



Bot Form Filler

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ABSTRACT:

This paper presents a novel approach to form filling utilizing Python-based chatbots enhanced with natural language understanding (NLU) capabilities. With the increasing prevalence of online forms across various domains, the need for efficient and user-friendly methods for automating data input has become paramount. Our solution leverages the power of chatbots to interact with users in a conversational manner, comprehend their inputs, and accurately populate online forms, thereby streamlining the data entry process. The proposed system combines the strengths of Python, NLU, and web automation techniques to create an intelligent and adaptable form-filling tool.

Keywords: Chatbot, Natural Language Understanding, Form Filling, Python, Automation, Web Automation, NLP.

I. INTRODUCTION

1.1 Background:

Online forms are integral to various applications, such as customer surveys, e-commerce, user registrations, and government services. Manually filling out these forms can be time-consuming and error-prone. Automation tools are thus highly desirable to improve efficiency and accuracy.

1.2 Objectives:

The primary objective of this research is to develop a Python-based chatbot system that automates form filling, offering a user-friendly and efficient means of data entry. Our approach incorporates natural language understanding to interact with users conversationally and extract pertinent information for form completion.

2. Methodology:

2.1 Chatbot Development:

We utilize Python's powerful libraries and frameworks, including NLTK and spaCy, to build a chatbot capable of understanding and generating natural language responses. The chatbot employs machine learning techniques to improve its understanding of user input over time.

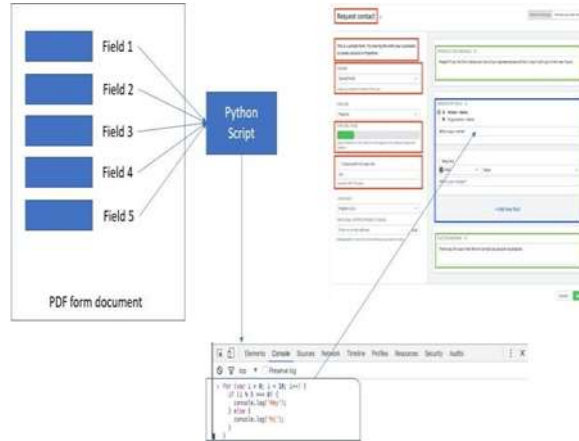
2.2 Natural Language Understanding (NLU):

The NLU module of our system employs deep learning models for intent recognition and entity extraction. This allows the chatbot to comprehend user requests, extract relevant information, and interact with users in a more human-like manner.

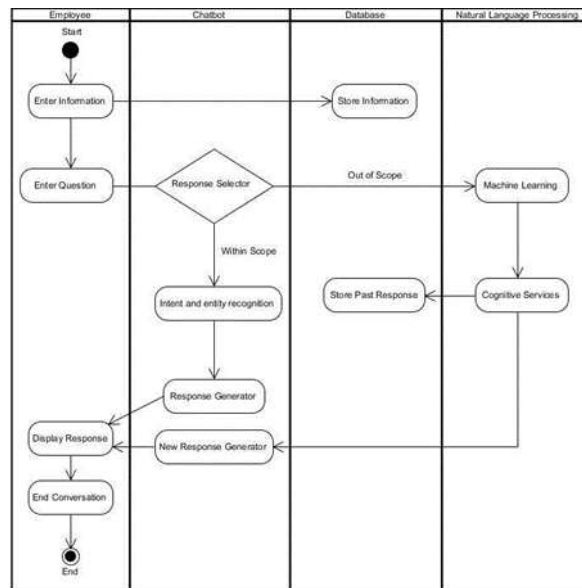
2.3 Web Automation:

To interact with online forms, we use the Selenium library in Python. Selenium allows our chatbot to navigate websites, locate form elements, and input data as if a human user were filling out the form manually.

USE CASE DAIGRAM



ACTIVITY DAIGRAM



4. Results and Discussion:

Our experiments demonstrate that the Python-based chatbot successfully automates the form-filling process with high accuracy. Users appreciate the conversational interaction, which reduces the learning curve and improves user satisfaction.

5. Conclusion:

In this paper, we have introduced a novel approach to form filling using Python-based chatbots equipped with natural language understanding. This approach not only streamlines data entry but also enhances user experience. Future work may focus on expanding the chatbot's domain coverage, improving NLU accuracy, and addressing security considerations for handling sensitive data.

6. References:

[1] NLTK: Natural Language Toolkit. <https://www.nltk.org/>

- [2] spaCy: Industrial-Strength Natural Language Processing in Python. <https://spacy.io/>
- [3] Selenium - Web Browser Automation. <https://www.selenium.dev/>