Interactive Fiction and Text Generation

Lara J. Martin

Grader: Vineeth Nunna

https://laramartin.net/interactive-fiction-class

Lara J. Martin she/her or they/them

Assistant Professor

Research Interests

- Story generation/understanding
- NLP for AAC
- Speech processing & affective computing
- Cognitive modeling

Fun Fact

- I collect accents and have a list of English idioms

Icebreaker

What computer games have you been playing (and enjoying) lately?

Alternatively:
What book/TV show/etc. have you been reading/watching/etc. (and enjoying) lately?

Today’s Class

Interactive Fiction

In-Class Activity

Automated Story Generation

Course Overview

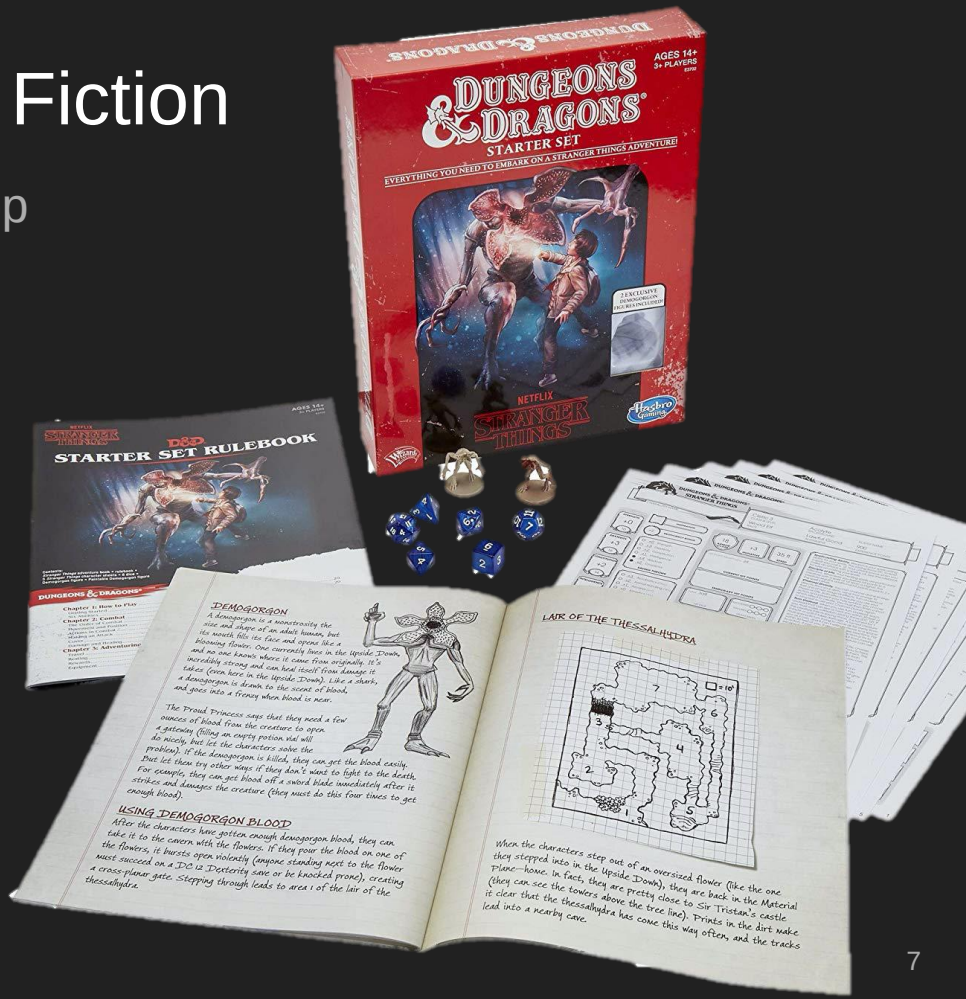
Learning Objectives

- Identify key characteristics of interactive fiction
- Develop an understanding of what it takes to make a simple IF game
- Get a brief glimpse into what automated story generation is

Choose-Your-Own Adventures & TRPGs

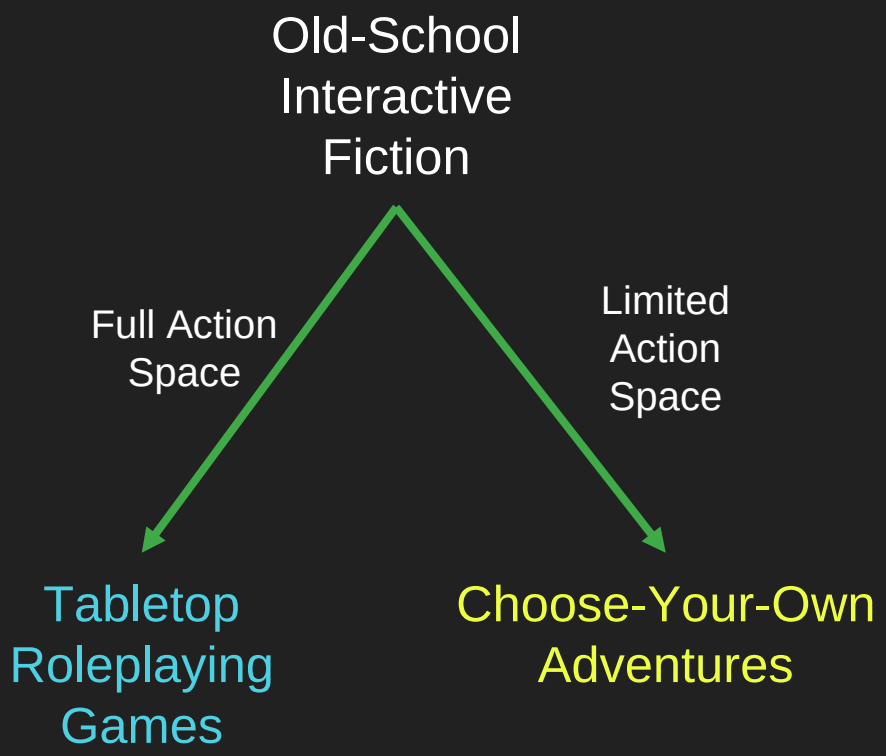
Paper & Pencil Interactive Fiction

Dungeons & Dragons is a fantasy tabletop role playing game first published in 1974.



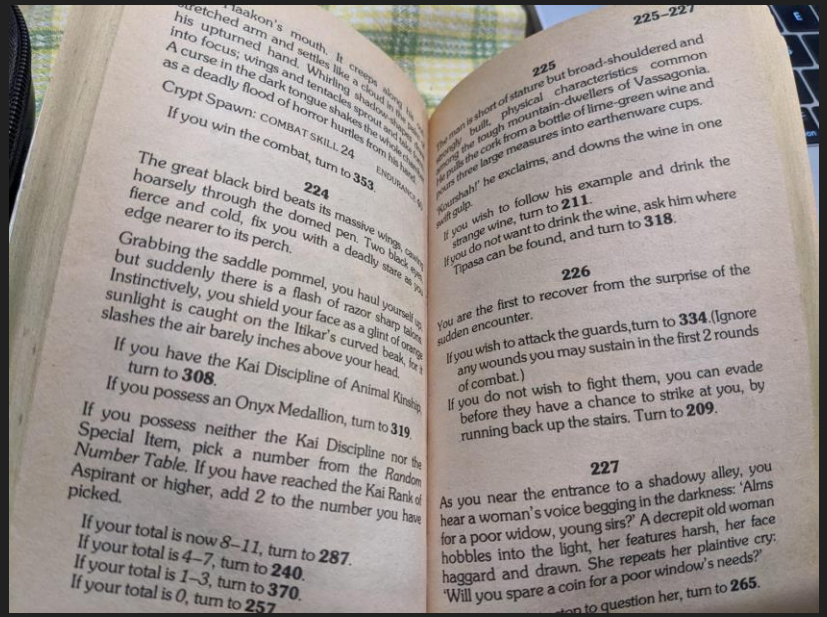
Dungeons and Dragons (D&D)

- An open world game in which the players assume the roles of characters in a story and can have them attempt any action they want.
- The game is controlled by a dungeon master, who uses tables, dice, and personal judgment to decide on the effect of a character's efforts.
- The players say what their characters do within the world of the campaign (over many play sessions).


Old-School Interactive Fiction
Full Action Space
Limited Action Space
Tabletop Roleplaying Games
Choose-Your-Own Adventures

Paper Interactive Fiction

In the late 1970s, “Choose your own adventure” books grew in popularity.



225–227

225

The man is short of stature but broad-shouldered and strongly built, physical characteristics common among the tough mountain-dwellers of Vassagonia. He pulls the cork from a bottle of lime-green wine and pours three large measures into earthenware cups.

'Yourshah!' he exclaims, and downs the wine in one swift gulp.

If you wish to follow his example and drink the strange wine, turn to **211**.

If you do not want to drink the wine, ask him where Tipasa can be found, and turn to **318**.

226

You are the first to recover from the surprise of the sudden encounter.

If you wish to attack the guards, turn to **334**. (Ignore any wounds you may sustain in the first 2 rounds of combat.)

If you do not wish to fight them, you can evade before they have a chance to strike at you, by running back up the stairs. Turn to **209**.

227

As you near the entrance to a shadowy alley, you hear a woman's voice begging in the darkness: 'Alms for a poor widow, young sirs?' A decrepit old woman hobbles into the light, her features harsh, her face haggard and drawn. She repeats her plaintive cry: 'Will you spare a coin for a poor window's needs?'

If you question her, turn to **265**.

Haakon's mouth. It creeps along his outstretched arm and settles like a cloud in the sky of his upturned hand. Whirling shadows appear and take into focus; wings and tentacles sprout and shape. A curse in the dark tongue shakes the wheels of as a deadly flood of horror hurtles from his hand.

Crypt Spawn: COMBAT SKILL 24 ENDURANCE 30

If you win the combat, turn to **353**.

224

The great black bird beats its massive wings, hoarsely through the domed pen. Two black eyes fierce and cold, fix you with a deadly stare as edge nearer to its perch.

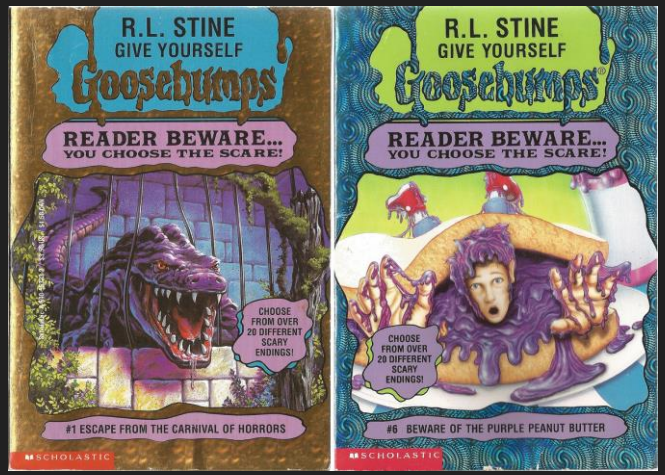
Grabbing the saddle pommel, you haul yourself but suddenly there is a flash of razor sharp talons. Instinctively, you shield your face as a glint of orange sunlight is caught on the Itikar's curved beak, for slashes the air barely inches above your head.

If you have the Kai Discipline of Animal Kinship, turn to **308**.

If you possess an Onyx Medallion, turn to **319**.

If you possess neither the Kai Discipline nor the Special Item, pick a number from the Random Number Table. If you have reached the Kai Rank of Aspirant or higher, add 2 to the number you have picked.

If your total is now 8–11, turn to **287**.
If your total is 4–7, turn to **240**.
If your total is 1–3, turn to **370**.
If your total is 0, turn to **257**.



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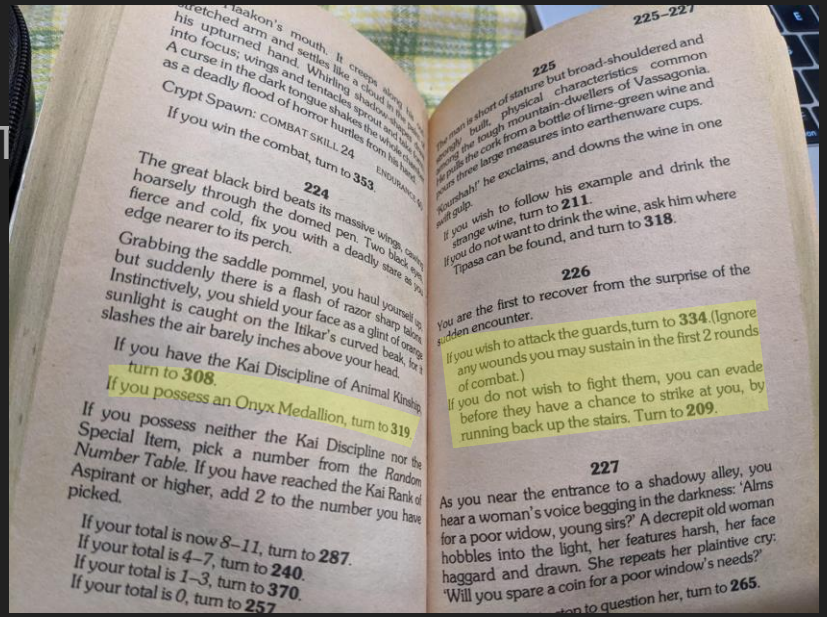

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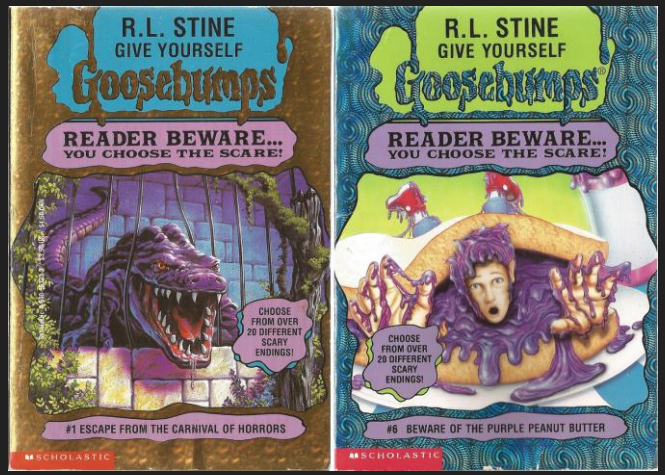
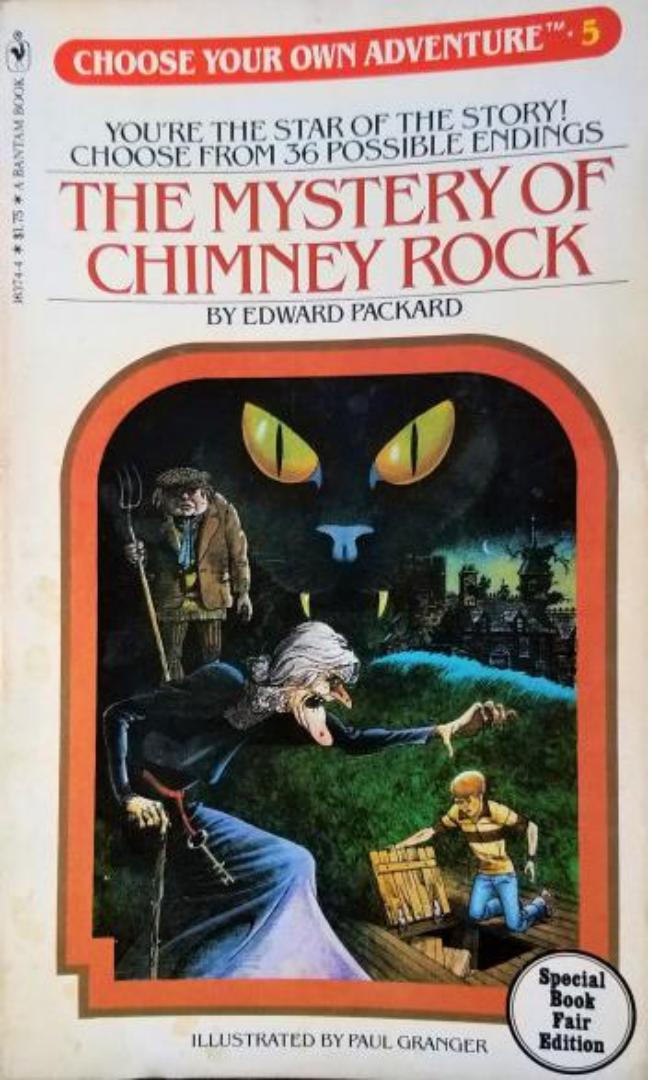
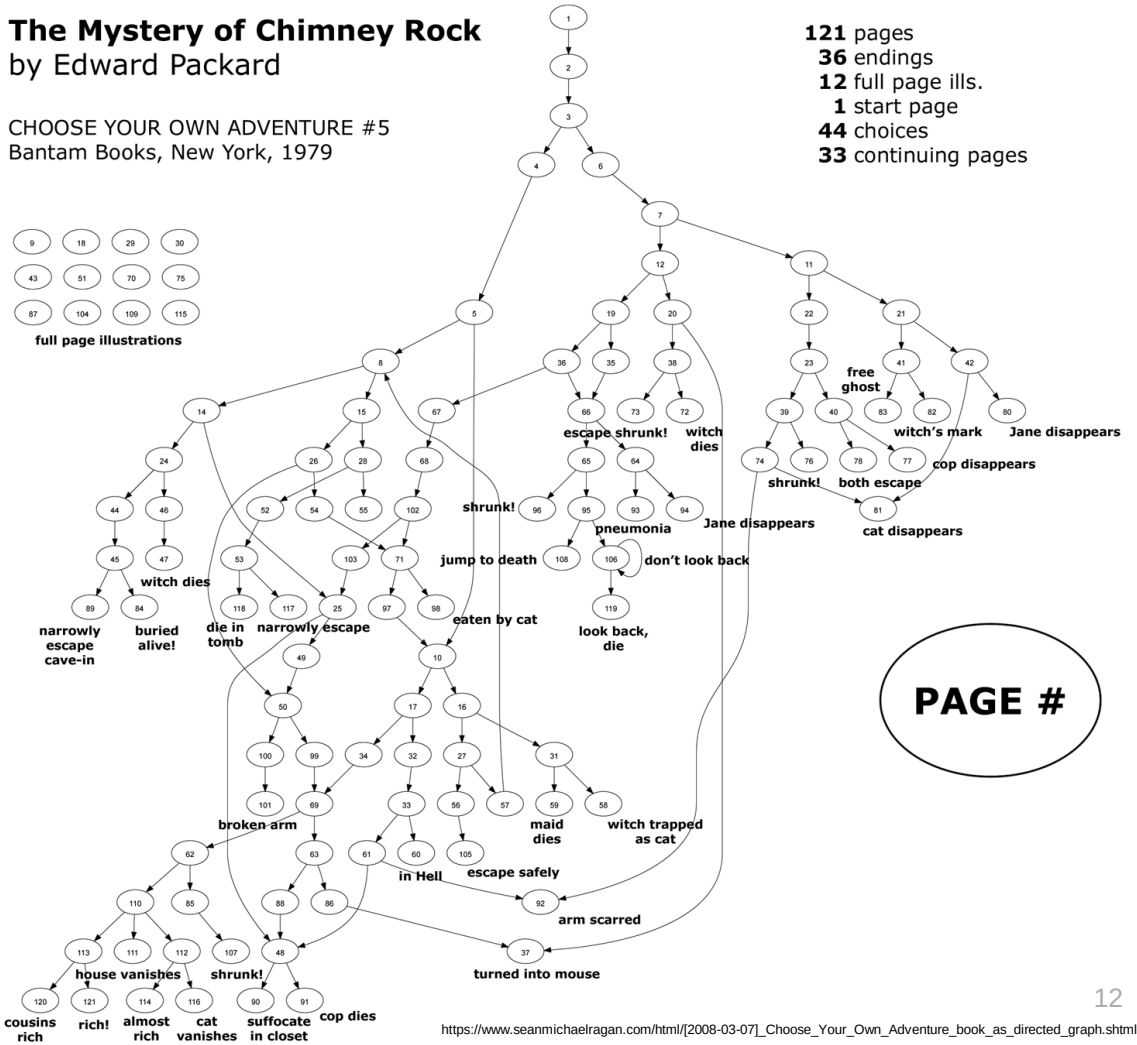




The Mystery of Chimney Rock
by Edward Packard

CHOOSE YOUR OWN ADVENTURE #5
Bantam Books, New York, 1979

121 pages
36 endings
12 full page ills.
1 start page
44 choices
33 continuing pages

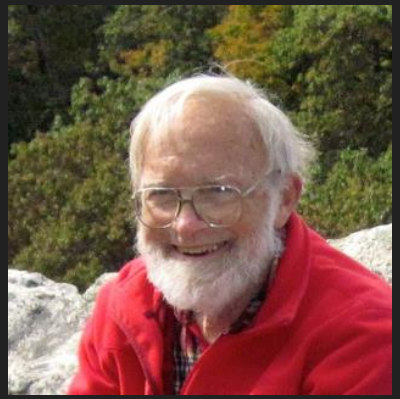


https://www.seanmichaelragan.com/html/[2008-03-07]_Choose_Your_Own_Adventure_book_as_directed_graph.shtml

The Birth of Interactive Fiction Computer Games

Colossal Cave Adventure

Made in 1975 by Will Crowther



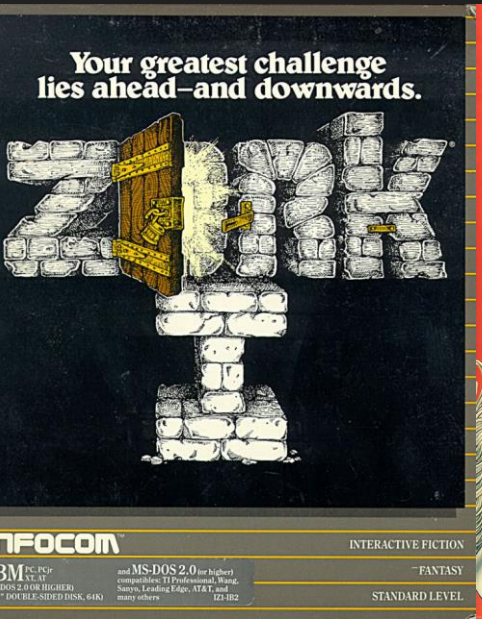
https://en.wikipedia.org/wiki/Colossal_Cave_Adventure#/media/File:Will_Crowther_Fall_2012.jpg

https://upload.wikimedia.org/wikipedia/commons/d/d8/Colossal_Cave_Adventure_on_VT100_terminal.jpg

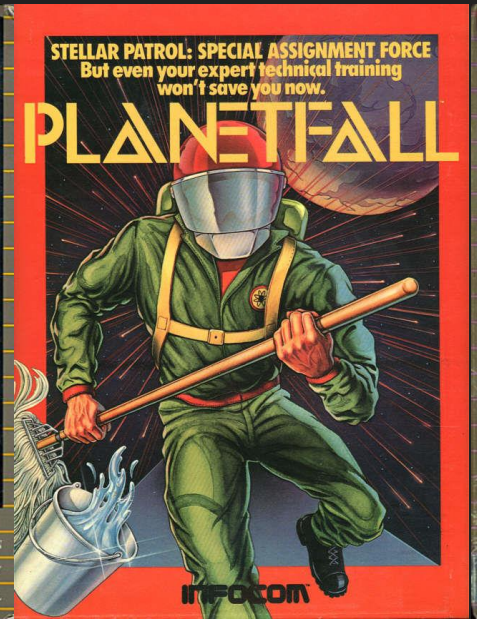
It became a thing

Interactive Fiction/Text Adventure Games were the best-selling computer games of the 1980s. A company called Infocom created the most popular titles.

1979

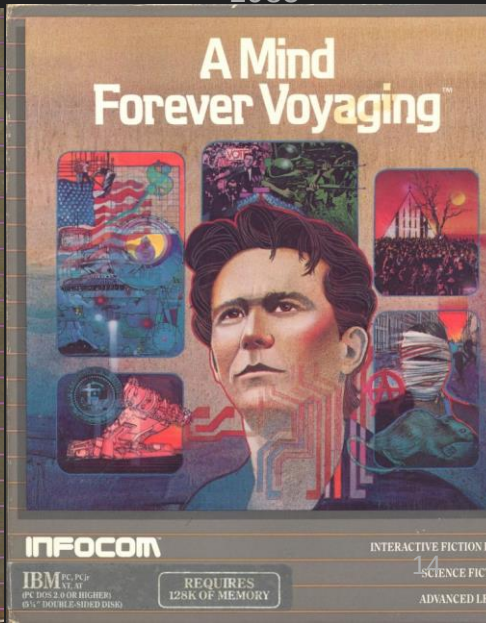


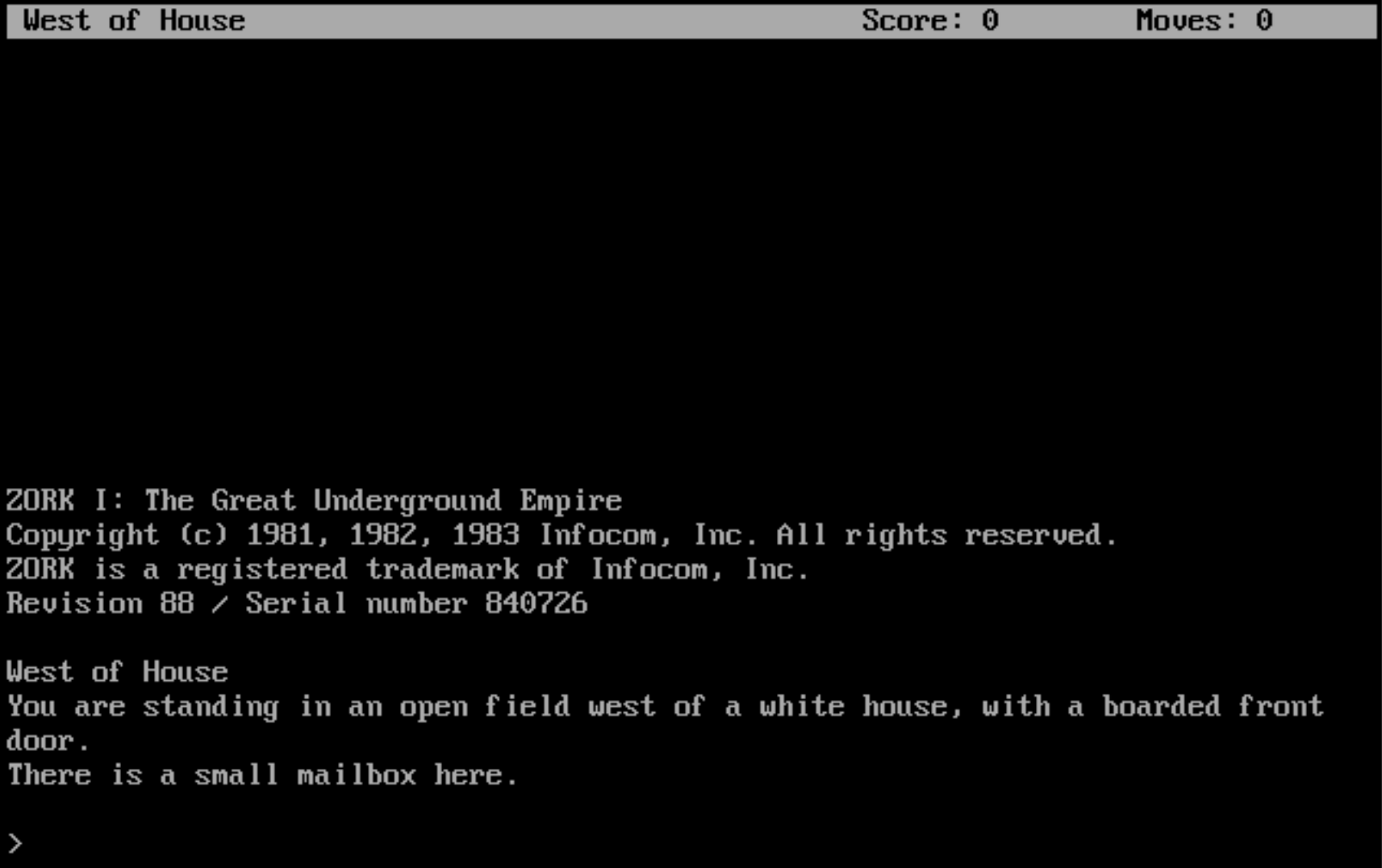
1983



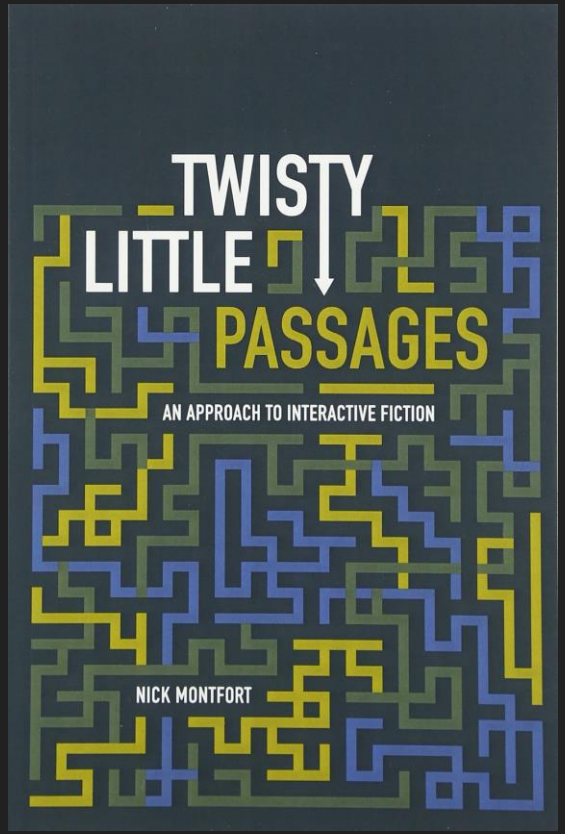
1983

1985



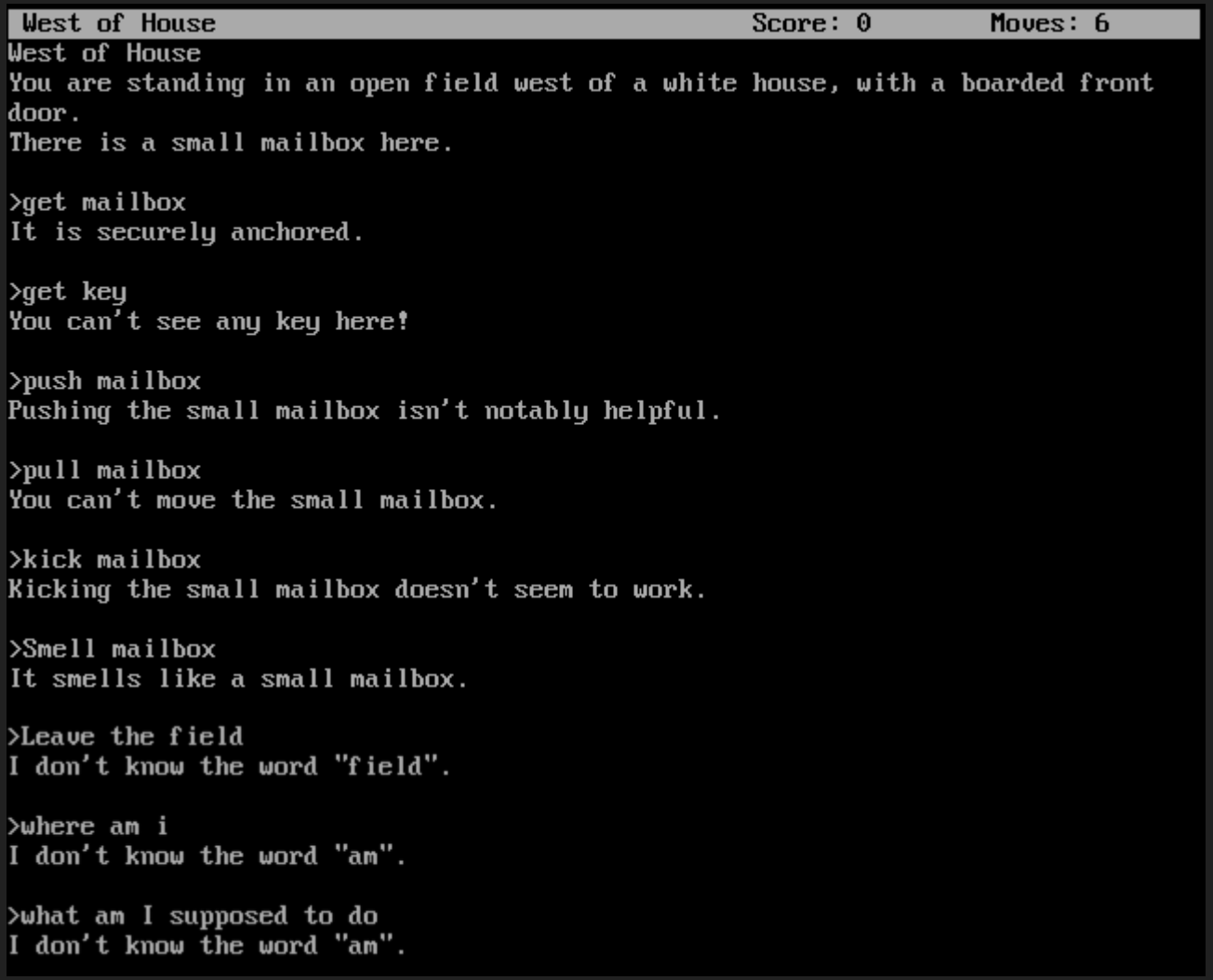

West of House
Score: 0
Moves: 0
ZORK I: The Great Underground Empire
Copyright (c) 1981, 1982, 1983 Infocom, Inc. All rights reserved.
ZORK is a registered trademark of Infocom, Inc.
Revision 88 / Serial number 840726
West of House
You are standing in an open field west of a white house, with a boarded front door.
There is a small mailbox here.
>

Components of Interactive Fiction Games



- The **parser,** which is the component that analyzes natural language input in an interactive fiction work.
- The **world model,** which is setting of an interactive fiction work.

The Parser


West of House Score: 0 Moves: 6
West of House
You are standing in an open field west of a white house, with a boarded front door.
There is a small mailbox here.
>get mailbox
It is securely anchored.
>get key
You can't see any key here!
>push mailbox
Pushing the small mailbox isn't notably helpful.
>pull mailbox
You can't move the small mailbox.
>kick mailbox
Kicking the small mailbox doesn't seem to work.
>Smell mailbox
It smells like a small mailbox.
>Leave the field
I don't know the word "field".
>where am i
I don't know the word "am".
>what am I supposed to do
I don't know the word "am".

Commands

Players input simple sentences such as “`get key`” or “`go east`”, which are interpreted by a text parser. Parsers may vary in sophistication; the first text adventure parsers could only handle two-word sentences in the form of **verb-noun** pairs.

Action Words

Farmer and Mrs. Pig certainly have a lot of children. And they are all doing something.

You just started up a game
and now you're staring at
text and a *blinking cursor*
and you *don't know what to do*!

(>|)

Don't panic kids—
Crazy Uncle Zarf is here to help you get started…

These commands are very common:

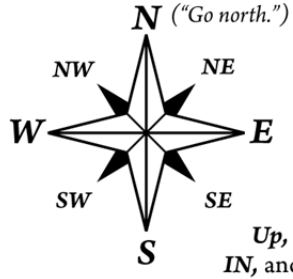
EXAMINE *it*
TAKE *it*
DROP *it*
OPEN *it*
PUT *it* **IN** *something*
PUT *it* **ON** *something*
PUSH *it*
PULL *it*
TURN *it*
FEEL *it*

When in doubt, examine more.

Does the game intro suggest **ABOUT, INFO, HELP**? *Try them first!*

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

*Try opening!



Also: ***Up, Down, IN,*** and ***OUT***

You can try all sorts of commands on the things you see.
Try the commands that make sense!
Doors are for opening; buttons are for pushing; pie is for eating. *(Mmm, pie.)*

◇◇◇◇

If you meet a person, these should work:

TALK TO *name*
ASK *name* **ABOUT** *something*
TELL *name* **ABOUT** *something*
GIVE *something* **TO** *name*
SHOW *something* **TO** *name*

Each game has slightly different commands, but they all look ***pretty much like these.***

You could also try:

EAT *it*
DRINK *it*
FILL *it*
SMELL *it*
LISTEN TO *it*
BREAK *it*
BURN *it*
LOOK UNDER *it*
UNLOCK *it* **WITH** *something*
CLIMB *it*
WAVE *it*
WEAR *it*
TAKE *it* **OFF**
TURN *it* **ON**
DIG IN *it*
ENTER *it*
SEARCH *it*

Or even:

LISTEN
SLEEP
WAKE UP
UNDO†
JUMP
PRAY
CURSE
SING

†*Take back one move — handy!*

"What if I only want to type one or two letters?"

◇◇◇◇

N/E/S/W/NE/SE/NW/SW: GO *in the indicated compass direction.*
L: LOOK *around to see what is nearby.*
X: EXAMINE *a thing in more detail.*
I: *take* **INVENTORY** *of what you possess.*
Z: WAIT *a turn without doing anything.*
G: *do the same thing* **AGAIN**

◇◇◇◇

A service of the People's Republic of Interactive Fiction: ***http://pr-if.org***

Vocabulary

- The original Zork I (1980) had a 600-word vocabulary.
- Trinity (1986) could understand stand 2,120 different words.

Early Parsers

Adventure's verb-noun parser was extremely primitive but removed **ambiguity**.

Ambiguity means that there are multiple interpretations of a sentence, which denote distinct meanings.

Lexical Ambiguity

The presence of two or more possible meanings within a single word.

"I saw her duck."

Syntactic Ambiguity

The presence of two or more possible meanings within a single sentence or sequence of words.

"The chicken is ready to eat."

Basic Linguistics

Stop words: Function words like “the” could be stripped from user input, so that “GET THE LAMP” was sent to the parser as “GET LAMP”.

Prepositions: “LOOK AT” and “LOOK UNDER” were only considered different by the parser if they were implemented as separate verbs and mapped onto different actions.

Direct and indirect objects: Some parsers recognized direct and indirect objects like GIVE [THE BOOK] TO [CHRIS].

“open the red box with the green key then go north”.

Later parsers, such as those built on ZIL (Zork Implementation Language), could understand complete sentences. They could handle more complex inputs.

Why were parsers so bad?

Limited computational resources. Computers had ≤128 KB of memory

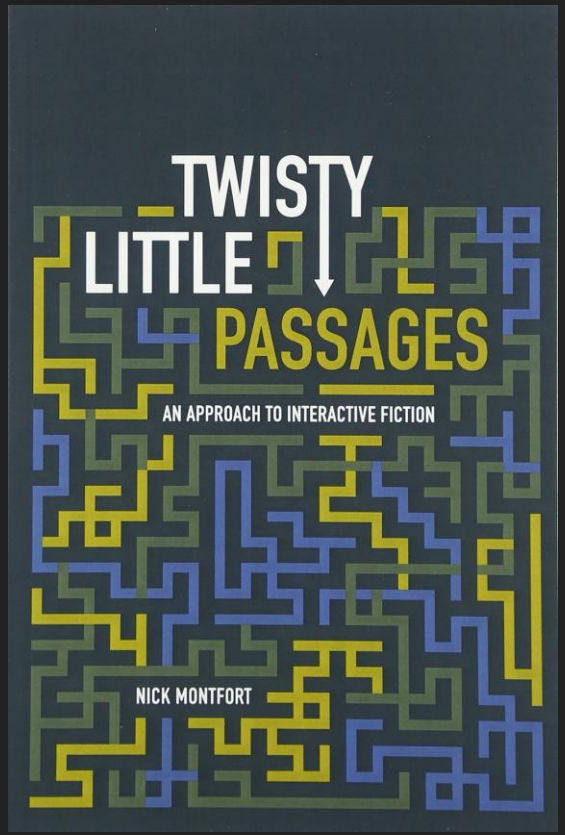
Language is difficult. There are many things that make human languages genuinely challenging for a computer to process.

Keyword-based commands. Only exact matches worked properly. No synonyms, no paraphrases.

Everything was manual. Game developers had to anticipate all possible commands, and manually code the responses.

No machine learning. This was prior to the advent of machine learning based natural language processing

Components of Interactive Fiction Games



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World Model

It represents the physical environment, and things like

- Settings or locations
- Physical objects in each setting
- The player’s character
- Non-player characters

It also represents and simulates the physical laws of the environment.

Locations

```
You are at a complex
junction. A low hands and
knees passage from the north
joins a higher crawl from the
east to make a walking
passage going west. There is
also a large room above. The
air is damp here.
```

A location in *Colossal Cave Adventure*

Navigation in a Text-based World

Cardinal Directions: Go North/South/East/West/
Northwest/Northeast/Southwest/Southeast
Also: Go Up, Down, In and Out

One letter commands were also supported:
N/E/S/W/NE/SE/NW/SW

Look/L: look around to see what is nearby

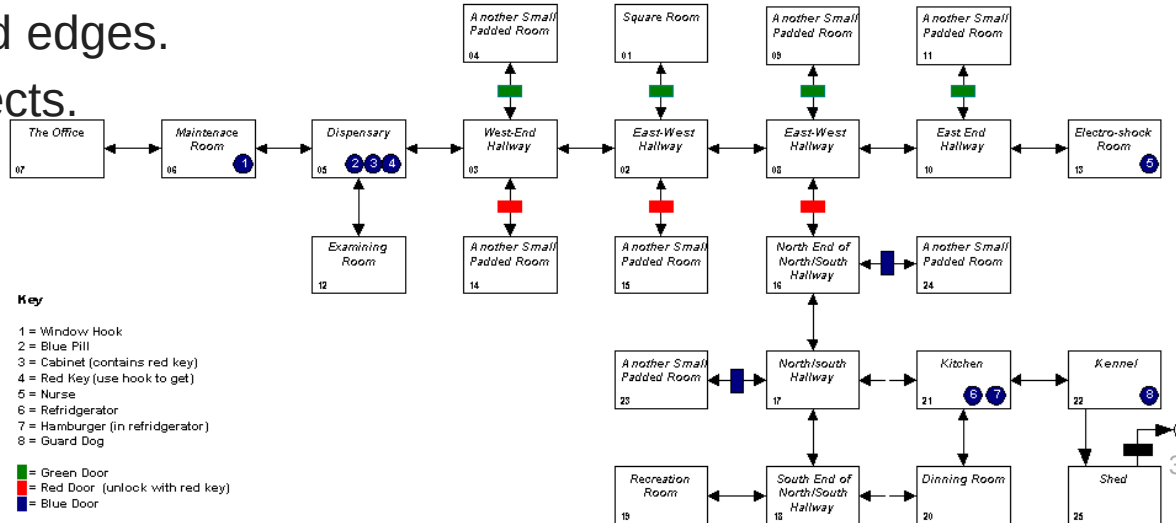
Not every direction is possible in every location.

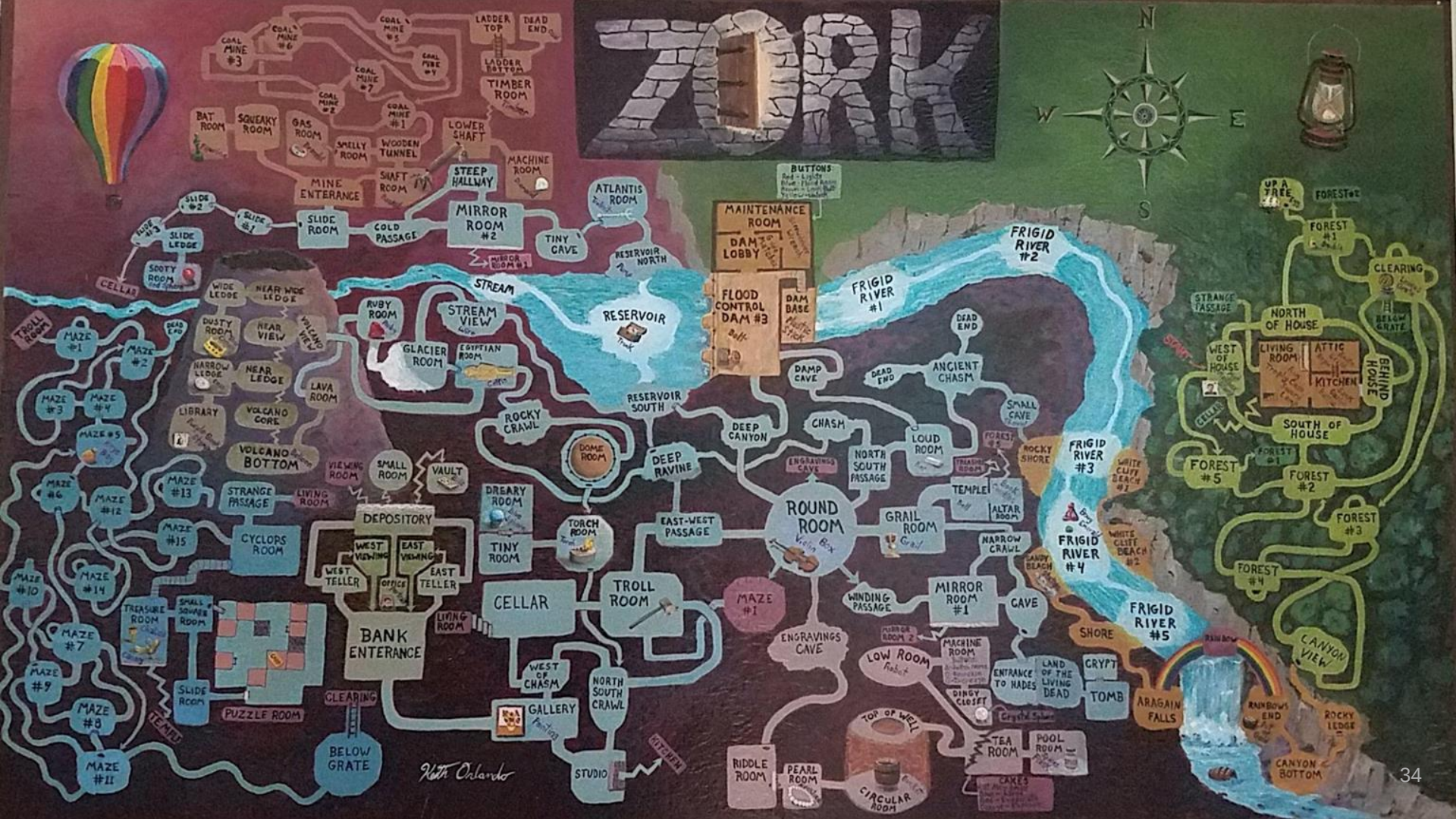
Colossal Cave Adventure

```
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.

> go south

You are in a valley in the forest beside a stream tumbling along
a rocky bed.
```

As a Data Structure

- You can implement an IF game as a directed graph.
- Each location in a node in the graph.
- Edges are connections to adjacent locations.
- Edges are labeled with the direction.
- Possible commands at a location are the labels of the outward edges.
- Locations can hold Objects.




ZORK
N
W
E
S
COAL MINE #3
COAL MINE #6
COAL MINE #5
LADDER TOP
DEAD END
COAL FIRE #4
LADDER BOTTOM
TIMBER ROOM
COAL MINE #7
COAL MINE #2
COAL MINE #1
BAT ROOM
SQUEAKY ROOM
GAS ROOM
SMELLY ROOM
WOODEN TUNNEL
LOWER SHAFT
MINE ENTERANCE
SHAFT ROOM
STEEP HALLWAY
MACHINE ROOM
SLIDE #2
SLIDE #3
SLIDE #1
SLIDE ROOM
COLD PASSAGE
MIRROR ROOM #2
ATLANTIS ROOM
TINY CAVE
SLIDE LEDGE
SOOTY ROOM
CELLAR
MIRROR ROOM #1
RESERVOIR NORTH
STREAM
RESERVOIR
BUTTONS
MAINTENANCE ROOM
DAM LOBBY
FLOOD CONTROL DAM #3
DAM BASE
FRIGID RIVER #1
FRIGID RIVER #2
UP A TREE
FOREST #1
FOREST
CLEARING
GRATE
BELOW GRATE
STRANGE PASSAGE
NORTH OF HOUSE
LIVING ROOM
ATTIC
KITCHEN
WEST OF HOUSE
BEHIND HOUSE
SOUTH OF HOUSE
WIDE LEDGE
NEAR WIDE LEDGE
DUSTY ROOM
NEAR VIEW
VOLCANO VIEW
NARROW LEDGE
NEAR LEDGE
LAVA ROOM
LIBRARY
VOLCANO CORE
VOLCANO BOTTOM
RUBY ROOM
STREAM VIEW
GLACIER ROOM
EGYPTIAN ROOM
RESERVOIR SOUTH
ROCKY CRAWL
DOME ROOM
DEEP RAVINE
DEEP CANYON
DAMP CAVE
DEAD END
ANCIENT CHASM
SMALL CAVE
CHASM
LOUD ROOM
NORTH SOUTH PASSAGE
ENGRAVING CAVE
ROCKY SHORE
FRIGID RIVER #3
WHITE CLIFF BEACH #1
WHITE CLIFF BEACH #2
FOREST #5
FOREST #2
FOREST #3
FOREST #4
TEMPLE
ALTAR ROOM
TREASURE ROOM
GRAIL ROOM
ROUND ROOM
EAST-WEST PASSAGE
NARROW CRAWL
SANDY BEACH
FRIGID RIVER #4
MAZE #1
MAZE #2
MAZE #3
MAZE #4
MAZE #5
MAZE #6
MAZE #7
MAZE #8
MAZE #9
MAZE #10
MAZE #11
MAZE #12
MAZE #13
MAZE #14
MAZE #15
TROLL ROOM
VIEWING ROOM
SMALL ROOM
VAULT
DEPOSITORY
STRANGE PASSAGE
LIVING ROOM
CYCLOPS ROOM
DREARY ROOM
TORCH ROOM
TINY ROOM
WEST VIEWING
EAST VIEWING
WEST TELLER
OFFICE
EAST TELLER
BANK ENTERANCE
CELLAR
TROLL ROOM
SMALL SQUARE ROOM
SLIDE ROOM
PUZZLE ROOM
CLEARING
BELOW GRATE
WEST OF CHASM
GALLERY
NORTH SOUTH CRAWL
STUDIO
KITCHEN
WINDING PASSAGE
MIRROR ROOM #1
CAVE
ENGRAVINGS CAVE
LOW ROOM
MIRROR ROOM 2
MACHINE ROOM
DINGY CLOSET
ENTRANCE TO HADES
LAND OF THE LIVING DEAD
CRYPT
TOMB
SHORE
FRIGID RIVER #5
ARAGAIN FALLS
RAINBOW
RAINBOWS END
ROCKY LEDGE
CANYON VIEW
CANYON BOTTOM
TOP OF WELL
CIRCULAR ROOM
RIDDLE ROOM
PEARL ROOM
TEA ROOM
POOL ROOM
CAKES
Keith Orlando

Objects

In Adventure, instead of a realistic simulation of caving, the author placed five treasures within as an incentive to explore the cave.

The player had to figure out how to get past a snake to move deeper into the cave. The player is attacked by dwarves and their treasure is stolen by a pirate.

Examine Lamp

Items represent things in the game world. Usually they are mentioned in the description of a location like:

```
You are on the dungeon stairs. From above, you can
make out some of the king’s guards talking about
current events. Someone’s left an old lamp here.

Players can inspect them with the “EXAMINE”
command.

> EXAMINE LAMP
This old lamp seems like it’s seen some use. It
ran out of oil ages ago.
```

Get Lamp

Players can pick up objects in the world, and they are added to the player's inventory with the "`GET`" command. The inventory is the set of things that the player has collected along the way.

Oftentimes, they are used to solve puzzles. For instance, you must have a lamp in your inventory in order to explore a dark cave.

To list all items that you have, you can issue the "`INVENTORY`" command (or just the letter "I").

Light lamp

Objects often have special commands associated with them. For instance, in order to solve the darkness puzzle you must say “`LIGHT LAMP`”.

Some special commands require more than one object in your inventory.

```
On the table is an elongated brown sack, smelling of hot
A clear glass bottle is here.
The glass bottle contains:
  A quantity of water.
>w
You are in the living room.  There is a door to the east
is a wooden door with strange gothic lettering, which ap
nailed shut.
In the center of the room is a large oriental rug.
There is a trophy case here.
On hooks above the mantlepiece hangs an elvish sword of
A battery-powered brass lantern is on the trophy case.
There is an issue of US NEWS & DUNGEON REPORT dated 28-J
>get sword
Taken.
>break egg with sword
You rather indelicate handling of the egg has caused it some damage.
The egg is now open.
There is a golden clockwork canary nestled in the egg.  It seems to
have recently had a bad experience.  The mountings for its jewel-like
eyes are empty, and its silver beak is crumpled.  Through a cracked
crystal window below its left wing you can see the remains of
intricate machinery.  It is not clear what result winding it would
have, as the mainspring appears sprung.
```

Object properties

Containment: Objects may have contents (the bottle can have wine in it)
Weight: Objects have weight (some objects might be too heavy to lift)
Position: An object may be in, on, or under another object

People are objects too

In Zork, a handful of living opponents thwart the adventurer: **the troll**, who stays put in a single room and serves as an obstacle; **the vampire bat**, who can carry off the adventurer; **the cyclops**, who can dine on the adventurer; and **the thief**, who wanders around the underground areas stealing items from the adventurer.

These people/opponents can be implemented as objects too. People objects often have a special command for dialogue via “`TALK TO`”.

In-class Activity: Play a Game (5 min)

https://grizel.itch.io/sentient-beings

Record your game by typing “TSTART” at the beginning.

Type “TSTOP” to download your game.

And answer these question:

1. What commands did you try that didn’t work?
2. How does this experience differ from reading a non-interactive story?

Puzzles

In most interactive fiction, puzzles (sorts of challenges or obstacles) are part of the world the player character moves through. In order to complete the IF work, the interactor must figure out how to meet these challenges.

Puzzle Solutions

The solutions may be arrived at through the player character's senses or by having the player character manipulate things in the surroundings and then observe the results to determine the workings of the world.

Most interactive fiction does not have great replay value. You cannot simply "replay" a riddle if you know its answer.

However, once you learn to play a board game, the knowledge gained from playing it once game doesn't ruin the experience of playing it again.

Zork’s diamond machine

In the coal mine, the player character finds a machine with a tiny slot in the top of it. What this machine does, and how to turn it on, is unclear.

The solution is to put some coal into the machine, and then turn on the machine using the screwdriver. This results in the coal being compressed with great force producing a diamond.

The player can act as scientist and put anything inside, then observe the results.

Guess the Verb

A few puzzles require the player “guess the verb” and perform an action that would not be obvious from the commands available. The game's parser does not understand unless the player uses a particular way to phrase the command (sometimes non-obvious).

For example, if there is a crate to be opened with a crowbar and the only way to open it is to "**pry crate with crowbar**", other actions like "**open crate with crowbar**" give a misleading response. Usually this is a deficiency in the parser.

Some games like Ad Verbum by Nick Montfort intentionally include guess-the-verb puzzles to good effect in contexts where the puzzles are explicitly about language.

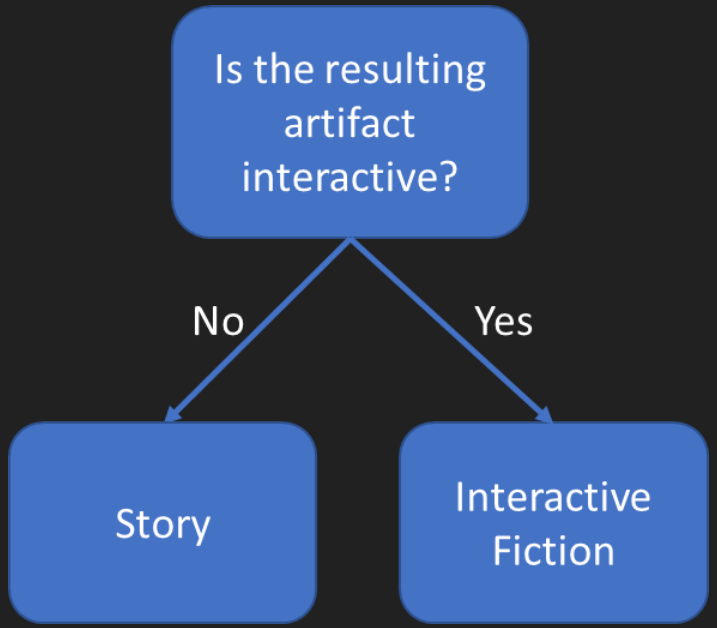
IF Summary

1. What’s the difference between TTRPGs like D&D and Choose-Your-Own-Adventure games?
2. Why were IF commands so simple?
3. What makes IF games hard to win?

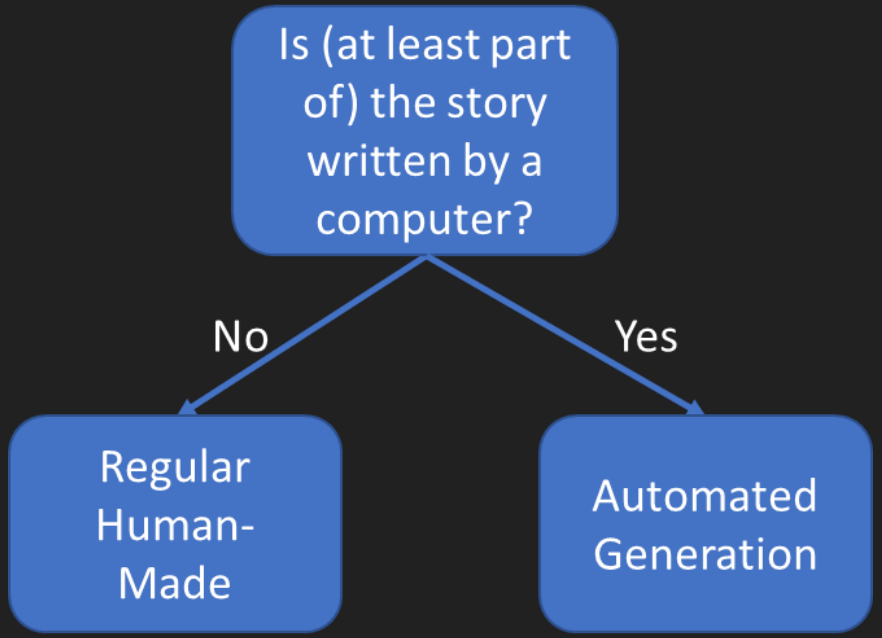
Automated Story Generation

Interactive Fiction vs Automated Story Generation

What is it?



How was it made?



Early Systems

TALE-SPIN (1977):

One day,
JOE WAS THIRSTY.
JOE WANTED NOT TO BE THIRSTY.
JOE WANTED TO BE NEAR THE WATER.

UNIVERSE (1984):

>> LIZ tells NEIL she doesn't love him
working on goal – (WORRY-ABOUT NEIL) – using plan BE-CONCERNED
Possible candidates – MARLENA JULIE DOUG ROMAN DON CHRIS KAYLA
Using Marlena for WORRIER
>> MARLENA is worried about NEIL

Common Automated Story Generation Methods

Using a neural network to generate the next, likely word. Thus, creating stories one word at a time.

More in Module 1: Neural Language Models!

Using “plot graphs” to decide which path to take (like the computer is playing a Choose-Your-Own adventure game!)

More in Module 2: Scripts and Story Structure!

Supplemental Materials

- Get LAMP (documentary): https://www.youtube.com/watch?v=LRhbcDzbGSU
- Adventuron Classroom: https://adventuron.io/classroom/
  - Tutorial: https://adventuron.blogspot.com/2019/07/video-tutorial-beginners-guide-to.html
- Action Castle (Jared Sorensen): https://www.youtube.com/watch?v=Sehaj4mw38s
- An Introduction to AI Story Generation (Mark Riedl): https://mark-riedl.medium.com/an-introduction-to-ai-story-generation-7f99a450f615
- How to Make a Text-Based Adventure: Commands and Parser: https://h2g2.com/edited_entry/A20600641
- Play some IF games on Itch.io: https://itch.io/games/tag-interactive-fiction/tag-text-based

Course Overview

Course-Long Learning Objectives

- Understanding the challenges of creating text-based games and automatically generating stories.
- Implement and appraise the value of different technologies (Neural Language Models, Dialogue Systems, Scripts, Planning, and Commonsense Reasoning) in story generation/interactive fiction playing.
- Argue for the appropriate components of a working story generation system or interactive fiction–playing system.
- Create your own story generation system or interactive fiction–playing system.

Topics

- Building a text adventure game (Module 0)
- Neural Language Models for IF world creation and story generation (Module 1)
- Story structure and cause-and-effect (Module 2)
- Planning toward a goal for IF playing and story generation (Module 3)
- Commonsense reasoning and representing knowledge in the story world (Module 4)
- Character modeling and dialog (Module 5)

Bonus material (Module 6)

- Reinforcement learning for playing IF
- Story ending prediction
- Mixed methods for story generation
- Story evaluation
- Other topics you want to know about!

Grading

Assignment	491 (undergrad)	691 (grad)
Homework 1	5%	5%
Homework 2	10%	10%
Homework 3	10%	10%
Homework 4	10%	10%
Homework 5	10%	10%
Homework 6	10%	10%
Project	30%	30%
Knowledge Checks	15%	5%
Paper Presentation	-	10%

Student Presentations

- Prepare a 10-15 minute presentation on a paper from the reading list.
- Your presentation should summarize the work and discuss the ways it’s applicable to either interactive fiction or automated story generation.
- Grading:
  - 50%: **Send me your slides at 3 PM the day before your presentation**
  - 50%: presentation to the class

How to Contact Us

- Messages on Blackboard (https://blackboard.umbc.edu/ultra/courses/_82444_1/messages)
- Email us with specific questions
  - Instructor: laramar@umbc.edu
  - Grader (only grading questions: vnunna1@umbc.edu

Office Hours

Thursdays 3:15-5 PM EST in ITE 216

Or by appointment: https://calendly.com/laramar/schedule

Homework 1

Implement a simple text adventure game in Python.

Due **9/9/24** at 11:59PM EST

Homework 2

Use LLMs to parse commands for your adventure game.

Due 9/23/24 (tentatively)

Zork, an early intractive fiction game released in 1977.

This assignment is due on Monday, September 9, 2024 at 11:59PM EST.

You can download the materials for this assignment here:

- Text Adventure Game starter code (Zip file)
- Parsely: Preview n' Play Edition (this contains the Action Castle game).
- Text from Action Castle

Homework 1: Build a Text-Adventure Game

Instructions

In this homework assignment, you will write your own classic text adventure game. This homework can be completed in groups of up to 5 people. You will implement two text adventure games. One will be a re-implementation of the **Action Castle** game, and one will be a game that you design yourself. The game that you design can be on any topic, or can tell any story of your choice. We will play the games that you design during class, and part of your grade will be awarded based on how creative/exciting your classmates think your game is.

If your team has more than 2 members, you complete extensions to keep the amount of work comparable to smaller teams.

Using our Starter code

We have provided starter code for a basic text adventure game. I recommend using Visual Studio Code for this homework. You should get started by reviewing the `HW1_Tutorial.ipynb` which introduces the concepts in our starter code.

Environment Setup

First download the zip file, then create a virtual environment and install the dependencies.

```
$ unzip IF-Class-HW1.zip
$ cd IF-Class/HW1/
$ python3 -mvenv venv
$ source venv/bin/activate
(venv) $ pip install .
```

https://laramartin.net/interactive-fiction-class/homeworks/text-adventure-game/text-adventure-game.html