CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation

The first step work of this program is requesting the user to input the keyword or sentence based on the AIML database that will be used on this chatbot. After user inputted the keyword or sentences, the program will be take the string of the user keywords from the text field by using the GET methods. If the keyword is null or blank, the program will be displaying the error messages like “Masukkan Keyword”.

After the keywords has been succesfully inserted on the program, the next step is the process of breaking sentence into words. This process using the preg split function that usually used for splitting each part of data expecially the string data. After the words has been splitted, then will be inserted to the Array data structure by using looping function as much as the length of the sentences that inputted by user. The looping function is also applied with the splitted AIML pattern from the LinkedList data structures.

The next stage process is the main process of the running of this program. Both arrays are the array of the user sentences and array of the pattern database will be matched one by one words by using the if function that still inside on the looping function. If the word from the user matches with the word from the database, then the keyword is putted in the array until the looping function is complete. And the last step on this function that will be returned the result array that contained the right keywords. This code below is the main part of pattern-matching function.

```
function strpos_arr($string,$array) {
      $strsplit=split("",$string);
      $arrsplit=split("",$array);
      $arrayhasil=array();
      for($i=0;$i<sizeof($strsplit);$i++)
      {
            for($j=0;$j<count($arrsplit);$j++)
            {
```

```
                    if($strsplit[$i]==$arrsplit[$j])
                    {
                    array_push($arrayhasil,$strsplit[$i]);
                    }
                }
        }
        return $arrayhasil;
}
```

The returned array data will be still used to search the answer data on the LinkedList data structures by matching the array data with the main database on the LinkedList that previously created. By using the foreach function, each of the LinkedList data will be discovered and found the right answer based from the array data. And the final result, that right answer will be displayed.

5.2 Testing

For the testing of this program, an AIML database files named "infopmb.aiml" has been stored on the database on the chatbot. This program will be testing using four different of keywords, there are ILMU, ILMU KOMPUTER, FAKULTAS ILMU KOMPUTER, and APA ITU FAKULTAS ILMU KOMPUTER.

Table and screenshots below are the result of pattern match and answer output from the program.

Table 5.1: Pattern Match Result

User Input	Pattern Match Result
ILMU	- ILMU KOMPUTER - ILMU KOMUNIKASI
ILMU KOMPUTER	- ILMU KOMPUTER - APAKAH FAKULTAS ILMU KOMPUTER MERUPAKAN FAKULTAS UNGGULAN DI UNIKA
FAKULTAS ILMU KOMPUTER	- ILMU KOMPUTER - FAKULTAS - APAKAH FAKULTAS ILMU KOMPUTER MERUPAKAN FAKULTAS UNGGULAN DI UNIKA

	- BAGAIMANA DENGAN FAKULTAS TEKNOLOGI PERTANIAN
APA ITU FAKULTAS ILMU KOMPUTER	- ILMU KOMPUTER - FAKULTAS - APAKAH FAKULTAS ILMU KOMPUTER MERUPAKAN FAKULTAS UNGGULAN DI UNIKA - BAGAIMANA DENGAN FAKULTAS TEKNOLOGI PERTANIAN

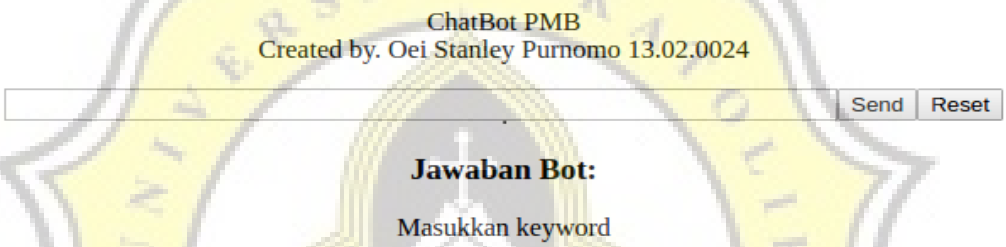

Illustration 5.1: ChatBot Main Interface

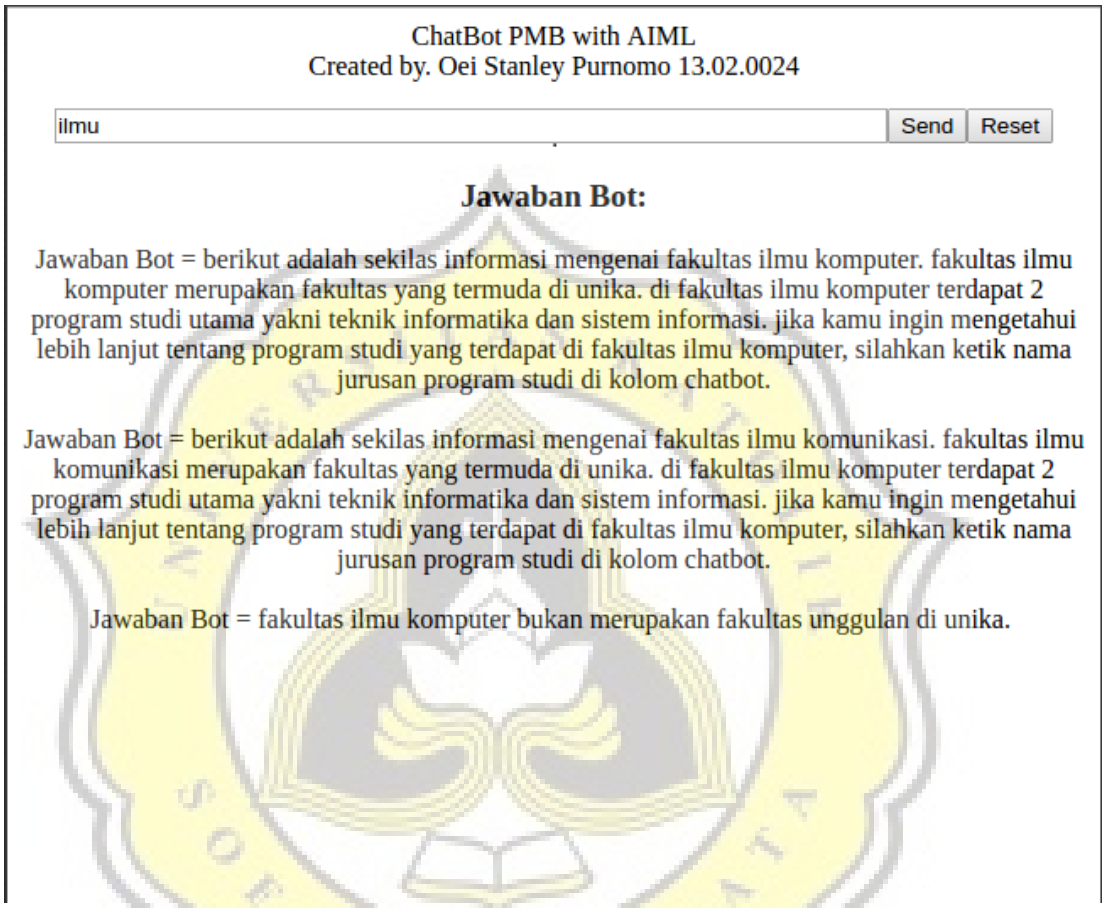

Illustration 5.2: Result of Keyword 'ILMU'

llustration above shows the results when the chatbot program is given with the input keyword ILMU. This result of the program will be generate the answer that only related with the pattern keyword 'ILMU' on AIML database, there are the 'ILMU KOMPUTER' and 'ILMU KOMUNIKASI' keyword.

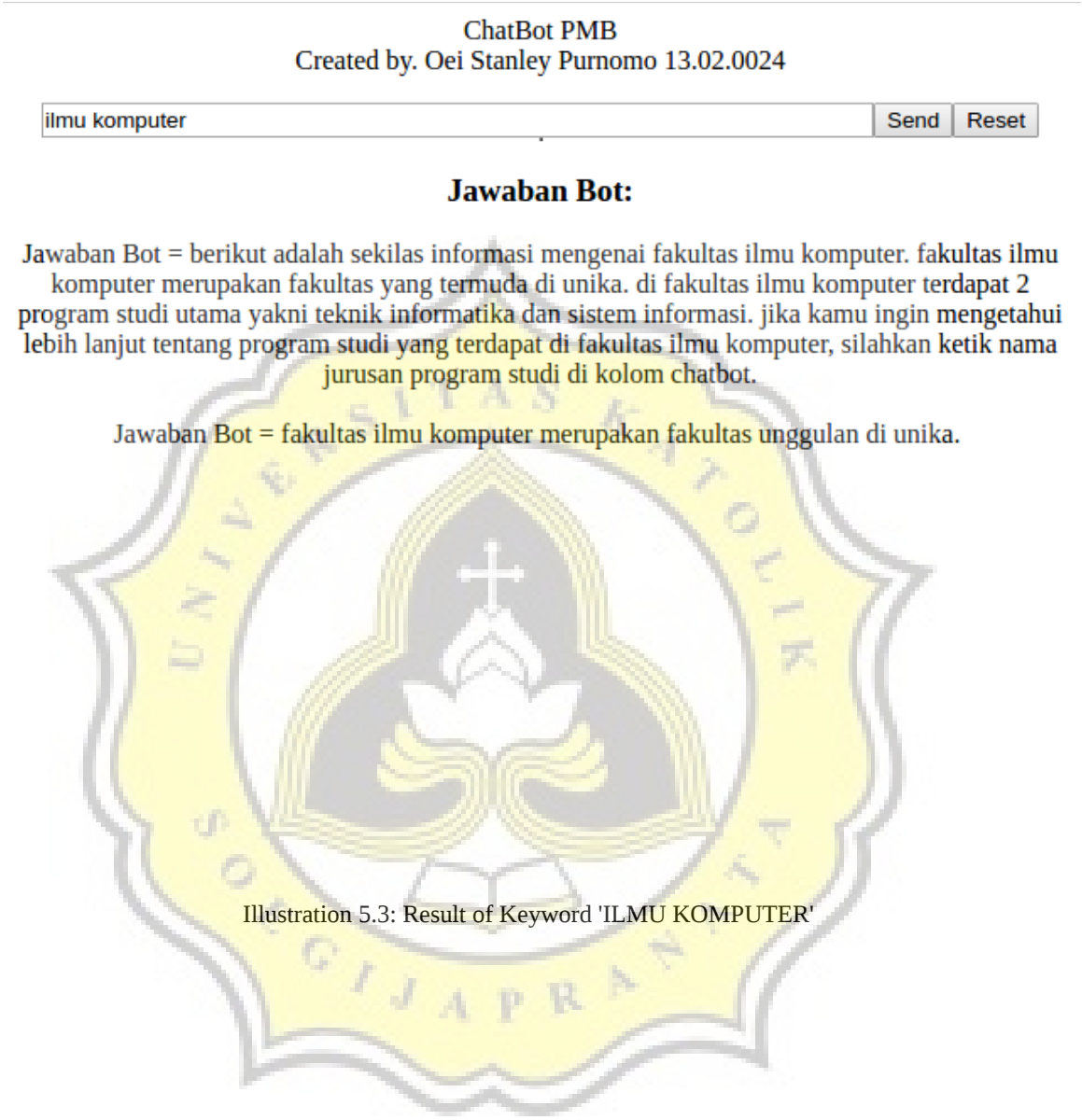

Illustration 5.3: Result of Keyword 'ILMU KOMPUTER'

Illustration 5.3 shows the result of the program with 'ILMU KOMPUTER' keyword. For this process, the program will be read the first keyword 'ILMU'. After the keyword 'ILMU' found, then the program will read the next second keyword 'KOMPUTER'. And the final result of the program will produce the answers that related to 'ILMU' and 'KOMPUTER'.

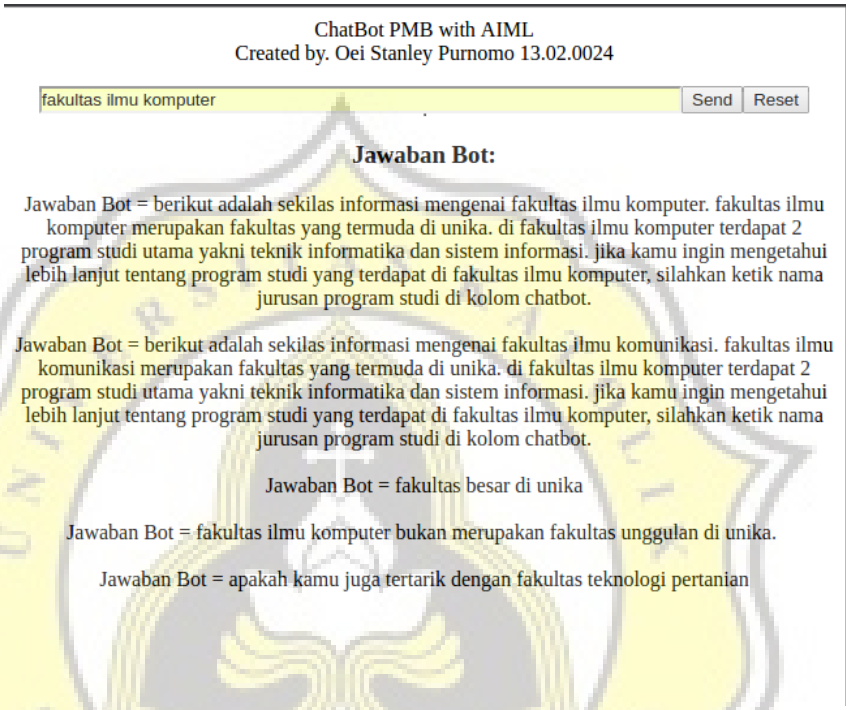

Illustration 5.4: Result of Keyword 'FAKULTAS ILMU KOMPUTER'

Illustration 5.4 shows the result for the keyword 'FAKULTAS ILMU KOMPUTER'. Because the keyword 'FAKULTAS' has already on the AIML database, the the program will be showing the output data from template with keyword 'FAKULTAS' or template from the keyword 'ILMU KOMPUTER'.

Illustration 5.5: Result of Keyword 'APA ITU FAKULTAS ILMU KOMPUTER'

The Illustration 5.5 shows the result of the keyword of 'APA ITU FAKULTAS ILMU KOMPUTER'. From the above result,it has been known that phrase 'APA ITU' is not contained in AIML database, so the ChatBot will still displaying the results from the keyword 'FAKULTAS' and 'ILMU KOMPUTER'.

From the four testing result above that can be conclude that the the ChatBot will be detect the keyword on one by one words using the function of matching keyword that stored on the Array. If the words on first index has not

found, then the program will be match to next words again until all the words has been matched successfully. And for the result, the chatbot will be produce the output based from the keywords on AIML that matched with the keywords from the user.