Implementation of Astrological Prediction and Horoscope System Using Knowledge Based

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Abstract

Knowledge-Based System is an important part of Artificial Intelligence. Knowledge systems are software systems that name structured knowledge about a field of expertise. They are able to solve some problems with their domain by using knowledge derived from experts in the field. The system intends to implement astrological prediction and horoscope system based on knowledge and experience of eastern astrologists. Knowledge are based on from idea of eastern and Indian astrologists and from papers written by earlier astrologer researches. For inference engine, the system is focused on forward chaining approach. This system will generate horoscope for both general and specific time and place. The system generates two types of information, on ascendant and current time. And also, the system assists to astrologists and can be used as training tool for astrological learners. If user have negative fade, advices on what one must be done to avert an impending event or to bring about one desired.

1. Introduction

Artificial intelligence is software that permits a computer to duplicate some functions of the human brain in a limited way. It is some and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computer to understand human intelligence. In this system, we construct knowledge base to completely perform system implementing. System is an inference engine to determine fact from an incomplete or less than perfect data set. System calculates horoscope for specific time and place by using scientific astrological computing methods and predictably knowledge. When time and place is not specific, system value the possible time and by applying forward chaining approach of rule based theory and results the closed truth. Forward chaining starts with the available data and uses inference rules to extract more data until a goal is reached. Moreover, the system generate not only the prediction but also the horoscopes, astrological learners can apply as training tool by using this system without spending many time. And also, the system directs to tantra ones, takes user satisfaction.

2. Related Work

Feldman first introduced the term forward chaining approach in rule base in [3], which provides how to apply forward chaining approach and how to generate rules for our related astrology field.

Peter Duffett represented the concept of astronomical theory in [4], which deal with the physical phenomena of heavenly bodies, constitution, motion, attraction and the resultant manifestations which are perceptible to the physical eye. And, the study of apparent coincidences between certain events on Earth and the position of the Sun, Moon and eight planets said to influence events on Earth. In this thesis, inherits these astrological rules and methods and append some additional rules.

Kyaw Than Linn introduced eastern applied astrological service system in paper [8] which base on knowledge base is used as sample rule to process in our implementing of astrological prediction system.

Yin Yin Hla presented horoscope system in [9] which applied astrological calculation methods assists to generate three horoscopes in our system.

3. Theory Background

3.1. Rule Based System

The simplest form of artificial intelligence which is generally used in industry is the rule-based system, also known as the expert system. A rule-based system is a way of encoding a human expert's knowledge in a fairly narrow area into an automated system.

There are three types of mechanisms:

(1) Forward chaining.
(2) Backward chaining.
(3) Mixed chaining.

Implementation of astrological prediction and horoscope system using knowledge based will apply forward chaining technique.

3.1.1 Forward chaining

Forward chaining is one methods of reasoning when using inference rules in artificial intelligent. It is referred in philosophical circle as modus ponens.

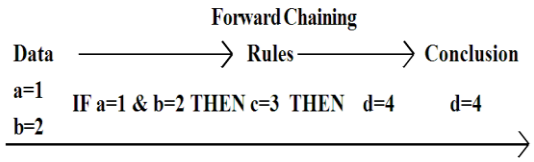

Figure 1. Forward Chaining.

Forward chaining in figure 1, starts with the available data and uses inference rules to extract more data until a goal is reached.

3.2. Knowledge-Based System

A knowledge base is a special kind of database for knowledge management, providing the means for the computerized collection, organization, and retrieval of knowledge.

Knowledge bases are categorized into two major types:

(1) Machine-readable knowledge base.
(2) Human-readable knowledge base.

System uses human-readable knowledge base. And also, will represent what is human-readable knowledge base.

3.2.1. Machine-readable Knowledge Base

Machine-readable knowledge bases store knowledge in a computer-readable form, usually for the purpose of having automated deductive reasoning applied to them. They contain a set of data, often in the form of rules that describe the knowledge in a logically consistent manner.

3.2.2. Human-readable Knowledge Base

Human-readable knowledge bases are designed to allow people to retrieve and use the knowledge they contain. They are commonly used to complement a help desk or for sharing information among employees within an organization.

3.3. Inferencing

In order to execute a rule-based expert system using the method of forward chaining need to fire or execute actions whenever appear on the action list of a rule which conditions are true. This involves assigning values to attributes, evaluating conditions, and checking to see if all of the conditions in a rule are satisfied. The inference engine finds all of the rules that are satisfied by the current contents of the data store.

4. System Design

Systems design includes the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. In this system also includes user interface component, inferencing component, knowledge base and working storage component in order to enough user and system requirements.

4.1. System Architecture

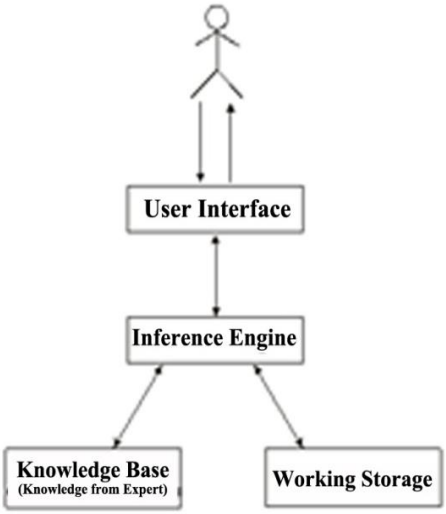

Figure 2. Architecture of Simple Expert System.

4.2. Component of the System

Figure 2 shows the components of the system. Inference engine is one of the processing element of this system. Inference means comparing the facts from the user with this knowledge of knowledge base by using forward chaining to produce appropriate prediction.

Knowledge base is a collection of rules based on expert's knowledge of eastern applied astrology and papers written by eastern astrologists. Knowledge is represented by using astrological rules.

Astrological database contains the tables such as ascendant prediction table, moon prediction table by using astrological information.

4.3. Process Flow of the System

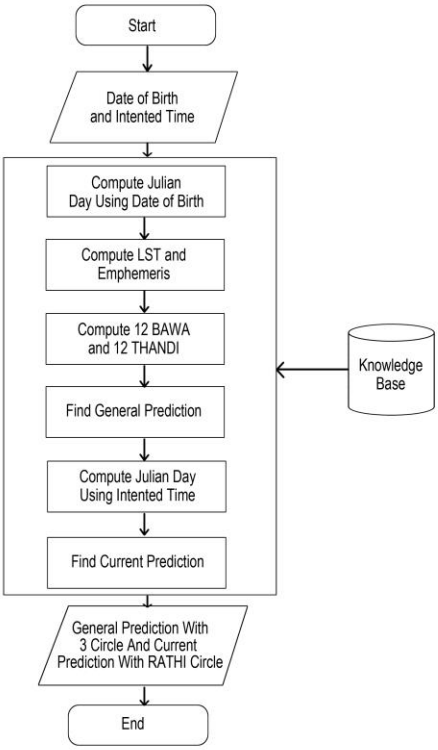

Figure 3. Process Flow of the System.

Figure 3 shows the process flow of the system. In our system, firstly user will give date of birth and intended time to calculate for other processes. The system will compute Julian day to get total day from the 1900 to the date of birth, by using date of birth. And then, the system computes local sidereal time and ephemeris which are essential immediate result to produce user satisfied output by using Julian day result. The system also computes twelve houses (Bawa) and twelve Tandi in order to produce general prediction result. Again, the system calculates the Julian day for the intended time to deal with current prediction.

All process decided their result by using Knowledge based. Finally, when all calculation process finish, the system give output like general prediction with three circles and current prediction compare with original circle and current ephemeris positioned circle.

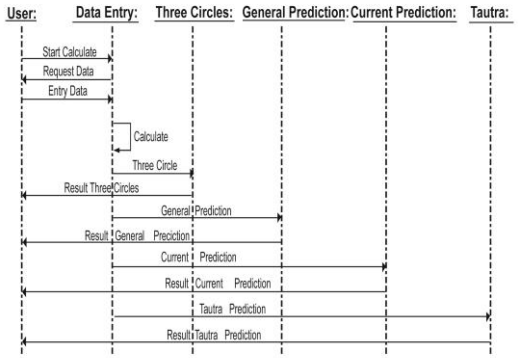

Figure 4. Sequence Diagram of the System.

Figure 4 describes the sequence flow of the system. First, when user entry the date of birth data, data entry class calculates itself and result three circles result which are original circle (Rathi circle), Nawin circle and Bawa circle. Then, data entry class produces general prediction result and shows to user. Again, generate current prediction and sends to user. Finally, tantra prediction gives to user by the tantra class.

4.3.1. Ephemeris (Planet Positions)

In eastern astrology, we need to calculate planet positions and local sidereal time. Ephemeris means calculating planet positions (Sun, Moon, Jupiter, Mercury, Mars, Saturn and Venus) at given time.

There are eight sub functions to get ephemeris:

1. JULDAY (Julian Day)
2. OBLIQ (Obliquity of the ecliptic)
3. NUTAT (Nutation)
4. ANOMALY (True anomalies)
5. SUN
6. PELMENT
7. PLANS
8. MOON

4.3.2. Local Sidereal Time (LST)

The system convert a given date time into local sidereal time. It is immediate data to produce ascendant (Lagana).To produce local sidereal time, the following formula have to use.

LST = (1/cos(DegreetoRati(degree))) * sin(DegreetoRati(23.45)) * tan(DegreetoRati(Latitude))+tan(DegreetoRati(degree))* cos(DegreetoRati(23.45))

We can get “LST” by which contain local sidereal time by processing “DegreetoRati” function which convert degree to two digit result and other mathematic functions. Parameters for each

"DegreetoRati" function may be latitude degree, longitude degree or constant degree of user entry data. Type of producing calculated "LST" result is numeric value range between zero to twenty four can assume that hour of time.

5. Result

Astrological prediction and horoscope system implement base on eastern astrological rule. The result prediction is more accurate than other approaches such as Chinese Astrology, Myanmar Traditional Astrology and so on. And also, the system, generate current prediction for user, is more efficient than previous systems.

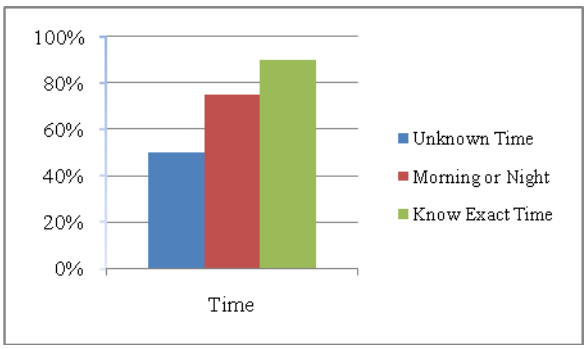

Figure 5. Accuracy of the System.

The accuracy of our system is presented by following figure 5. Accuracy is presented by the percentage. The result of system accuracy relies on the user entry date of time. If user does not know the exact time, system accuracy exists lower than 80 percent or has exact time system accuracy exists above 90 percent.

Sample three circles result is shown in figure 6 by applying *independent day of union of Myanmar* as date of birth input.

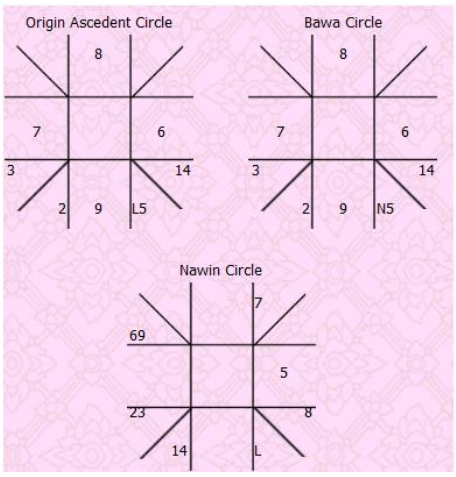

Figure 6. Sample of Three Circle Result.

The result numbers in circles in figure 6 is refers to the planets of solar system. And then, the result of LST position represents as alphabetic "L".

Planet names and numbers are match by the following:

No.	Planet Name
1.	Sun
2.	Moon
3.	Mars
4.	Mercury
5.	Jupiter
6.	Venus
7.	Saturn
8.	Rahu (virtual planet)
9.	Ketu (virtual planet)

6. Conclusion

The propose system will implement according to the previous authors suggestion. The prediction will represent by using Myanmar fonts. And then, it will present current prediction for user. And also, the system will provide BAWA circle and NAWIN circle for fresher astrologists in order to predict themselves.

The main advantage of the system for the users and astrology learners is the system can give satisfied result information and can do to avert an impending event or to bring about one desired if produced current prediction result has negative fade.

7. References

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