



Application of the O-Chat Bot Program to Provide Learning Motivation to National University Students Using AIML

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ABSTRACT

Teaching and learning process raises new problems, some students feel the turmoil in understanding the online-based learning process and the lack of motivation to do the work. With the Chatbot-O Program, students will find it helpful to better understand the online learning process, but have not been fully able to build student learning motivation. This study aims to develop to a further stage regarding the Chatbot application to provide motivation to learn at national university students by displaying answer messages based on the questions given. This research uses AIML which is part of the XML set. And also as a language used in composing chatbot logic to understand the input that has been received

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1. Introduction

At this time, Technology is experiencing a very drastic increase, as well as the world of education. Students and lecturers also demand information technology that can be accessed from anywhere and can facilitate all the work activities of teachers in giving assignments to students. Assist students in learning with easy access facilities, and there is no need to meet face to face between students and teachers So many students find it difficult to do assignments and lack of motivation when completing their assignments which indicates that there is a problem, namely the effectiveness of learning.

On this occasion, the author will conduct research related to the effectiveness of online learning which is intended to provide encouragement to students who feel the lack of motivation to complete their tasks.

Chatbot is an application or service that interacts with users through text conversations. Chatbot works to replace the role of humans in serving conversation through a message application by answering every sentence written by the user. Chatbot will understand, learn, and interact like humans do. This can happen because of Artificial Intelligence.

Based on the explanation above, it is hoped that the Chatbot service as a bot can provide solutions to National University Students. in this study is an online learning method that can develop students' motivation such as studying, doing assignments, and much more.

2. Basic Theory

2.1. Chatbot

It is a system that communicates with people through text messages, a virtual companion that is integrated into websites, applications or instant messages and helps students do their work. Such bots are automated communication systems with users. Chatbot itself is run through an Admin, that is, a person behind the scenes who has an important role in making bot personality like a real human.

2.2. Artificial Intelligence Markup Language (AIML)



AIML stands for Artificial Intelligence Modeling Language. AIML is an XML-based markup language that is intended to create artificial intelligence applications to create human interfaces while keeping its application simple for programs, easy to understand and highly defensible.

a. Category

That is an important thing from all Chatbot insights. in each category there are templates and patterns. Following below are examples of using categories:

```
<category>
<pattern>siapa temanmu </pattern>
<template>kamu bagian dari temanku
</template>
</category>
```

When the category is called, the bot can reply to the input given by the user "who is your friend" and "you are part of my friend".

b. Pattern

Pattern is a question given by a user that can be responded to by more than one reply. Similar patterns are called wildcards. Following is an example of applying wildcard:

```
Namanya siapa *
```

Similar input "what is your name", "who are you calling", and so on.

c. Template

That is an input of more than one pattern. Following is an example of implementing a template:

```
Sampai berjumpa...
```

Variable variables are similar to the names entered into the system which proceed to another pattern named srai. This srai is used to apply word equations. Below this is the use of saucers as follows:

```
<category>
<pattern>Babai</pattern>
<template>Sampai berjumpa/>.</template>
</category>
<category>
<pattern>sampai nanti</pattern>
<template><srai>babai</srai></template>
</category>
```

In the category contained "Babai" pattern will be replied with the answer "See you later" and the next pattern "see you later". Which means that each word will be continued into a category that is similar to the <srai> syntax

2.3. Program O

Program O is an AIML bot implementation written in PHP. Pattern matching algorithm is a feature that looks very interesting is the basic context pattern is stored thoroughly in the database. Program O is a chatbot translator capable of creating, reading, updating and deleting bot knowledge.

2.4. SIPOC diagram

Is a diagram used to establish a general picture of the existing system processes. The SIPOC diagram can be interpreted as a supplier, input, process, output, and customer is one of the tools used to implement quality improvement



3. Research methods

3.1. Data Collection and Analysis

AIML is a collection of insights that can transform data into information so that the characteristics of the data can be understood and useful as solutions to problems. Chatbot is created from the process of tutoring from what is said by Chatbot. This study uses the data most often needed by students or other users.

3.2. Study of literature

Literature Study is looking for references that are relevant to the case or problem found related to the research title. The reference contains about:

- a. Basic concepts of learning.
- b. Character understanding.
- c. National University student learning concepts.
- d. Rules that apply at the National University.

This reference is obtained through internet search results, campus web, and books. The results of this literature study can be a reference in formulating the problems that occur. Purpose of Literature Study itself as a pillar to strengthen the existing softness as a basis for theory in conducting research.

3.3. Observation

The purpose of observation is to find accurate data with a case or problem with a direct review of the case or problem taken. The reference contains about:

- a. Conduct interviews with National University Students.
- b. Constraints faced in the Learning process.

This data was obtained by studying literature and reading articles obtained by the author as well as from various other online media.

The results of this data collection can be used as a data reference to create answers and visualize using the Chatbot Application.

3.4. System Analysis Method

The System Development Life Cycle becomes the method used in this analysis with the following stages:

- a. Planning
- b. The design
- c. Coding
- d. Testing

4. Discussion and Analysis

4.1. Process Diagram

From 60 sample data taken through interview results, it is divided into 2 samples as follows:

- a. 50 Active Students
- b. 10 Alumni

The author will attach several Interviews via the Whatsapp Application with Active Students and National University Alumni. From the results of observations that have been made, the authors describe the diagram as follows:

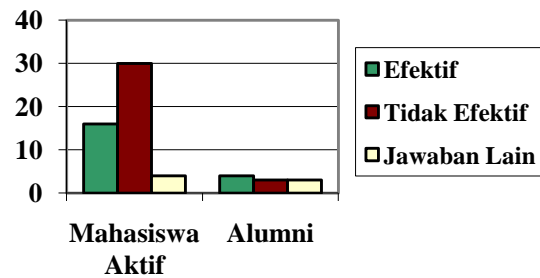


Fig 1. Data Diagram

a. Active Student

The author gets data of 50 students. 16 Students answered Effectively, 30 Students answered Not Effective, and 4 Students answered with other answers.

b. Alumni

The author gets 10 Alumni data. 4 Alumni answered Effective, 3 Alumni answered Not Effective, and 3 others answered with other answers.

4.2. The system is running

The results of observations and interviews conducted by researchers, as well as a solid foundation for what is needed every student in carrying out online lecturing activities and completing assignments online as well. Below is a flowchart that has been created with the following example:

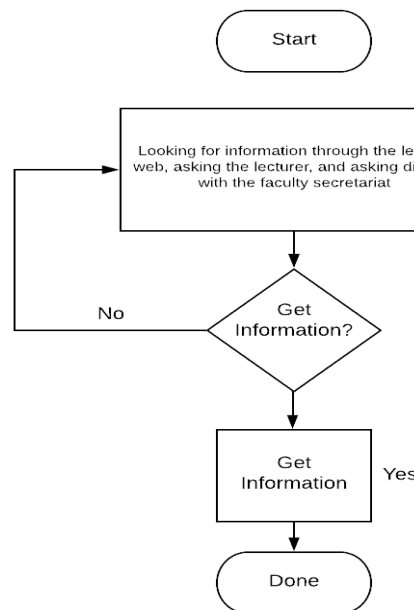


Fig 2. Running System Flowchart

4.3. The design

a. Unified Modeling Language (UML)

Here is the UML that will be used in making this system, which can be seen in the image below:



Fig 3. Use Case Diagrams

b. Activity Diagram

The following is the activity diagram of a conversation with a bot, can be seen in the picture below:

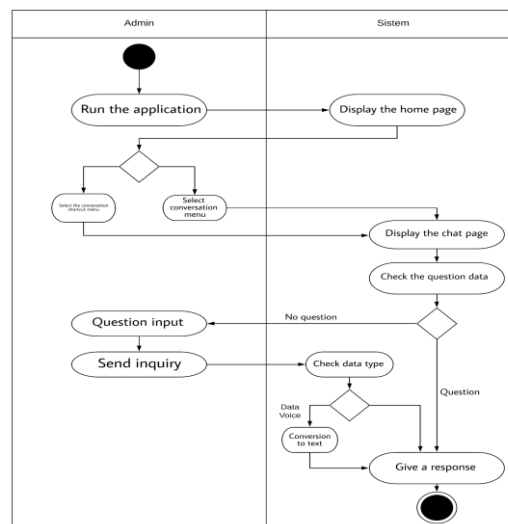


Fig 4. Activity Diagram

4.4. SIPOC analysis

The following is a SIPOC analysis adjusted to the making of this system, which can be seen in the image below:

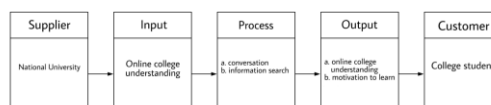


Fig 5. SIPOC diagram

4.5. System planning

After the estimation that the writer will need, the writer obtained 6 functional requirements, namely:

- The system will capture input in the form of questions given by the user
- Can provide output results issued answers given by users
- Admins can see the conversation log with users in the Admin menu
- The system can add input knowledge written by the Admin
- The system can change the input that has been written into a different or similar input.

- f. The system can delete input that has been inputted by the admin via the Find / Change AIML Menu

4.6. Implementation

The following are the results of the implementation on the website of some depictions of the plots that have been made



Fig 6. Chatbot display

This is the main display of the chatbot feature, which will later be used by users to ask questions about how to get motivated through this chatbot feature.



Fig 7. Admin Login

In this application, after logging in using a username and password then we will go to the main menu admin page that can manage this chatbot



Fig 8. Admin Main Menu

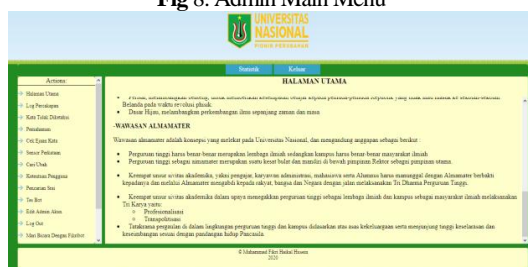


Fig 9. Admin Main Menu

On the admin main page, it contains a little of the history of the National University and there is also a link directly to the National University website.



Fig 10. Conversation Log Menu

The conversation log menu displays the history of users who have made questions to the chatbot feature. Then the history can be viewed by the admin through the conversation log menu.



Fig 11. AIML Addition Menu

In this menu, all conversations captured by the chatbot feature come from adding words that can be input through the menu

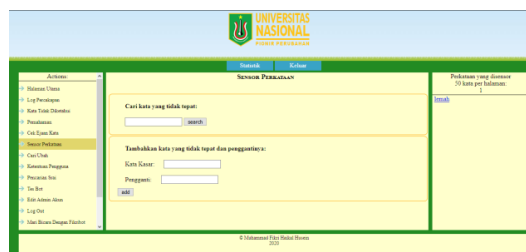


Fig 12. Speech Sensor Menu

This menu serves to limit the words that are rude or rude. These words can be inputted and then added as a blacklist to the right of the menu.



Fig 13. Spell Check Menu

This menu is made to be able to interpret what is asked by the user if the user types a word that is wrong or random. Through the addition of input, every random word can be understood by

the chatbot feature because the randomized spelling is already listed in the blacklist on the right side of the menu.

5. Conclusion

Based on the research results of the authors regarding the cultivation of chatbot in providing motivation to learn at Nasonal University students along with the discussion that has been done, it can be concluded that Chatbot created can help answer user questions quickly.

In the next stage of development, it is expected to create a chatbot application that is able to capture input responses to words that have not been traced by a bot, and can receive input from users in the form of video or images.

6. References

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