDS. (ERRORS, SUGGESTIONS, COMMARINTS TO CROWTHER) (IF STUCK TYPE HELP FOR SOME HINTS)

YOU ARE STANDING AT THE END OF A ROAD BEFORE A SMALL BRICK BUILDING . AROUND YOU IS A FOREST. A SMALL STREAM FLOWS OUT OF THE BUILDING AND DOWN A GULLY.



You are standing in an open field west of a white house, with a boarded front door. There is a swall wailbox here.

Score: Ø Moves: 2

>open mailbox Opening the small mailbox reveals a leaflet.

>read leaflet
(Taken)
"WELCOME TO ZORK!

West of House

20RK is a game of adventure, danger, and low cunning. In it you will explore some of the most amazing territory ever seen by mortals. No computer should be without one?"









Successful computer entertainments in language have tended to be about the way something quite small and unitary opens up into something very large and elaborate.

This opening up, the discovery of much in little, seems to be a fundamental resonance of human intelligence.

> Robert Pinsky: "The Muse in the Machine: Or, The Poetics of Zork," The New York Times (March 19, 1995)



- > The world has underlying, automated rules that enable players to effect changes to it (although not to the rules that grant them this ability).
- > Players represent individuals "in" the world.
- > When you do something in the world, you
  can expect feedback almost immediately.
- > The world is shared.
- > The world is persistent.

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> When you do something in the world, you can expect feedback almost immediately.



Customize the nameplate (no TODOs)
Find the Ink hidden in the couch
Print the lease
Enter the house
Open the UltraHeavyBox
Open the FragileBox
Open the SinisterLookingBox
Open the TubeShapedBox
Open the BeatUpBox

Passed 2/9 (22%) of checks for user-house-solved!

**Gator Grader:** A specifications-based grader which offers "just-in-time" achievement completion reports.

#### > The world is shared.



> An individual participating in a strong society believes that their ability to create change has worth

> Citizens who participate in such systems are fundamentally trustworthy

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> The world is shared.> The world is persistent.

#### narrascope@term-world:~\$ init >> error.log

- > Rollout: 31 August 2022
- > Result: Absolute failure
- > Root cause: Bug in custom container launcher
- > Fixed: 3 September 2022 (but it was too late)
- > Lesson: For tech and games, if it doesn't work the first time, it never works (from end-user perspective).



#### narrascope@term-world:~\$ topia









Students as citizens

Ethical, values-based challenges

Students Complete self-directed improvements

Teamwork makes up majority of assignments

#### narrascope@term-world:~\$ topia

- > Example assignments:
  - Learning to navigate file systems via "housekeeping"
  - Analyzing synthetic data about class performance
  - Developing citizen surveys about the world
  - Building power plants competing for limited resources
  - Course project which builds world objects from scratch

#### narrascope@term-world:~\$ topia

- > Supporting infrastructure:
  - In-IDE inventory system
  - World "narrator" that allows objects to "speak"
  - Pre-made formats enabling users to write custom items
  - In-folder "events" system to prevent or allow action based on "in-game" achievements



- > It requires expertise and technology to run (on-prem or in cloud); but is a great learning experience
- > It can be expensive depending on workload sizes

# narrascope@term-world:~\$ reboot -n That was so 1.0.



- > Greatly reduces costs and infrastructure maintenance
- > Models more realistic web application
- > Allows more institutions to use common services
- > Is mostly locally testable

#### narrascope@term-world:~\$ venture









Students as adventurers Grit, persistence, problem-solv ing

Challenges framed as puzzles, dungeons, etc. Maintains emphasis on collaboration via "party," "job" system narrascope@term-world:~\$ demo
Let's get a friend on the line.