FAQ Bot Plus Report

Young Sang Kwon

PHASE 1: FAQ BOT

**1. Introduction**

The bot employs regular expression patterns with fuzzy string matching to process user queries and compare them with pre-loaded questions and answers. Upon identifying a matching pattern, the bot delivers the corresponding response to the user

**2. Features and Functionality**

2.1 Key Features:

* Data Loading: Loads questions and answers from questions.txt and answers.txt files.
* Text Cleaning: Converts user input to lowercase and removes punctuation to clean the text.
* Fuzzy Matching: Finds the most matching regular expression pattern to the user's question and provides the corresponding answer.

2.2 Operation Mechanism:

* The user enters a question.
* The entered question is cleaned.
* Based on the cleaned question, fuzzy matching is performed to find the most matching pattern.
* Provides the answer that matches the pattern to the user.

**3. Program Execution**

* From the directory where faq\_bot.py is located, run “python faq\_bot.py”.
* Enter a pre-existing question (e.g., "Who were the first humans created by God according to the Book of Genesis?").

: Expected response: "The first humans created by God were Adam and Eve."

* Referencing “regex.txt”, input data with errors that fall within the range (e.g., " Who were the first humans creted by God according to the Book of Genesi? " [note: "created" -> "creted", "Genesis" -> "Genesi"]).

: Expected response: "The first humans created by God were Adam and Eve."

* To end the conversation, type "goodbye".

**4. Regular Expression Patterns**

The bot uses regular expression patterns to match user queries to the most relevant questions in the dataset. These patterns incorporate error allowances (e.g., {e=2}) to account for slight variations or mistakes in the user's question.

4.1 regex.txt

* .\* (first humans|individuals){e<=2} .\*(created|made){e<=1} .\* (God){e<=1} .\* (genesis){e<=2} **(for question 1,2)**
* .\* (fruit){e<=1} .\* (Adam and Eve){e<=2} .\*(forbidden|not allowed){e<=2} .\* (eat|consume){e<=1} .\* (Eden){e<=1} **(for question 3,4)**
* .\* (tempted|lured){e<=1} (Eve){e<=1} .\* (eat|consume){e<=1} .\* (forbidden|prohibited){e<=2} (fruit|apple){e<=2} **(for question 5,6)**
* .\* (sons|children){e<=1} .\*(offered|gave){e<=1} .\* (unacceptable sacrifice|displeasing offering){e<=3} .\* (God){e<=1} **(for question 7,8)**
* .\* (Cain){e<=1} .\* (murdered|killing){e<=1} (Abel){e<=1} **(for question 9,10)**
* .\* (God('s?)){e<=1} (decide|reason){e<=2} .\* (send|releasing){e<=1} .\* (flood){e<=1} .\* (Noah){e<=1} **(for question 11,12)**
* .\* (long|duration){e<=1} .\* (floodwaters){e<=2} (remain|stay){e<=1} .\* (earth|planet){e<=1} .\* (Noah('s?)){e<=1} **(for question 13,14)**
* .\* (mountain|peak){e<=1} .\* (Noah's){e<=1} (Ark){e<=1} .\*(rest|settle){e<=1} **(for question 15,16)**
* .\* (sign|symbol){e<=1} .\* (covenant|pact){e<=2} (God){e<=1} .\* (Noah){e<=1} .\* (flood|deluge){e<=2} **(for question 17,18)**
* .\* (construction|building){e<=2} .\* (Babel){e<=2}.\*(halted|stop){e<=1} **(for question 19,20)**
* .\* (region|area){e<=1} .\* (Abram){e<=1} (called|instructed){e<=2} .\* (God){e<=1} .\* (go|travel){e<=1} **(for question 21,22)**
* .\* (new|fresh){e<=1} (names){e<=1} .\* (given|bestowed){e<=1} .\* (Abram and Sarai){e<=3} .\* (God){e<=1} **(for question 23,24)**
* .\* (son|child){e<=1}.\*(born){e<=1} .\* (Abraham and Sarah){e<=3} .\* (old age){e<=2} **(for question 25,26)**
* .\* (two cities){e<=2} .\* (destroyed|ruined){e<=2} .\* (wickedness){e<=2} .\* (Abraham's){e<=2} (era|time){e<=1} **(for question 27,28)**
* .\* (Isaac('s?)){e<=1} (wife|marry){e<=1} **(for question 29,30)**
* .\* (sons){e<=1} .\* (Isaac(and Rebekah)?){e<=2} **(for question 31,32)**
* .\* (esau){e<=1} (trade|exchange){e<=2} .\* (jacob){e<=1} .\* (stew|soup){e<=1} **(for question 33,34)**
* .\* (Jacob('s?)){e<=1} (flee|escape){e<=1} .\* (Uncle Laban's){e<=2} (house|residence){e<=2} **(for question 35,36)**
* .\* (Jacob's){e<=2} (two wives|women){e<=2} **(for question 37,38)**
* .\* (Joseph){e<=1} (end up|come to be){e<=2} .\* (Egypt){e<=1} **(for question 39,40)**

**5. Dataset Overview**

5.1 questions.txt

* Who were the first humans created by God according to the Book of Genesis?
* Which individuals were initially made by God in the Book of Genesis?
* Which fruit were Adam and Eve forbidden to eat in the Garden of Eden?
* What fruit were Adam and Eve not allowed to consume in the Garden of Eden?
* Who tempted Eve to eat the forbidden fruit?
* Which one lured Eve to consume the prohibited apple?
* Which of Adam and Eve's sons offered an unacceptable sacrifice to God?
* Who among the children of Adam and Eve gave a displeasing offering to God?
* What was the consequence for Cain after he murdered Abel?
* What did Cain face as a result of killing Abel?
* Why did God decide to send the flood during Noah's time?
* What was God's reason for releasing the flood in the era of Noah?
* How long did the floodwaters remain on the earth during the time of Noah?
* For what duration did the floodwaters stay on the planet in Noah's era?
* Which mountain did Noah's Ark come to rest upon?
* On which peak did Noah's Ark settle?
* What was the sign of the covenant God made with Noah after the flood?
* What symbol represented the pact God established with Noah following the deluge?
* Why was the construction of the Tower of Babel halted?
* Why did the building of the Tower of Babel stop?
* To which region was Abram called by God to go?
* Which area was Abram instructed by God to travel to?
* What new names were given to Abram and Sarai by God?
* Which fresh names were bestowed upon Abram and Sarai by God?
* Who was the son born to Abraham and Sarah in their old age?
* Which child was born to Abraham and Sarah during their old age?
* Which two cities were destroyed due to their wickedness during Abraham's time?
* What were the names of the cities that got destroyed because of their wickedness in Abraham's era?
* Who was Isaac's wife?
* Who did Isaac marry?
* Who were the twin sons of Isaac and Rebekah?
* Which sons were born as twins to Isaac and Rebekah?
* What did Esau trade to Jacob for a bowl of stew?
* What did Esau exchange with Jacob for a bowl of soup?
* Why did Jacob flee to his Uncle Laban's house?
* What was the reason for Jacob's escape to his Uncle Laban's residence?
* Who were Jacob's two wives?
* What is the name of Jacob's women?
* How did Joseph end up in Egypt?
* In what way did Joseph come to be in Egypt?

5.2 answers.txt (Same answer to both questions)

* The first humans created by God were Adam and Eve. **(for question 1,2)**
* Adam and Eve were forbidden to eat from the tree of the knowledge of good and evil. **(for question 3,4)**
* The serpent tempted Eve to eat the forbidden fruit. **(for question 5,6)**
* Cain's offering was not favorable to God, unlike his brother Abel's. **(for question 7,8)**
* Cain was marked by God and became a wanderer on the earth. **(for question 9,10)**
* God saw how great the wickedness of the human race had become and decided to wipe out humanity, except for Noah and his family. **(for question 11,12)**
* The floodwaters remained on the earth for 150 days. **(for question 13,14)**
* Noah's Ark came to rest upon the mountains of Ararat. **(for question 15,16)**
* The rainbow was the sign of the covenant between God and all living creatures. **(for question 17,18)**
* God confused the language of the people, making them unable to understand each other, and scattered them over the face of the earth. **(for question 19,20)**
* God called Abram to go to the land of Canaan. **(for question 21,22)**
* Abram was renamed Abraham, and Sarai was renamed Sarah. **(for question 23,24)**
* Isaac was the son born to Abraham and Sarah. **(for question 25,26)**
* Sodom and Gomorrah were destroyed because of their wickedness. **(for question 27,28)**
* Isaac's wife was Rebekah. **(for question 29,30)**
* Esau and Jacob were the twin sons of Isaac and Rebekah. **(for question 31,32)**
* Esau traded his birthright to Jacob for a bowl of stew. **(for question 33,34)**
* Jacob fled because he feared Esau's anger after deceiving their father, Isaac, and stealing Esau's blessing. **(for question 35,36)**
* Jacob's two wives were Leah and Rachel. **(for question 37,38)**
* Joseph was sold into slavery by his jealous brothers and was taken to Egypt. **(for question 39,40)**

PHASE 2: FAQ BOT PLUS

**1. Introduction**

Each time you ask a question related to a recognized entity type, the bot will respond with one of the two prepared answers, alternating with each new question.

**2, Sample Utterances for Testing:**

* **Character**

Utterance 1: "What can you tell me about Noah and the ark?"

Utterance 2: "Describe Noah's role in the biblical flood."

* **Place**

Utterance 1: "What was the Garden of Eden like?"

Utterance 2: "Tell me more about the forbidden fruit in Eden."

* **Event**

Utterance 1: "Explain the significance of the flood in Noah's time."

Utterance 2: "What was the impact of flood on humanity?"

* **Other Questions:**

Utterance 1: "Who was King Solomon in the Bible?"

Utterance 2: "What are the Ten Commandments?"

PHASE 3: Discord

**1. URL**

**https://#secret**