Heart Disease Prediction from Horoscope of a Person Using Data Mining

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Abstract- This paper deals with finding out the possibilities of suffering a person from heart disease i.e. predicting heart disease from horoscope of a person using data mining techniques. Horoscope has 12 regions each occupying 30^0. Each region is called an "house" that deals with different significations. There are total 12 planets that can occupy any house in a horoscope. According to position of the planets different angular combinations can be formed and these combinations are termed as "Yoga's" that are used in predicting features of horoscope. Each house deals with different significations and the same set of combinations obtaining in a particular house might influence the different significations comprehended by the house, in different ways. To be more specific, let us consider the 4th house of a horoscope. It is supposed to signify mother, education, land and house properties. An illiterate person may possess many houses and a long-lived mother while a highly educated person may not possess any properties. This apparent inconsistency has been reconciled to some extent by the introduction of an important factor, viz., the Karaka (indicator). This paper aims at testing new horoscopes & finding out different possible angular combinations present in that horoscope and to predict the possibility of heart disease. This is also an approach to find out whether Astrology is a scientific study and application of language of the heavenly bodies or not.

Index Terms- Data Mining, Horoscope reading, Horoscope classification, heart disease prediction etc.

I. INTRODUCTION

Planets are constantly in motion with respect to earth in the skies. There is a strong belief that the positions of Sun, Moon and some planets close to earth can give important clues about the fortunes of individual human beings and groups of human beings. And that is the basic premise of astrology. There are many theories and philosophies in vogue and they are significantly different from each other. This astrological approach is known in the world by many names. Early pioneers of modern Indian astrology, like Dr. B.V. Raman, called it "Hindu astrology", because this system was first taught by ancient Hindu sages.

This is an approach to find out whether Astrology is a scientific study and application of language of the heavenly bodies or not. Astrology is based on the fact that when the environment can effect our feelings, the moon can effect so far placed non-living (according to science) sea thus much bigger planets like Sun, Venus etc. do effect the human behavior and it is left to us to predict what changes will they bring to our lives.

Sample Horoscope:

Every house in a horoscope indicates different significances. Viz.

House	Significance
First	physical appearance of the person, his basic instincts, health, longevity, nature, and the basic vitality with which the person will live his life
Second	house influences throat and eyesight. Speech is also one of the gifts of the second house.
Third	This house rules courage, stamina, intelligence, self-esteem, and also younger siblings in a person's life and his relationship with them, writing skills, aspects of jewellery and clothes, along with prospects of short journeys.
Fourth	As sukhasthan, it denotes prosperity, domestic surroundings and happiness in general. Old age, private and public affairs and inheritance can also be determined from this house
Fifth	The fifth house defines prospects in education (Vidyasthan) and children (Putrasthan). Other than that, it governs intellect and luck.
Sixth	Sixth house tells the stories of enemies, health and service life.
Seventh	Seventh house is an important house defining spouse and conjugal happiness. This bhava includes prospects in business partnerships as

	well.
Eighth	This house indicates diseases, Death and obstacles. It also determines sources of illegal income, mental pains, the mode by which person will die, and chances of imprisonment.
Ninth	Wisdom, wealth, reputation and higher learning are all the gifts of this house.
Tenth	This house defines Father, professional life and overall status person will achieve in his/her lifetime. Honor, power and authority are defined by occupation and other worldly activities.
Eleventh	Eleventh house talks about income, monetary gains and accumulated wealth. Honor and social success also succeeds the above-mentioned qualities, hence these are also defined here.
Twelfth	Private enemies, charity, pleasures of bed, sorrow, expenditures, losses and debts are defined by the twelfth house in horoscope.

Some astronomical facts about planets:

The following is a very brief description of the planets which are of relevance in Vedic astrology.

SUN:

This is the most important of the nine grahas. In fact the sun is our nearest star in the space with planets revolving around it. It is the source of all the natural light and the heat of the earth. It provides the centripetal force to balance the centrifugal force generated by the planets going around it. Its diameter is 1.392 million kilometers, which is almost 109 times the diameter of the earth. The mass of the sun is some 323,000 times the mass of the earth. It has extremely high surface and core temperatures, and goes on producing immense amount of energy. At one time the sun was considered as the center of the universe (this was never the view of Vedic astrology), but now we know it lies near the edge of the spiral arm of the milky way galaxy, lying some 30,000 light years from the galactic center, and sharing the rotation of the galaxy.

MOON:

It is a satellite of the earth. In Vedic astrology it is of great importance. It is the fastest moving planet and has the usual west to east movement along the zodiac. It has relatively small size, its diameter being only about 3476 kilometers. Its average distance from the earth is about 384,400 kilometers. It always presents the same face towards earth because it takes the same time to rotate once on it's axis as it does to revolve once around the earth i.e.27.32 days. Since the rotation is a uniform motion, while the motion in orbit is not, we may sometimes see an extra strip of the moon's surface on one or the other side. Some 59% of the total

surface of the moon may thus be visible to us on the earth at one time or the other. This phenomenon is called as liberation. The luminosity of the moon is caused by the light from the sun. It is the varying relative positions of the sun and the moon that produce the phases of the moon. These lunar phases, earlier discussed as tithis, are extremely important in Vedic astrology

MARS

Mars is the first of the outer planets and fourth in order of distance from the sun. Its orbit is highly elliptical as compared to that of earth, due to which its closest position may be only 56 million kms. Whereas at it's farthest it may reach up to 100 kms. The brilliance of the mars depends upon its location. Mars is only twice as large than earth's moon. It's diameter being 6786 kms. It is at a mean distance of 227.8 million kms from the sun. The synodic period of the mars is 780 days, which is the interval between martian oppositions to the sun, with the earth lying in between. Mars rotates on it's own axis in 1.026 days and has an orbital period of 687 days. Mars has two small satellites called phobo and deimos.

MERCURY

Mercury is the planet nearest to the sun and hence is extremely hot. It has a very eccentric orbit so it's minimum distance (periphelion) from the sun is much less than it's maximum distance (aphelion). It's mean distance from the sun is about 58 kms. and it's diameter is 4870 kms, and it's maximum inclination of about 7 degrees on either side of the ecliptic. Mercury rotates once round it's axis in 58.65 days which is 2/3rd of it's orbital period of about 88 earth days. (planet has maximum speed at periphelion and minimum at aphelion).

JUPITER

Jupiter is the largest planet of the solar system, it's mass exceeding that of all the other planets combined together. It's rapid spin (once in 9 hours 50 minutes) has caused it to bulge at equator (diameter at equator 143,000 kms.) and to flatten at the poles (diameter 133,000 kms.). It is 318 times as massive as the earth and less than the 1000th part of the sun. It's mean distance from the earth is 778 million kms. And has an orbital period of 11.86 earth years. Being far away from the sun, it is a cold planet with it's gaseous cloud having a temperature of 140 deg. below freezing point. There are perhaps 16 satellites which circle around Jupiter

VENUS

Venus is the second nearest planet to the sun. It's dense cloudy atmosphere reflects light extremely efficiently and accounts for the brilliance of this planet in the sky. The maximum inclination of this orbit is about 3.24 deg. on either side of the ecliptic. It is located at a mean distance of 108 million kms. and has a diameter of about 12,000 kms. The rotation period of venus is 242.6 days. An important fact about the rotation of venus is that it is retrograde, that is opposite to the general direction of rotations in the solar system. The orbital period of venus is about 224.7 days.

SATURN

It is the last of the naked eye planets. It's mean distance from the sun is 1426 million kms. It's rotation period is

approximately 10 hours 14 minutes, and it's orbital period is 29.46 years. Saturn has a diameter of over 142 thousand miles at the equator. Being further away from the sun, saturn is a cold planet . It is larger than the rest of the planets (expect jupiter) and is about 95 times as massive as the earth. It's characteristic feature is the presence of rings around it. At least twenty satellites are known to revolve around the planet. The extra - saturnine planets (Uranus, Neptune and Pluto) need the help of a telescope for their identification They do not form a part of predictive vedic astrology and are, therefore, not treated of here.

Astrologers designate the 12 signs as follows:

Aries, the first sign of the zodiac, is a cardinal fire sign. It is a positive, masculine sign, ruled by the planet Mars. Its symbol is the ram, and its glyph (symbol) is said to represent a ram's horns. It takes its name from the Greek god of war. Aries is associated with the head, and people with an Aries sun sign (the Sun is in the sign Aries in their natal chart) are prone to headaches and injuries to the head and face. The association of the head with Aries is the source of the expression "head-strong," which characterizes people with a strong Aries nature. Aries is dry, vernal and equinoctial (it begins on the vernal equinox), diurnal, movable, commanding, eastern, choleric, and aggressive. The native, that is, the person born under its influence, is tall of stature, of a strong but spare make, long face and neck, thick shoulders, piercing eyes, sandy or red hair, and brown complexion. The native's disposition is warm,hasty, and passionate. The aspects of the planets however, may materially alter these traits. (Aspects are the angular relationships between various points in a boroscope; in a natal chart the planets represent the various facets of one's psyche, and aspects between them indicate how these facets conflict or work together.) This sign rules the head and face. As the first sign, the key phrase for Aries is "I am," representing the birth of awareness.

Taurus, the second sign of the zodiac, is a fixed earth sign. It is a negative, feminine sign, ruled by the planet Venus. Its symbol is the bull, and its glyph is said to represent a bull's head and horns. It takes its name from the Greek word for "bull." A sign known for its stubbornness, it is the source of our expressions "bullheaded" and "stubborn as a bull." Taurus is associated with the throat and neck. People with a Taurus sun sign, although they often have beautiful voices, are also prone to sore throats, thyroid irregularities, and other neck problems. Taurus is cold and dry, melancholy, nocturnal, and southern. When influential in a nativity, it usually produces a person with a broad forehead, thick lips, dark curling hair, and melancholy, slow to anger, but when once enraged, violent, furious, and difficult to appease. Places ruled by Taurus are stables, cow houses, cellars and low rooms, and all places used for or by cattle. The key phrase for Taurus is "I have."

Gemini, the third sign of the zodiac, is a mutable air sign. It is a positive, masculine sign, ruled by the planet Mercury. Its symbol is the twins, and its glyph is said to represent a set of twins. It takes its name from the Latin word for "twins." Gemini is associated with the shoulders, arms, hands, and lungs. The native is tall and straight with long arms and well-formed hands and feet, rather dark complexion, brown hair, and hazel eyes. The native is strong and active in person, sound and acute in judgment, lively, playful, and generally skillful in business.

Places ruled by Gemini are hilly and high grounds, the tops of houses, wainscoted rooms, halls and theaters, barns, storehouses, and stairs. The key phrase for Gemini is "I think."

Cancer, the fourth sign of the zodiac, is a cardinal water sign. It is a negative, feminine sign, ruled by the Moon. Its symbol is the crab, and its glyph is said to represent the two claws of a crab. It takes its name from the Latin word for "crab." A moody sign, it is the source of the expression "crabby." Cancer is associated with the breasts and the stomach. It is a cold, moist, nocturnal, and exceedingly fruitful sign, more so than any other. The native is fair and pale, short and small, with the upper part of the body larger in proportion to the lower, a round face, light hair, and blue or gray eyes. The native is phlegmatic and heavy in disposition; weak in constitution, and of a small voice. Places associated with Cancer are the sea and all rivers, swamps, ponds, lakes, wells, ditches, and watery places. The key phrase for Cancer is "I feel."

Leo, the fifth sign of the zodiac, is a fixed fire sign. It is a positive, masculine sign, ruled by the Sun. Its symbol is the lion, and its glyph is said to be a modified version of the initial letter of its Greek name. It takes its name from the Latin word for "lion." Leo is associated with the back and, especially, the heart. The association of Leo with the heart is the astrological basis for the common expression "lion hearted." Leo is hot, dry, commanding, and very barren. When this sign ascends in a nativity, the individual has a tall and powerful frame and is well shaped, with an austere countenance, light, yellowish hair, large piercing eyes, commanding aspect, and ruddy complexion. The character is fierce and aggressive, yet open, generous, and courteous. This sign is more modified by planetary influences than any other. Leo governs woods, forests, deserts and hunting grounds, and fireplaces and furnaces. The key phrase for Leo is "I will."

Virgo, the sixth sign of the zodiac, is a mutable earth sign. It is a negative, feminine sign, ruled by the planet Mercury. Its symbol is a young woman, and its glyph is said to represent a serpent. Virgo takes its name from the Latin word for "virgin." Virgo is associated with the nervous system and, especially, with the bowels. Virgo is cold, dry, barren, and melancholy. The native is handsome and well shaped, slender, of average stature, with a clear, ruddy or brown complexion, dark hair and eyes, a rather round face, and a voice sweet and clear but not strong. The character is amiable and benevolent, witty and studious, but not persevering; and if not opposed by planetary aspects, apt to oratory. Virgo is associated with cornfields and granaries, studies and libraries. The key phrase for Virgo is "I analyze."

Libra, the seventh sign of the zodiac, is a cardinal air sign. It is a positive, masculine sign, ruled by the planet Venus. Its symbol is the scales, which its glyph is said to represent. It takes its name from the Latin word for "pound weight," or "scales." Libra is associated with the lower back, buttocks, and kidneys. Libra is sanguine, hot, moist, and diurnal. The native is tall and well made, very handsome, of a fine, ruddy complexion in youth, which changes to a deep red with advancing years. The native has long, flaxen hair, gray eyes, a courteous disposition, and a just and upright character. The places Libra rules are mountains, sawpits, and newly felled woods. The key phrase for Libra is "I balance."

Scorpio, the eighth sign of the zodiac, is a fixed water sign. It is a negative, feminine sign, ruled by the planet Pluto (in traditional astrology it was ruled by Mars). Its symbology is complex, being the only sign with three symbols—the scorpion, the snake, and the eagle. Its glyph is said to represent a serpent. It takes its name from the Latin word for "scorpion." Scorpio is associated with the sexual organs and the kidneys. Scorpio is a cold, nocturnal sign. The native has a strong, robust, corpulent body, is of average stature, and has a broad visage, dark but not clear complexion, dark gray or light brown eyes, black or very dark brown hair, short, thick legs, and a thick neck. Scorpio governs swampy grounds and stagnant waters, orchards and ruinous houses, especially near water. The key phrase for Scorpio is "I desire."

Sagittarius, the ninth sign of the zodiac, is a mutable fire sign. It is a positive, masculine sign, ruled by the planet Jupiter. Its symbol is the centaur (sometimes, alternately, the archer) and its glyph is an arrow, which refers to the arrow in the bow that the centaur is holding. It takes its name from the Latin word sagitta, "arrow." Sagittarius is associated with the hips, the thighs, and the liver. Sagittarius is hot, dry, and diurnal. The native is well formed and of slightly above-average stature, with fine chestnut hair, but inclined to baldness, a visage somewhat long but ruddy and handsome. The body is strong, stout, and hardy. The native is inclined to horsemanship and field sports, careless of danger, generous and intrepid, but hasty and careless. Sagittarius rules the hips and is the cause of gout, rheumatism, and disorders that affect the muscles. Accidents and disorders occasioned by intemperance come under the government of this sign. Sagittarius is associated with stables and parks. The key phrase for Sagittarius is "I see."

Capricorn, the tenth sign of the zodiac, is a cardinal earth sign. It is a negative, feminine sign, ruled by the planet Saturn. Its symbol is a goat with a fishtail, and its glyph is said to reflect this symbol. It takes its name from the Latin capricornus, "goat horn." Capricorn is associated with the bones and, especially, with the knees. It is a cold, dry, nocturnal, domestic sign. The native usually is tall, of slender stature and long, thin countenance, with a small beard, dark hair and eyes, long neck, and narrow chest and chin. The native is cheerful and collected, talented and upright. Ruling the knees and hips, Capricorn governs all diseases that afflict them, and also melancholy diseases such as hypochondriasis and hysteria. The places over which it has power are workshops and fallow grounds. The key phrase for Capricorn is "I use."

Aquarius, the eleventh sign of the zodiac, is a fixed air sign. It is a positive, masculine sign, ruled by the planet Uranus (before the outer planets were discovered, it was said to be ruled by Saturn). Its symbol is the water bearer, and its glyph is a pair of wavy lines representing water. Aquarius is associated with the shins, ankles, and the circulatory system. Aquarius is a hot, moist, rational, sanguine sign. The native is a well-made and robust person, of above-average stature, long face, but with a pleasing and delicate countenance, clear, bright complexion, and flaxen hair. The native is fair, open, and honest. Aquarius rules the legs and ankles and causes all diseases that affect them: lameness, swelling, cramping, and gout. It governs mines and quarries, flying machines, roofs of houses, wells, and conduits. The key phrase for Aquarius is "I know."

Pisces, the twelfth sign of the zodiac, is a mutable water sign. It is a negative, feminine sign, ruled by the planet Neptune (in traditional astrology it was ruled by Jupiter). Its symbol is two fish moving in opposite directions, tied together by a rope. Its glyph is said to be a stylized representation of this symbol. It takes its name from the plural of the Latin word for "fish." Pisces is associated with the feet. It is a cold, moist, nocturnal, and extremely fruitful sign, second only to Cancer. The native is short and ill shaped, fleshy, if not corpulent, with thick, round shoulders, light hair and eyes, pale complexion, and a large head and face. The native has a weak and vacillating disposition and is well-meaning but devoid of energy. Pisces rules the feet and causes lameness and every kind of disorder occasioned by watery humors. Pisces governs the same places as Cancer, except for the sea and rivers. The key phrase for Pisces is "I believe."

II. HOROSCOPE CHART

Is the one in which the order of the houses is fixed. It consists of four central rhomboidal houses (which are numbered 1, 4,7 and 10, starting from the upper central rhomboid) and eight triangular houses. The sign rising at the time of birth is marked in the first house or the upper central rhomboid, and the remaining signs marked in regular order in an anti-clockwise direction.
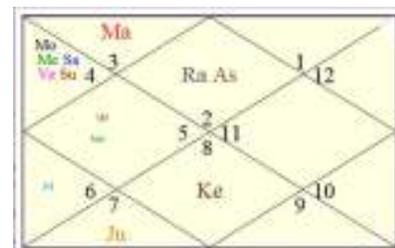
III. CREATING A DATABASE FROM ABOVE HOROSCOPE

Every horoscope contains 12 planets, 12 different signs & 12 different houses. Depending on the placement of all these different angular combinations are formed. A horoscope can be identified by 13 attributes viz. Ascendant sign & signs of 12 Planets. A 14th attribute may be added to represent whether the person will suffer from heart disease or not.

IV. TABLE STRUCTURE

Attribute	Constraints	Datatype
Ascendent	Not Null	Varchar
Sun	Not Null	Number
Moon	Not Null	Number
Mars	Not Null	Number
Mercury	Not Null	Number
Jupiter	Not Null	Number
Venus	Not Null	Number
Saturn	Not Null	Number
Rahu	Not Null	Number
Ketu	Not Null	Number
Uranus	Not Null	Number
Neptune	Not Null	Number

Pluto	Not Null	Number
HeartDisease	Not Null	YES/NO

The values are inserted in the database as,

Ascendent	2
Sun	4
Moon	4
Mars	3
Mercury	4
Jupiter	7
Venus	4
Saturn	4
Rahu	2
Ketu	8
Uranus	5
Neptune	5
Pluto	6
HeartDisease	NO

The database can be created for many such horoscopes. This database will serve as the training set in predicting the newer dataset. The training set will contain many horoscopes (For testing, I used 2000 sample horoscope that definitely suffer from Heart Disease & 2000 sample horoscopes that do not suffer from Heart Disease) & is given as input to the classifying algorithm in WEKA.

V. INTERFACING WEKA WITH HOROSCOPE
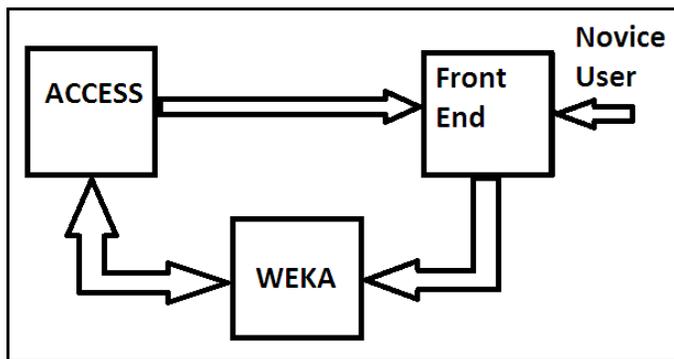
Fig: Applying Horoscope to the WEKA

VI. WEKA (WAIKATO ENVIRONMENT FOR KNOWLEDGE ANALYSIS)

WEKA is a collection of machine learning algorithms for data mining tasks. The algorithms can either be applied directly to a dataset or called from your own Java code. WEKA contains tools for data pre-processing, classification, regression, clustering, association rules, and visualization. It is also well-suited for developing new machine learning schemes.

A database created above can be given as input to the WEKA algorithm such as Neural Networks, Lazy, Decision

Table etc. & a model can be built up from this input. This model is then used in predicting the nature of new horoscope.

VII. RESULTS

Sr. No	Training Set Size	Algorithm	Accuracy (%)
1	4000	Decision Table	82
2	4000	MultilayerPerceptron	76
3	4000	J48	52
4	4000	LWL	91

VIII. CONCLUSION

Predicting heart disease from horoscope of a person is successfully find out using data mining techniques.

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