ECE1786 - Final Report - *Fairytale* Alan Du, Navid Hasanzadeh Dec 12, 2022 Word count: 1993

1. Introduction

Children's tales are extremely important in child development as they improve literacy skills, communication skills, and assist with forming ideas of culture/race [1][2]. Each story contains lessons that highlight important societal values and show children what is right and wrong.

Our project, *Fairytale*, aims to allow anyone to generate a children's tale given a simple prompt, the desired genre and grade level of the story, and some core values they want to appear in the text.

We believe the most appropriate approach is through machine learning as this is a text generation task. Based on the assignments and demonstrations from class, we think using transformer models like GPT-2 and GPT-3 would be most suitable.



Figure 1. Overview of Fairytale project

2. Background & Related Work

Hierarchical Neural Story Generation [3]

This paper tackles story generation by using a convolutional sequence-to-sequence (seq2seq) model combined with multi-head gated self-attention [3]. Given a starter prompt, the model will generate a short story passage.

One limitation is that the model often repeats what it has already produced, creating similar generated text. As it is a seq2seq model, it cannot make use of pre-trained transformer models either.

Plug and Play Language Models: A Simple Approach to Controlled Text Generation [4]

This paper approaches story generation by using a pre-trained transformer model and adjusting the logits based on different bags of words [4]. Given a topic and a sentence starter, the model will generate a short passage in the topic.

One limitation of this approach is that the topics available are quite limited as they must be predefined by the implementer beforehand.

3. Data and Data Processing

We collected 1079 stories from various sources on the Internet. These texts vary from 100-500 words in length. Stories are labeled with the genre, and the grade level. Some stories are also labeled with the values present in the text. Below are the steps we used to process our data:

- 1. Clean the text
 - Remove non-UTF8 characters and excess whitespace
 - \circ Trim to under 500 words
- 2. Manually assign values present in the story
- 3. Assign genre if available or generate predicted genre using pre-trained prediction model [5]
- 4. Generate US school grade level for text
 - Calculated using average score of 8 standardized text difficulty scales.

The breakdown of the genres and number of stories in our collected dataset is shown below:

Realistic Fiction: 323 Horror: 500 Science Fiction: 179 Fantasy: 77

We also used a public dataset of 32032 plot summaries [6] in addition to our collected stories for fine-tuning. Our training and validation data split is 90 to 10 for both the datasets. Example entries from the datasets can be seen in Figure 2 and 3.

id	title	text	genre	grade	value
1	The Ant and the Chrysalis	"An Ant nimbly running about in the sunshine in search of food came across a Chrysalis that	fantasy	5	appearance,
		was very near its time of change. The Chrysalis moved its tail, and thus attracted the attention			beauty
		of the Ant, who then saw for the first time that it was alive. ""Poor, pitiable animal!"" cried			
		the Ant disdainfully. ""What a sad fate is yours!			
		While I can run hither and thither, at my pleasure, and, if I wish, ascend the tallest tree, you			

Figure 2. Sample entry from collected dataset

id	genre	text
11168	<realisticfiction></realisticfiction>	Aydın, a former actor, owns a mountaintop hotel in Cappadocia, as well as several properties which he rents out to local tenants. He leads a more idyllic life than most people around him in the region. Educated and wealthy, he spends his time writing columns for a local newspaper and researching the history of Turkish theater, of which he hopes to write a book someday. One day, Aydın and his assistant Hidayet are driving down to the village when a

Figure 3. Sample entry from public dataset

Lastly, we created 14 bags of words, which are collections of words relating to a single topic. For example, if the topic was **'Fantasy'**, that bag could include terms like **'Wizard'**, or **'Dragon'**. Each bag has 40 to 80 words. The 14 categories and some examples are shown in Appendix A. Each word is assigned a bias value, which is used by our model to perturb its logits.

Below are the steps we used to create these bags:

- 1. Collect related words to the topic
- 2. Check for duplicates and different spellings (i.e. 'wormhole' vs 'worm-hole')
- 3. Format the words (separate with commas, set to lowercase)
- 4. Save words into JSON file with bias values

An example bag and JSON file is shown in Figure 4. Additionally, due to some differences between genre labels in our 14 categories and our datasets, we modified the genre labels for some texts as such:

drama \rightarrow realistic fiction action/thriller \rightarrow horror superhero/myth/fairytale/fable/historical \rightarrow fantasy

Topic: Horror (Genre)

dark, moonlight, sinister, shadow, spooky, creaking, scream, eerie, claw, fear, ghastly, ghost, terror, hideous, haunting, grim, strange, dread, slithering, cryptic, gloomy, wailing, mischievous, spine-tingling, murky, frighten, ghoulish, chilling, lurking, scare, wicked, mysterious, phantom, unnerving, squeaking, ...

"21953": 1.4,
"8824": 1.4,
"2971": 1.4,
"26592": 1.4,
"9082": 1.4,
"599": 1.4,
"29655": 1.4,
"1126": 1.4,
"868": 1.4,
"8196": 1.4,
"41128": 1.4,
"26573": 1.4,
"3252": 1.4,
"24997": 1.4,
"459": 1.4,
"306": 1.4,

Figure 4. Example bag of words and JSON file

4. Architecture and Software

We used GPT-3 DaVinci-003 as the primary model to generate stories with a zero-shot learning approach, and a pre-trained GPT-2 model as the baseline but with fine-tuning to improve results.

To begin generation, we start with the initial prompt shown in Figure 5. The prompt consists of the given genre, grade and values. Additionally, we restrict the sentence and word length relative to the grade to generate more grade appropriate text. Lastly, we append a randomly selected story starter to the initial prompt. Our word/sentence limits can be found in Appendix B.



Figure 5. Example initial prompt for GPT-3

Figure 6 shows our generation algorithm. We feed the initial prompt into GPT-3 and append the output onto the initial prompt to get the new prompt. If the output is empty, we max the temperature parameter to increase randomness, and ask GPT-3 to generate the next word of our current story. If this still results in

an empty output, we randomly select a story filler and append it to our current story. We continue this cycle for 10 iterations at which point we ask GPT-3 to end the story.



Figure 6. GPT-3 story generation algorithm

To get GPT-3 to generate more words based on the given genre, grade, and values, we feed the associated bags of words into the model using GPT-3's logit_bias field. This allows us to perturb up to 300 of GPT-3's logits so that the probability of choosing specific tokens/words are higher. Figure 7 shows a higher level view of our pipeline.



Figure 7. GPT3 generation pipeline

5. Baseline Model

Our GPT-2 architecture is shown in Figure 8. We create an initial prompt using the given genre, grade, and values as well as a story starter. We then feed this prompt into our model, and perturb its logits using the associated bags of words.

The model was fine-tuned in two steps. First, we fine-tune it on the public dataset and the collected dataset entries without a value label. Then, we fine-tune the model on the collected dataset entries with value labels. Below is an example prompt for a grade 4 sci-fi story in this step:

"<|startoftext|> <4> <sci fi> <determination> <kindness> There was once a"

The model was fine-tuned using the AdamW optimizer. In the first step, the model was trained for 8 epochs with an initial learning rate of 1e-4. For the second step, the learning rate was 1e-5 and the number of epochs was 10. In both steps, the model with the best performance on the validation set was selected for subsequent usage and evaluation.



Figure 8. GPT-2 modified model architecture

6. Quantitative Results

6.1 Scoring Rubric and Results

We defined a scoring rubric that looks at 6 aspects of the story to evaluate our stories. It looks at the plot, grammar, flow, and how well the story captures values, genre, and grade level. Using this rubric, we scored stories from both models. GPT-3 scored an average of 94/100 while GPT-2 averaged 61/100.

GPT-3 performed well across all categories, but excelled in capturing the given genre and values, scoring almost perfect in both categories. It was also able to generate meaningful plots that flowed smoothly, creating stories that were hard to distinguish from a real person's work.

GPT-2 did decently in grammar and captured the genre somewhat, scoring 80s for both categories. However, it struggled to write coherent stories that flowed. The final result was more of a collection of words and sentences. Appendix C contains the rubric and detailed scoring breakdown.

6.2 Fine-tuned GPT-2 Results

The training curves in Figure 9 show that the model is overfitted after a few epochs in the first step. However, in the second step, we do not observe overfitting in the first ten epochs.



Figure 9. Training curves for fine-tuning GPT-2. a) first step. b) second step

Based on US grade level criterion, the results show that the model generates short and simple sentences for lower grades, while the outputs for higher grade levels are more complex. Figure 10 shows the high correlation coefficient of 0.87 between the desired grade levels and the ones generated by the model.



Figure 10. Relationship between grade level of generated stories and desired grades

7. Qualitative Results

7.1 GPT-2 Results

The fine-tuned GPT-2 outputs show that although the model learned to change the complexity of the words and sentences based on the given grade level, it performed poorly in understanding the given genre and values. In most cases, the model only used some words related to the given genre in the initial prompt, but there is no plot and structure in the generated story as shown in Figure 11. Additionally,

because we fine-tuned the model on a public dataset of plot summaries, the outputs sound more like summaries than children stories. The full stories are in Appendix D.

On the way, the **dog fell into a river**, and was found and **brought back to the dog.** ...

The dog had found the dog by the sea. ...

————Now talking about a girl and a woman? ———

The dog did not leave the dog, because that night she was in search of a place. The girl had called a woman from

Figure 11. Sample of GPT-2 text

7.2 GPT-3 Results

GPT-3 generally performed well in capturing the genre and values, as well as adjusting word and sentence lengths to match the given grade level. In Figure 12, the model is able to generate horror terms like "eerie laugh" or "wicked smile". It can also generate friendship terms like "best friends" or "bond of friendship". From Figure 13, we can see the model is able to lower the average text length for the grade 1 story, compared to the grade 6 story.



Figure 13. Samples from grade 1 and 6 GPT-3 stories

On the flip side, GPT-3 had issues continuing generation, often ending stories early. In Figure 14, the story ends twice, once in the middle and once near the end, which ruins the overall plot and flow of the story.

Beginning: In a castle, near a forest, lived a King. He loved his Queen, who was fair and kind. ...

 GPT-3 ends the story halfway through the pipeline Middle: They both lived happily ever after, their love even greater than before. ... —— Forcing it to continue creates a second end ſ End: The end. A magical tale of a love that was so strong, it could overcome ... Unclear which end is the intended ending Figure 14. GPT-3 story with multiple endings Although the use of logit biasing created more consistent results, it limited vocabulary and caused excessive repetition at times. This repetition can be seen in Figure 15 where the phrase "chill up his spine" is repeated multiple times in the same story. This could potentially be fixed through more adjustments to the bias values. See Appendix E for the full stories in this section. — Repeat #1 He awoke suddenly and immediately felt a chill running up his spine. ... — Repeat #2 ... what was waiting for him in the night? A chill ran down his spine as he stepped forward, ... ———— Repeat #3 ... waited in the darkness. A chill ran down his spine as he realized he was about ...

Figure 15. GPT-3 story with excessive repetition

8. Discussion and Learnings

Overall, we are not surprised with GPT-3's impressive performance compared to GPT-2 as GPT-3 was trained on a much larger dataset and has many times more parameters. When using GPT-3, often all it took was a push in the right direction to create convincing results. Rather than training a model, this project seemed more like an exploration on how best to use GPT-3 as part of a bigger process.

A question we had at the beginning was whether GPT-3 was capable of "understanding" values. While we cannot say if it can understand a topic, we can say that GPT-3 is very proficient at giving accurate definitions and providing related words to a given topic.

One negative about GPT-3 is the unpredictability. Boundaries were regarded as suggestions rather than limits. For example, the max_token count was not always respected and the word/sentence limits would be ignored. Additionally, it was difficult for GPT-3 to continue a story as it would end to try and end it as soon as possible. Surprisingly, the hardest aspect of this project was getting GPT-3 to create grade appropriate text.

Finally, an interesting risk we found was the potential for unintentional plagiarism. In Figure 16, on the left, we ask GPT-3 to complete a prompt. Notice that it is an identical match with the Star Wars movie script, even though "Star Wars" was never included in the prompt. As a result, it is difficult to tell if our generated stories are original or partially copied from pre-existing text. Therefore, more care should be taken in the future in verifying the originality of generated work.

GPT-3

Given prompt: Complete the following passage: A long time ago in a galaxy far, far away...

It was a period of civil war. Rebel spaceships, striking from a hidden base, had won their first victory against the evil Galactic Empire. During the battle, Rebel spies had managed to steal secret plans to the Empire's ultimate weapon, the DEATH STAR, an armored space station with enough power to destroy an entire planet. Pursued by the Empire's sinister agents, Princess Leia races home aboard her starship, custodian of the stolen plans that can save her people and restore freedom to the galaxy....

Movie Script from Wookieepedia

It is a period of civil war. Rebel spaceships, striking from a hidden base, have won their first victory against the evil Galactic Empire. During the battle, Rebel spies managed to steal secret plans to the Empire's ultimate weapon, the DEATH STAR, an armored space station with enough power to destroy an entire planet. Pursued by the Empire's sinister agents, Princess Leia races home aboard her starship, custodian of the stolen plans that can save her people and restore freedom to the galaxy....

Figure 16. Movie script from Wookieepedia and GPT-3 generation [7]

9. Individual Contributions

Alan Du:

- Data collection and cleaning
- Created functions to clean bags of words, calculate grades
- Create code for GPT-3 pipeline

Navid Hasanzadeh:

- Data collection and cleaning
- Developed functions to label genre
- Fine-tuning GPT-2
- Create code for GPT-2 story generation

10. References

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11. Appendix

11.1 Appendix A: Bags of Words Categories and Examples

Genre:	Science Fiction Realistic Fiction Fantasy Horror
Value:	Determination Friendship Honesty Love
Grade:	Grade 1 Grade 2 Grade 3 Grade 4 Grade 5 Grade 6

Table 1. Categories for bags of words

Genre: Fantasy

wizard, magic, spell, curse, enchantment, warlock, ogre, dragon, princess, knight, sword, shield, castle, kingdom, forest, witch, sorcery, portal, quest, adventure, mystic, witchcraft, ritual, potion, jewel, amulet, trinket, talisman, myth, legend, hex, troll, giant, deity, magical, supernatural, fairy, mythical, sorcerer, conjure, charm, spellbook, oracle, ghost, phantom, fairytale, enchantress, witchdoctor, magician, wizardry, alchemy, charmed, wand, staff, spellbound, prophecy, enchant, brew, mystical, mirror, mysticism, summon, conjuration, spellcaster, familiar, illusion, elf, dwarf, orb, grimoire, summoning, legends, shapeshift, forces, realm, lord, shaman, banshee, spells, necromancer, elixir, immortality, summoned, life, demon, treasure, cauldron, hag, creature, magick, goblin, force, genie, divine, wizards, sacred, sorceress, witchery, magi, mythology, occult, angel, ancient, secret, beast, book, tome, court, devil, dream, druid, dungeon, chasm, empire, squire, god, gold, guild, bow, undead, tale

Genre: Science Fiction

science, technology, tech, robot, warp, droid, cyborg, alien, android, space, port, hyper, hyperspace, spaceport, astro, reactor, teleport, nano, micro, bot, nanobot, drive, beam, interdimensional, hyperspeed, propulsion, transporter, stardrive, quasar, fusion, core, stasis, laser, antimatter, psionics, tractor, hyperdrive, interstellar, martian, space-time, superhuman, ufo, speed, blackhole, cosmos, advanced, ai, beaming, clones, colony, world, credits, cybernetic, revolt, deep, federation, death, ray, super, weapon, inter-planetary, nova, bombs, busters, supernova, sun, solar, null, parallel, worlds, planet, planets, post-human, post-war, post-world-war, slip, stream, slipstream, gun, heat, radiation, robotic, exoskeleton, mech, mecha, powered, armour, sentient, beings, base, sub-space, warp-space, radio, waves, uv, rays, gamma, technocracy, stargate, terraforming, utopian, society, utopia, mothership, hive, queen, machine, matrix, gate, black, hole, spacetime, field, psionic, interplanetary, galactic, galaxy, universe, time, galaxies, multiverse, data, wormhole, anomaly, cosmic, photon, proton, electron, phaser, intergalactic, dimension, dimensional, energy, portal, mechanical, paradox, flux, wave, loop, distortion, shield, drone, dilation, bubble, quantum, satellite, matter, neutron, civilization, electromagnetic, conduit, aliens, spaceship, future, futuristic, star, system, station, creature, scientist, artifact, relic, engineer, engineers, scientists, discovery, discoveries, antigravity, gravity

Value: Love

loved, loves, love, loving, affection, adoration, admiration, amour, beloved, caring, cherish, compassion, cupid, devotion, emotional, endearment, enthusiasm, faithfulness, feelings, fondness, friendship, grace,

happy, heart, hero, honey, idolize, intimacy, kindness, kiss, loyalty, obsession, passion, sentiment, sentimentality, sweetheart, tenderness, trusting, understanding, unity, desire, fantasy, warmth, worship, flame, commitment, trust, eternal, security, eternity, idolization, yearning, bliss, pure, harmony, respect, miracle, blissful, comfort, amity, appraisal, appreciation, ardor, ecstasy, empathy, enchantment, friendliness, generosity, gentleness, giving, goodwill, hope, idolatry, liking, magnanimity, mercy, romance, spiritual, sweetness, thankfulness, welcome

Grades	1	2	3	4	5	6
Word Length	6	7	8	9	10	No limit
Sentence Length	7	9	11	13	15	No limit

11.2 Appendix B: Grade Sentence and Word Limits

Table 1. Word and sentence limits for different grades

11.3 Appendix C: Scoring Rubric and Average Scores

Score Range	Criteria
0-24	Fail – does not show any signs of fulfilling criteria
25 – 49	Not sufficient – barely shows any signs of fulfilling criteria
50 – 74	Sufficient – somewhat fulfills the criteria
75 – 85	Good – mostly fulfills the criteria
86 - 100	Excellent – hard to distinguish between machine and human writing

Table 2. Criteria grading requirements

Category	Weight	GPT3 Avg	GPT2 Avg FP	Baseline
Flow of the Story	0.10	85	60	45
Grammar	0.10	100	87	90
Does the plot make sense?	0.15	90	63	42.5
How well are values captured?	0.25	97.5	50	N/A
How well is the genre captured?	0.25	100	82	60
How appropriate is the text for the age?	0.15	82.5	28	30
F	inal Score	93.75	61.35	39.375

Table 3. Evaluation rubric for generated stories

11.4 Appendix D: GPT-2 Story Generation Results

Story 1

Genre: Science Fiction Grade: 6 Prompt: <|startoftext|> <6> <sci_fi> <love> One day,...

He told the dog of his late wife and his young son. It was then they took their son for a walk. On the way, the dog met a young woman named Tanya who was on her way to be evicted from the dog. The dog followed the young woman. On the way, the dog fell into a river, and was found and brought back to the dog. The dog had found the dog by the sea. The dog did not leave the dog, because that night she was in search of a place. The girl had called a woman from the countryside, and the man from the river, to look for the lost dog. The dog and the young girl were finally spotted by a dog, and he did not see the young girl alone. The dog had the lady and the young girl and his dog.

Story 2

Genre: Horror Grade: 2 Prompt: <|startoftext|> <2> <horror> <cleverness> Once upon a time,...

He took a blue shooter to the dealer. The dealer had black plastic gloves. He put the plastic gloves on the table. The dog gave the dealer a few expensive earrings. He went back to the dealer. He looked at the glass glasses. The dealer opened the glasses. He gave the dog his glass. The dog looked at the glass. Thank you, he said. I said hello to him. He walked over to the dealer. The dealer didnt notice him. He gave back the glass. The dog looked at the glass. He put the glass back on. He looked at the glass. What a nice glass, he thought. He looked at the glass. At about the corner, the dealer opened the glass. It was dark. He pulled a bunch of rocks toward the dealer. The dealer closed his eyes. He walked back to the dealer.

Story 3

Genre: Fantasy Grade: 3 Prompt: <3> < fantasy > <determination> Once upon a time, ...

A man, the King of Fire was on his way to his castle. He was looking for the castle bell. That bell was the castle bell. His guards were waiting. The king was very pleased. He was happy to see a bell on that very day. His guards were delighted with that bell. Then they came. They said the bell was ready. But the king said it was ready, but it was too late. The guards came very late. They were very impatient. That bell was the right bell. One thing, of course, made him angry. He didnt care about the ringing bell. He didnt care about the bell. The guards did not care. They did not care about the bell! The guards did not care. They did not care. They guards did not care. They asked the guard. I will make a choice.

11.5 Appendix E: GPT-3 Story Generation Results

Story 1

Prompt: Create the beginning of a horror story for grade 6 children. The story should talk about friendship, and determination. Do not end the story. He awoke suddenly

Output: He awoke suddenly and immediately felt a chill running up his spine. He was in his bedroom, but the dark shadows of the night made it seem like a very unfamiliar place.

His gaze shifted to the window, and he saw two of his friends looking in. They were both wearing strange masks, and he thought he could see fear in their eyes.

The fear turned to determination when he saw his friends nod to each other. He could tell they were here to help him.

His friends gestured for him to come out of the window, and he knew that if he wanted to survive he had to trust in their strength and friendship. He slowly opened the window and began to climb out. A gust of wind blew past him, and he shivered as he heard a voice whisper, "You must be brave if you're going to make it through the night." The words filled him with resolve, and he stepped into the darkness, ready to face whatever dangers lurked ahead. A final glance back at his friends was all the assurance he needed. He was ready. The only question was, what was waiting for him in the night? A chill ran down his spine as he stepped forward, ready to face the unknown. The night had only just begun. The suspense of the unknown was heavy in the air. Suddenly, he heard a sound coming from the darkness. It was a menacing growl, and it sounded like it was coming from a wild animal. He stopped in his tracks and listened, trying to decide what to do next. He couldn't help but feel a little scared, but his determination and trust in his friends gave him the courage to keep going. He slowly stepped forward, ready to see what waited in the darkness. A chill ran down his spine as he realized he was about to face the unknown.

Story 2

Prompt: Create the beginning of a horror story for grade 5 children. The story should talk about friendship. The word length of most words should be no longer than 10 characters. Most sentences should be no longer than 15 words long. Do not end the story. In

Output: In the small town of Riverwood, two best friends, Sam and Jake, were exploring the forest near their homes. Suddenly, they heard an eerie laugh echoing through the trees. Sam and Jake were scared, but they wanted to be brave and find out what was happening. They crept closer, following the strange laughter until they reached a clearing. In the clearing, they saw a mysterious figure with bright yellow eyes staring right at them.

The figure's eyes were narrowed and it asked in a deep voice, "What are you doing here?" Sam and Jake were both frozen in fear and didn't know how to respond. They just stood there, gripping each other's hands, wishing they were back home. Suddenly, the mysterious figure looked away and said, "You two

must be brave to explore this place alone. Be careful, and don't let fear stop you from discovering the truth."

The figure disappeared into the trees, leaving Sam and Jake alone in the clearing. The two friends looked at each other and realized that even though they were scared, they were still together, and that was enough to make them brave.

That night, Sam and Jake told their families about their adventure, and their bravery was praised by all. From then on, their bond of friendship was even stronger than before, and they were never afraid to explore the unknown together.

Encouraged by their newfound strength, Sam and Jake decided to venture deeper into the forest the next day. As they made their way through the trees, they could almost feel the eyes of the mysterious figure watching them from the shadows.

Unbeknownst to them, the figure had been following them all along, and it had a plan in store for the two brave friends. The figure was none other than the guardian of the forest, and it was determined to test Sam and Jake's courage one last time. The guardian knew that if they could pass this final test, they would forever be remembered as the bravest of friends. A wicked smile crossed the guardian's face as it stepped out of the shadows, ready to present the friends with their ultimate challenge... A challenge that would test their loyalty and friendship like never before. A challenge that would change their lives forever. The friends stood ready, expecting the worst, and braced themselves for the unexpected.

Story 3

Prompt: Create the beginning of a fantasy story for grade 1 children. The story should talk about determination. The word length of most words should be no longer than 6 characters. Most sentences should be no longer than 7 words long. Do not end the story. In a faraway land

Output: In a faraway land, Liv was brave and small. She had big dreams and a heart full of hope. She wanted to explore but faced a dark wall. The wall was tall and hard to climb. But Liv was brave and determined to try.

So, early one morning, she started to scale the wall with strength and without fail. A few slips and falls, but Liv kept climbing until she saw something new and tall. A castle of grandeur that had been hidden from her view! A doorway to adventure, and to her dreams, too! The wall had been tall. but Liv was determined to get through. The castle door was now in sight, and she knew she'd make it true. The determination in her heart grew stronger and stronger as she pushed onward and closer to her goal. She finally reached the castle door and walked in, ready to see what lay beyond. A new world of adventure, just waiting to be explored! The determination in Liv's heart had won the day, and she knew this was only the beginning of her journey.

Story 4

Prompt: Create the beginning of a fantasy story for grade 2 children. The story should talk about love. The word length of most words should be no longer than 7 characters. Most sentences should be no longer than 9 words long. Do not end the story.

In a castle

Output: In a castle, near a forest, lived a King. He loved his Queen, who was fair and kind. One day, a dragon flew in. The King was scared, but the Queen was brave. She hugged the dragon and it purred like a kitty. The dragon told the Queen to go to a secret cave. Together, they flew to the cave...

Inside, they found a magical pond. The Queen kneeled down and put her hands in the water. Suddenly, the pond glowed and a magical love potion appeared on the surface. The Queen knew this potion would make the King love her even more. She took the potion back to the castle and gave it to the King.

The King drank the potion and almost immediately, his love for the Queen doubled. They both lived happily ever after, their love even greater than before.

The end. A magical tale of a love that was so strong, it could overcome even the most fearsome dragon! The King and Queen were blessed to find such true love and to be together forever. The magical love potion had been their secret treasure, never to be forgotten. The kingdom celebrated their love with a grand feast and fond memories that would last for eternity.

The King and Queen lived together in harmony, surrounded by their loyal subjects, who loved them both dearly. Their castle was always full of light and laughter, and their love was so strong it could never be broken.

Every day, the King and Queen showed their love to each other in special ways, and their love and kindness filled the kingdom with peace and joy.

They were the perfect example of true love, an inspiration to all who saw them. They were the King and Queen of hearts, and they knew that as long as their love remained strong, their kingdom would be blessed. A happy ending to a magical tale of love!

12. Permissions

Alan Du:

•permission to post video: wait until I see the video
•permission to post final report: yes
•permission to post source code: yes

Navid Hasanzadeh:

•permission to post video: wait till see video•permission to post final report: yes•permission to post source code: yes