

## I. INTRODUCTION

**ALL** Religious people have a way of life, especially Muslims who have a way of life of the Quran. Al-Quran is the main source of Islamic teachings [10]. Al-Qur'an is the Muslim holy book which was revealed using Arabic [15]. Al-Quran has a unique and distinctive characteristics, with writing or style of language [6]. Especially the Quran uses the original Arabic (Al-Quran) which is translated into various languages such as Indonesian, in the Quran often found cases of *anaphora* [13]. *Anaphora* is a pronoun, for example "it" which refers to an object (antecedent) in the previous sentence. *Anaphora Resolution* is a way to show a substitute word to an object that is meant previously [14]. One example of anaphora is the Surah Al-Fatihah, the insured verse which is "Hanya kepada Engkaulah kami menyembah dan hanya untuk engkaulah kami meminta pertolongan". We can see the sentence "hanya kepada Engkaulah", which refers to a particular object (antecedent). To find out the *antecedent*, we could use *Coreference Resolution* with the classification model using the *Support Vector Machine* method.

*Coreference Resolution* is the process of identifying a collection of noun phrases that refer to one and the same real-world entity [9]. According to Andrew Radford in 1988, *Coreference Resolution* is a relation between several terms that have the same reference. *Coreference Resolution* is a sub-task of *Natural Language Processing (NLP)*, the task is to find all expressions that refer to the same entity. This is an important step for *Natural Language Processing* assignments that involve understanding *Natural Language* [1].

After doing *Coreference Resolution* and produce pairs of words that have been labeled. Furthermore, the classification process is carried out, the classification process in this study uses the *Support Vector Machine* method, where the method developed by Boser, Guyon, Vapnik, and presented for the first time at the Annual Workshop on Computational Learning Theory in 1992. *Support Vector Machine (SVM)* works using the principle of *Structural Risk Minimization (SRM)* with the aim of finding the best hyperplane to separate two classes of data [7]. *Support Vector Machine* method for the *Coreference Resolution* case has been done before, carried out by Ayu Linggar Sari on *Coreference Resolution* by using the *SVM* method in Indonesian novels. Based on these results, it can be concluded that the *SVM* method is actually suitable for *Coreference Resolution* in Indonesian novels, but equipped with training data that has different patterns and is equipped with compound pronoun detection to get high accuracy values [8]. However, no research has been conducted on *Coreference Resolution* in the Al-Quran with Indonesian translations using the *SVM* method so that its accuracy is still unknown.

This research can make it easier for readers to find out the contents of Al-Quran without any misinterpretation in Al-Quran, because the results of Arabic translation into other languages such as Indonesian cause confusion to determine which pronouns in the content of the Al-Quran verses refer to where. For example in surah al-fatihah the fifth verse which is "Hanya kepada Engkaulah kami menyembah dan hanya kepada Engkaulah kami meminta pertolongan". In that verse there is the phrase or words "Hanya kepada Engkaulah" which doesn't know where to refer. This research helps the reader to understand that the phrase or word "Hanya kepada Engkaulah" (antecedent) refers to the word "Allah" (anaphor) in the first verse in surah Al-Fatihah. Knowing antecedent from a anaphor can minimize errors in understanding the contents of the Al-Quran. Based on the background or introduction that has been described, the formulation of the problem in this study is how to determine the *antecedent* of an *anaphor* which focuses on the PRON pronouns on the Al-Quran by using the *SVM* method. Knowing the *antecedent* of a pronoun is very important to understand the Qur'an [13]. Then the purpose of this research is to determine the *antecedent* of an *anaphor* in the Al-Quran by using the *SVM* method.