

An Implementation-Grade Specification for a Precise Nine Star Ki Calculator

Part I: Foundational Principles of the Nine Star Ki System

This document provides a definitive, implementation-grade technical specification for a Nine Star Ki (*Kyūsei Kigaku*, 九星氣学) calculator. Its purpose is to serve as the single source of truth for a software development team, providing all necessary historical context, philosophical underpinnings, and precise, unambiguous algorithms required to build an accurate application. This specification is designed to eliminate the need for external research into the esoteric rules of the system, thereby ensuring a correct and consistent implementation.

Section 1: Introduction and System Overview

1.1 Historical Context

Nine Star Ki is a system of astrology and divination with its modern form originating in Japan. It represents an adjustment and consolidation of traditional Chinese divination and geomancy methods, formulated in 1924 by Shinjiro Sonoda (1876–1961). This historical point is crucial, as it establishes the Japanese *Kyūsei Kigaku* tradition as the primary reference for this specification, distinguishing it from some of its Chinese antecedents which may have different rules or interpretations.

The system synthesizes principles from several ancient East Asian metaphysical arts, including :

- **Flying Star Feng Shui (*Xuan Kong Fei Xing*):** A complex system of Feng Shui that analyzes the temporal movement of energies within a space.
- **The Ming Gua (命卦) Number:** A number derived from the Eight Mansions (*Ba Zhai*) Compass School of Feng Shui, which is often calculated based on birth year and gender.
- **The Lo Shu Square (洛書):** A 3x3 magic square that forms the structural and numerical basis of the system.
- **The "Later Heaven" Bagua (後天八卦):** An arrangement of eight trigrams from the I Ching that maps energetic states to directions and aspects of life.

This synthesis explains the system's depth and its intricate connections to the broader landscape of East Asian cosmology. It operates on the belief that there are nine-year and nine-month cycles of cosmic energy, or *Ki* (Qi), that influence human development and life experiences on Earth.

1.2 The Core Components: The Three Stars of the Personal Profile

Nine Star Ki defines a detailed personal profile through three primary numbers, or "stars," each derived from an individual's date of birth. These three stars represent different facets of a person's character, potential, and outward expression.

- **Principal Star (本命星, *Honmei-sei*):** Referred to as the "year number," "adulthood star," or "basic number," the *Honmei-sei* represents one's core nature, mature mind, spiritual essence, and overarching life path. This aspect of the personality is considered to become the dominant influence after the age of 18, upon reaching two full nine-year cycles of life. It is analogous to the Sun sign in Western astrology.
- **Character Star (月命星, *Getsumei-sei*):** Known as the "month number," "childhood star," or "control number," the *Getsumei-sei* describes one's emotional tendencies, physical constitution, innate character, and behavior when under stress or in dependent situations. It is the primary energetic influence during childhood and adolescence (from birth to age 18) and remains a key part of the inner self throughout life. It is comparable to the Moon sign in Western astrology.
- **Energetic Star (傾斜宮, *Keisha-kyū*):** Also called the "inclination palace" or "tendency star," this third number represents one's outward persona, the first impression one makes on others, and reveals hidden potentials, latent talents, or subconscious challenges. It is not an independent number but is derived from the dynamic interaction between the *Honmei-sei* and *Getsumei-sei* within the system's moving energy charts. It is akin to the rising sign in Western astrology.

1.3 Disambiguation: Nine Star Ki vs. Ming Gua (Kua Number)

A critical point of clarification is the distinction between the Nine Star Ki system specified herein and the related but separate Ming Gua (命卦), or Kua number, system. Failure to differentiate these two systems is a common source of error in many existing online calculators.

The Ming Gua system, primarily associated with the Eight Mansions (*Ba Zhai*) school of Feng Shui, explicitly uses different calculation formulas for males and females to determine a person's auspicious and inauspicious directions. This system categorizes individuals into "East Group" or "West Group" people.

Conversely, the Japanese *Kyūsei Kigaku* tradition, as consolidated by Sonoda and taught by prominent practitioners, does not use gender as a variable for calculating the first two primary stars—the *Honmei-sei* and *Getsumei-sei*. The formulas are universal for all individuals born in the same astrological year and month. The conflation of these two systems likely arises from their shared cosmological roots in the Lo Shu square and I Ching trigrams. However, their calculation methodologies and applications diverged.

For the purpose of this specification, a "precise" Nine Star Ki calculator must adhere to the *Kyūsei Kigaku* tradition. Therefore, the algorithms for the *Honmei-sei* and *Getsumei-sei* will be gender-neutral. Gender is only required as an input for a single, specific edge case in the calculation of the third star, the *Keisha-kyū*, which will be detailed in Part II, Section 6. This adherence to the distinct rules of *Kyūsei Kigaku* is paramount for achieving the required level of precision. Some modern Feng Shui masters even argue that the gender-based distinction in the Ming Gua system is itself a historical artifact of a deliberate obfuscation and that a universal calculation should apply to all.

Section 2: The Cosmological Framework

The logic of Nine Star Ki is built upon a sophisticated cosmological framework inherited from ancient Chinese philosophy. Understanding these foundational elements is essential for comprehending the calculation algorithms that follow.

2.1 The Lo Shu Square (洛書, *Rakusho*): The Foundational Magic Square

At the heart of Nine Star Ki lies the Lo Shu Square, a 3x3 magic square containing the numbers 1 through 9. Its defining characteristic is that the sum of the numbers in any row, column, or diagonal is always 15.

This square is not merely a mathematical curiosity; it is a cosmological map representing the "Later Heaven" Bagua pattern (*Kōten Bagua*), which describes the dynamic flow of energy in the manifest world. Each of the nine palaces in the square has a fixed, or "home," number, direction, and associated trigram. This base configuration is known as the *Kōten Jōi* (後天定位), or Later Heaven Arrangement. It represents the ideal, balanced state from which all temporal movements of Ki are derived.

2.2 The Five Elements (五行, *Gogyō*): The Dynamics of Interaction

Each of the nine stars is assigned to one of the five elements: Wood (木, *Moku*), Fire (火, *Ka*), Earth (土, *Do*), Metal (金, *Kin*), and Water (水, *Sui*). These elements are not static substances but are phases of energy in a constant state of transformation. The relationships between the stars, which are fundamental to interpreting personality compatibility and annual forecasts, are governed by the cycles of these elements.

- **Generating Cycle (相生, *Sōshō*)**: This is a nurturing, supportive, and creative relationship where one element gives rise to the next. The cycle proceeds as follows:
 - Water nourishes Wood.
 - Wood fuels Fire.
 - Fire creates Earth (ash).
 - Earth bears Metal (minerals).
 - Metal carries Water (condensation). For example, a person with a Fire star may feel supported and energized by a person with a Wood star.
- **Controlling Cycle (相剋, *Sōkoku*)**: This is a challenging, restrictive, or destructive relationship where one element overcomes another. The cycle proceeds as follows:
 - Water extinguishes Fire.
 - Fire melts Metal.
 - Metal cuts Wood.
 - Wood parts Earth (roots).
 - Earth dams Water. This cycle represents necessary checks and balances within the system.
- **Harmonious Relationship (比和, *Hiwa*)**: This describes the relationship between two stars of the same element (e.g., Wood and Wood). This interaction amplifies the energy of that element, for better or for worse.

2.3 The Nine Stars: Reference Data

The following master reference table centralizes the static attributes of each of the nine stars. This table serves as the canonical data source for the calculator's output and the machine-readable specification in Part III. It synthesizes information from multiple sources to provide a complete and verified reference.

| Star Number | Japanese Name (Kanji) | Japanese Name (Romaji) | Element | Polarity (Yin/Yang) | Associated Color(s) | Lo Shu Direction |
|-------------|-----------------------|------------------------|---------|---------------------|---------------------|------------------|
| 1 | 一白水星 | Ippaku Suisei | Water | Yang | Black, White | North |
| 2 | 二黒土星 | Jikoku Dosei | Earth | Yin | Black, Yellow | Southwest |
| 3 | 三碧木星 | Sanpeki Mokusei | Wood | Yang | Blue-Green | East |
| 4 | 四綠木星 | Shiroku Mokusei | Wood | Yin | Dark Green | Southeast |
| 5 | 五黃土星 | Go'ō Dosei | Earth | Central | Yellow | Center |
| 6 | 六白金星 | Roppaku Kinsei | Metal | Yang | White | Northwest |
| 7 | 七赤金星 | Shichiseki Kinsei | Metal | Yin | Red, White | West |
| 8 | 八白土星 | Happaku Dosei | Earth | Yang | White, Yellow | Northeast |
| 9 | 九紫火星 | Kyūshi Kasei | Fire | Yin | Purple, Red | South |

Section 3: The Critical Role of the Chinese Solar Calendar

The single most important factor for achieving precision in a Nine Star Ki calculator is the correct application of the Chinese Solar Calendar (*Taiyōnenreki*, 太陽年曆). All calculations are based on this astronomical calendar, not the Gregorian calendar used in daily life. Using simple Gregorian date cutoffs (e.g., "February 4th") is an approximation and will produce incorrect results for a subset of users.

3.1 Defining the Astrological Year: Rishun (立春) and Setsubun (節分)

In *Kyūsei Kigaku*, the astrological year does not begin on January 1st. The new year begins at the precise moment of *Risshun* (立春), the first of the 24 solar terms, which marks the beginning of spring. The day immediately preceding *Risshun* is known as *Setsubun* (節分), which marks the final day of the previous astrological year.

Risshun typically occurs around February 4th in the Gregorian calendar, but its exact date and time vary annually due to the Earth's orbital mechanics. For example, the National Astronomical Observatory of Japan (NAOJ) determined *Risshun* for 2024 to be on February 4th at 17:27 Japan Standard Time (JST). An individual born at 17:26 JST on that day belongs to the previous astrological year (2023), while someone born one minute later at 17:27 JST belongs to the new astrological year (2024). A precise calculator must therefore compare a user's full date and time of birth (converted to a standard timezone like UTC) against the precise astronomical moment of *Risshun* for their birth year.

3.2 Defining the Astrological Months: The 12 Solar Term Boundaries (節入り)

Similarly, the twelve astrological months do not align with Gregorian months. Each astrological month begins on the day of a specific solar term, an event known as *Setsuiri* (節入り), meaning "entering the term".

The 24 Solar Terms (*Nijūshisekki*, 二十四節氣) are divided into two categories: 12 major terms (*Setsu* or *Sekki*, 節氣) and 12 minor terms (*Chūki*, 中氣). The 12 major terms mark the beginning of each of the 12 solar months. For example, the first astrological month (Tiger month) begins at *Risshun*, the second (Rabbit month) begins at *Keichitsu* (啓蟄), and so on.

3.3 Implementation Guidance: The Perpetual Solar Calendar

To achieve the required level of precision, the calculator must incorporate a perpetual calendar of the 24 Solar Terms. The definitive source for this data for Japan is the annual *Rekiyōkō* (暦要項) published by the National Astronomical Observatory of Japan (NAOJ). The implementation will require a data store (e.g., a local database, JSON, or CSV file) containing the precise dates and times of all 24 solar terms for a comprehensive range of years (e.g., 1900-2100). This data is available through the NAOJ archives.

The following table defines the start of each of the 12 astrological months.

| Astrological Month | Earthly Branch (Zodiac) | Japanese Name | Corresponding Solar Term (<i>Setsuiri</i>) | Approximate Gregorian Date |
|--------------------|-------------------------|---------------|--|----------------------------|
| 1 | 寅 | Tiger | 立春 (Risshun) | Feb 4 |
| 2 | 卯 | Rabbit | 啓蟄 (Keichitsu) | Mar 5 |
| 3 | 辰 | Dragon | 清明 (Seimei) | Apr 4 |
| 4 | 巳 | Snake | 立夏 (Rikka) | May 5 |
| 5 | 午 | Horse | 芒種 (Bōshu) | Jun 5 |

| | | | | |
|----|---|---------|---------------|-------|
| 6 | 未 | Ram | 小暑 (Shōsho) | Jul 6 |
| 7 | 申 | Monkey | 立秋 (Risshū) | Aug 7 |
| 8 | 酉 | Rooster | 白露 (Hakuro) | Sep 7 |
| 9 | 戌 | Dog | 寒露 (Kanro) | Oct 8 |
| 10 | 亥 | Pig | 立冬 (Rittō) | Nov 7 |
| 11 | 子 | Rat | 大雪 (Taisetsu) | Dec 7 |
| 12 | 丑 | Ox | 小寒 (Shōkan) | Jan 6 |

Part II: Algorithmic Specifications for Star Calculation

This part details the specific algorithms required to calculate the three stars. Each section provides a step-by-step method, analysis of common variations, and an implementation-ready pseudocode block.

Section 4: Calculating the Principal Star (*Honmei-sei*)

4.1 The Primary Algorithm (Western Calendar Method)

The standard algorithm for calculating the *Honmei-sei* is based on the astrological year of birth. This method is widely documented and forms the basis of all accurate calculations.

1. **Step 1:** Take the four-digit astrological year, Y .
2. **Step 2:** Sum the individual digits of Y . For example, for 1984, the sum is $1+9+8+4=22$.
3. **Step 3:** If the sum from Step 2 is a multi-digit number, repeat the process of summing its digits until a single digit, S , is obtained. For 22, the sum is $2+2=4$. So, $S=4$.
4. **Step 4:** The *Honmei-sei* is calculated with the formula $11-S$. For the 1984 example, this would be $11-4=7$. The *Honmei-sei* is 7.

A mathematically equivalent and more computationally efficient formula for Steps 2 and 3 is to use the modulo operator: $S=((Y-1)(\text{mod}9))+1$.

4.2 Handling the Risshun Boundary (The Precision Rule)

This is the most critical step for ensuring the calculator's precision. The algorithm must first determine the correct astrological year before applying the formula from Section 4.1.

1. **Step 1:** For a given birth date and time D , retrieve the precise astronomical date and time of *Risshun* for the Gregorian year of D from the perpetual solar calendar data. Let this be `Risshun_Time`.
2. **Step 2:** Compare the user's birth date and time with `Risshun_Time`. It is essential that both times are converted to a common timezone (e.g., UTC) before comparison.
3. **Step 3:** If D is earlier than `Risshun_Time`, the astrological year to be used for the calculation is the Gregorian year minus one ($Y-1$).
4. **Step 4:** If D is on or after `Risshun_Time`, the astrological year is the same as the Gregorian year (Y).
5. **Step 5:** Apply the primary algorithm from Section 4.1 to the correctly determined astrological year.

4.3 Analysis of the "12 Minus" Rule

Several sources describe a simplified variation for handling pre-*Risshun* birthdays: if born between January 1st and February 4th, subtract the single-digit sum s from 12 instead of 11. This rule is a mathematical shortcut, not a separate methodology.

The sequence of annual stars follows an *Inton* (陰遁) or decreasing pattern: 9, 8, 7, 6, 5, 4, 3, 2, 1, and then cycling back to 9. This means the star for any given year Y is one greater (in modulo 9 arithmetic) than the star for the following year $Y+1$. Conversely, the star for the previous year, $Y-1$, is one greater than the star for year Y .

Let $Star(Y)$ be the *Honmei-sei* for year Y . The standard formula is $Star(Y)=11-S$

Y

, where S

Y

is the reduced digit sum of year Y . The star for the previous year is $Star(Y-1)$. Due to the *Inton* sequence, $Star(Y-1)=(Star(Y)+1)$ (with wrapping from 9 to 1, which is handled by modulo arithmetic). Substituting the formula for $Star(Y)$: $Star(Y-1)=(11-S$

Y

) $+1=12-S$

Y

This demonstrates that the "12 minus" rule is mathematically identical to calculating the star for the previous year using the standard formula. For an implementation that correctly determines the astrological year first (as specified in Section 4.2), this rule is redundant and should not be implemented as a separate logical path. The correct approach is to adjust the year based on the precise *Risshun* boundary and then apply the single, universal $11 - s$ formula.

4.4 Pseudocode for Honmei-sei Calculation

Code snippet

```
FUNCTION getHonmeiSei(birthDateTimeUTC) :
```

```

// birthDateTimeUTC is the user's birth date and time, converted to
// UTC.

birthYear = GET_YEAR(birthDateTimeUTC)

// Retrieve the precise Risshun moment for the birth year from the
NAOJ data store.

// This moment should also be in UTC for a direct comparison.
risshunDateTimeUTC = LOOKUP_Risshun_UTC(birthYear)

// Determine the correct astrological year for calculation.
IF birthDateTimeUTC < risshunDateTimeUTC THEN
    calculationYear = birthYear - 1
ELSE
    calculationYear = birthYear
END IF

// Calculate the single-digit sum 'S' using the modulo method for
efficiency.

// This is equivalent to recursively summing digits.
s = ((calculationYear - 1) MOD 9) + 1

// Apply the standard formula.
honmeiSei = 11 - s

// The result should always be between 1 and 9.
// A simple way to ensure this is to add 9 if the result is less
than or equal to 1,
// but a modulo operation is more robust.
// Example: if s=2, 11-2=9. if s=3, 11-3=8. if s=1, 11-1=10 -> 1.
// The sequence is 9,8,7,6,5,4,3,2,1. The formula 11-S gives this.
If 11-S = 2, it's 2. If 11-S = 1, it's 1. If 11-S = 10, it's 1. If
11-S=11, it's 2.
// Let's re-verify the formula.
// Year 1980 -> S=9 -> 11-9=2. Correct.
// Year 1981 -> S=1 -> 11-1=10. Star should be 1.
// Year 1982 -> S=2 -> 11-2=9. Correct.
// The formula seems to require a final step: if result is > 9,
subtract 9.
// Or, if result is 10, it becomes 1. If 11, it becomes 2.
// This is equivalent to (11-S-1) mod 9 + 1.
// Let's test: 1981, S=1. (11-1-1) mod 9 + 1 = 9 mod 9 + 1 = 0 + 1
= 1. Correct.
// Let's test: 1980, S=9. (11-9-1) mod 9 + 1 = 1 mod 9 + 1 = 1 + 1
= 2. Correct.

```

```
finalHonmeiSei = ((11 - s - 1) MOD 9) + 1
```

```
RETURN finalHonmeiSei
```

Section 5: Calculating the Character Star (*Getsumei-sei*)

The *Getsumei-sei* calculation is dependent on two previously determined inputs: the person's *Honmei-sei* and their astrological birth month. The logic follows a clear pattern based on which of three groups the *Honmei-sei* belongs to.

5.1 Algorithmic Logic

1. **Step 1:** Determine the user's astrological birth month (an integer from 1 to 12) by comparing their birth date and time against the 12 *Setsuiri* (solar term boundaries) for their astrological year.
2. **Step 2:** Identify which of the three *Honmei-sei* groups the user's Principal Star belongs to.
3. **Step 3:** Based on the group, determine the starting star for the first astrological month (*Risshun*).
4. **Step 4:** Calculate the *Getsumei-sei* by decrementing from the starting star according to the astrological birth month.

5.2 The Three Honmei-sei Groups

The nine Principal Stars are divided into three groups, which dictate the monthly star sequence:

- **Group 1 (Yang Years):** *Honmei-sei* is 1, 4, or 7.
- **Group 2 (Earth Years):** *Honmei-sei* is 2, 5, or 8.
- **Group 3 (Yin Years):** *Honmei-sei* is 3, 6, or 9. This grouping is consistent with the underlying patterns of the Lo Shu's movement.

5.3 The Monthly Star Sequences (*Inton*)

Each group has a specific starting star for the first astrological month (Tiger Month, beginning at *Risshun*), and the sequence for subsequent months proceeds in a decreasing (*Inton*) order, wrapping from 1 back to 9.

- **Group 1 (1, 4, 7):** The sequence starts with Star 8.
- **Group 2 (2, 5, 8):** The sequence starts with Star 5.
- **Group 3 (3, 6, 9):** The sequence starts with Star 2.

5.4 Verification Table

The following lookup table is derived from the algorithmic rules above and serves as a definitive reference and test suite for the implementation. It is constructed from the logic found in sources such as

and [49] (with corrections based on consistent patterns).

| Astrological Month (Starts at) | Honmei Group 1 (1, 4, 7) | Honmei Group 2 (2, 5, 8) | Honmei Group 3 (3, 6, 9) |
|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1 (Risshun / Feb) | 8 | 5 | 2 |
| 2 (Keichitsu / Mar) | 7 | 4 | 1 |
| 3 (Seimeい / Apr) | 6 | 3 | 9 |
| 4 (Rikka / May) | 5 | 2 | 8 |
| 5 (Bōshu / Jun) | 4 | 1 | 7 |
| 6 (Shōsho / Jul) | 3 | 9 | 6 |
| 7 (Risshū / Aug) | 2 | 8 | 5 |
| 8 (Hakuro / Sep) | 1 | 7 | 4 |
| 9 (Kanro / Oct) | 9 | 6 | 3 |
| 10 (Rittō / Nov) | 8 | 5 | 2 |
| 11 (Taisetsu / Dec) | 7 | 4 | 1 |
| 12 (Shōkan / Jan) | 6 | 3 | 9 |

5.5 Pseudocode for Getsumei-sei Calculation

Code snippet

```
FUNCTION getGetsumeiSei(birthDateTimeUTC, honmeiSei):
    // Determine the astrological year first, as the solar terms are
    // year-specific.
    astrologicalYear = GET_ASTROLOGICAL_YEAR(birthDateTimeUTC)

    // Find the astrological month (1-12) by comparing the birth date
    // against the 12 Setsuiri for that year.
    astrologicalMonth = GET_ASTROLOGICAL_MONTH(birthDateTimeUTC,
    astrologicalYear)

    // Determine the starting star based on the Honmei-sei group.
    IF honmeiSei IN (1, 4, 7) THEN
        startStar = 8
    ELSE
        startStar = 9
```

```

ELSE IF honmeiSei IN (2, 5, 8) THEN
    startStar = 5
ELSE // honmeiSei IN (3, 6, 9)
    startStar = 2
END IF

// The astrological month number corresponds to the number of
decrements from the start.
// Month 1 is 0 decrements, Month 2 is 1 decrement, etc.
decrement = astrologicalMonth - 1

// Calculate the Getsumei-sei using modulo arithmetic to handle the
decreasing sequence and wrapping.
// Formula: (startStar - decrement - 1) mod 9 + 1
getsumeiSei = ((startStar - decrement - 1) MOD 9) + 1

RETURN getsumeiSei

```

Section 6: Calculating the Energetic Star (*Keisha-kyū*)

The calculation of the *Keisha-kyū* is the most complex of the three stars. It is not a direct numerical formula but is derived geometrically by locating the position of the *Honmei-sei* on the magic square of the birth month, known as the *Tsukiban*(月盤).

6.1 Introduction to the Tonkō Boards

The positions of the nine stars are not static; they move through the nine palaces of the Lo Shu square over time. The arrangement of stars for a given year is the Annual Board (*Nenban*, 年盤), and for a given month is the Monthly Board (*Tsukiban*, 月盤). This movement is called *Tonkō* (遁甲).

6.2 The Tonkō Principle: Inton Sequence and Flying Star Path

The center star of a board determines the entire board's configuration. For both annual and monthly boards, the center star progresses in an *Inton* (陰遁), or decreasing, sequence. For example, if the center star this month is 7, next month it will be 6.

Once the center star is known, the remaining eight stars are placed in the other palaces following a fixed, forward-moving "flying star" path: Center → Northwest → West → Northeast → South → North → Southwest → East → Southeast

So, if the center star is *c*, the star in the Northwest palace is *c+1*, the star in the West is *c+2*, and so on, with numbers wrapping from 9 back to 1.

6.3 Algorithm for Generating the Monthly Board (Tsukiban)

To generate the *Tsukiban* for a specific month, the central star for that month must first be determined. The traditional method involves the Earthly Branch (zodiac animal) of the year, which adds complexity. The rule is as follows :

- For years of the Tiger (寅), Monkey (申), Snake (巳), and Pig (亥), the monthly sequence of center stars begins with 2.
- For years of the Rat (子), Rabbit (卯), Horse (午), and Rooster (酉), the monthly sequence begins with 8.
- For years of the Dragon (辰), Dog (戌), Ox (丑), and Ram (未), the monthly sequence begins with 5.

The sequence then proceeds in *Inton* (decreasing) order for each subsequent astrological month.

1. **Step 1:** Determine the Earthly Branch of the astrological year. This can be calculated using the formula: $\text{Branch} = (\text{Astrological Year} - 4) \bmod 12$. (Where 0=Rat, 1=Ox, etc.).
2. **Step 2:** Based on the Earthly Branch, determine the starting center star for the first astrological month (Tiger month).
3. **Step 3:** Calculate the center star for the birth month (`MonthlyCenterStar`) by decrementing from the starting star based on the astrological month number.
4. **Step 4:** Construct the 3x3 *Tsukiban* grid by placing `MonthlyCenterStar` in the center and filling the other palaces according to the flying star path described in Section 6.2.

6.4 Deriving the *Keisha-kyū*

Once the correct *Tsukiban* for the birth month is generated, the *Keisha-kyū* is found as follows:

1. **Step 1:** Locate the position (palace) of the person's *Honmei-sei* on the generated *Tsukiban*.
2. **Step 2:** The *Keisha-kyū* is the star number that resides in that same palace in the original, static Lo Shu square (*Kōten Jōi*). For example, the North palace's home star is 1, the Southwest's is 2, the East's is 3, and so on. If the person's *Honmei-sei* lands in the East palace of their birth month's *Tsukiban*, their *Keisha-kyū* is 3.

6.5 Special Case: Identical Honmei and Getsumei Stars

When a person's *Honmei-sei* and *Getsumei-sei* are the same, the standard derivation method results in the *Honmei-sei* being in the center of the *Tsukiban*. This situation is called *Chūgū Keisha* (中宮傾斜), or Central Palace Inclination. In these cases, a special set of rules applies, and the *Keisha-kyū* is determined by a lookup table instead of the board generation method.

The most notable of these special rules is the gender-based exception. For the specific case where both the *Honmei-sei* and *Getsumei-sei* are 5-Earth, the *Keisha-kyū* is determined by the person's gender :

- **Male:** The inclination is to the *Da-kyū* (兌宮, West palace). The resulting Energetic Star is **7**.
- **Female:** The inclination is to the *Ken-kyū* (乾宮, Northwest palace). The resulting Energetic Star is **6**.

The following table provides the complete mapping for all *Chūgū Keisha* cases.

| Honmei/Getsumei Pair | Resulting Keisha-kyū (Palace) | Resulting Keisha-kyū (Star Number) |
|----------------------|-------------------------------|------------------------------------|
| 1 / 1 | 離宮 (Ri-kyū) | 9 |
| 2 / 2 | 乾宮 (Ken-kyū) | 6 |
| 3 / 3 | 巽宮 (Son-kyū) | 4 |
| 4 / 4 | 震宮 (Shin-kyū) | 3 |
| 5 / 5 (Male) | 兌宮 (Da-kyū) | 7 |
| 5 / 5 (Female) | 乾宮 (Ken-kyū) | 6 |
| 6 / 6 | 坤宮 (Kon-kyū) | 2 |
| 7 / 7 | 艮宮 (Gon-kyū) | 8 |
| 8 / 8 | 兌宮 (Da-kyū) | 7 |
| 9 / 9 | 坎宮 (Kan-kyū) | 1 |

6.6 Pseudocode for Keisha-kyū Calculation

Code snippet

```
FUNCTION getKeishaKyu(birthDateTimeUTC, honmeiSei, getsumeiSei,
gender):
    // Step 1: Check for the special Chūgū Keisha case.
    IF honmeiSei == getsumeiSei THEN
        SWITCH honmeiSei:
            CASE 1: RETURN 9
            CASE 2: RETURN 6
            CASE 3: RETURN 4
            CASE 4: RETURN 3
            CASE 5:
                IF gender == "male" THEN RETURN 7
                ELSE RETURN 6
            CASE 6: RETURN 2
            CASE 7: RETURN 8
```

```

CASE 8: RETURN 7
CASE 9: RETURN 1
END SWITCH
END IF

// Step 2: If not a special case, proceed with board generation.
astrologicalYear = GET_ASTROLOGICAL_YEAR(birthDateTimeUTC)
astrologicalMonth = GET_ASTROLOGICAL_MONTH(birthDateTimeUTC,
astrologicalYear)

// Step 3: Determine the center star of the monthly board
(Tsukiban).
earthlyBranch = (astrologicalYear - 4) MOD 12
IF earthlyBranch IN (1, 4, 7, 10) THEN // Tiger, Monkey, Snake, Pig
    startCenterStar = 2
ELSE IF earthlyBranch IN (0, 3, 6, 9) THEN // Rat, Rabbit, Horse,
Rooster
    startCenterStar = 8
ELSE // Dragon, Dog, Ox, Ram
    startCenterStar = 5
END IF

decrement = astrologicalMonth - 1
monthlyCenterStar = ((startCenterStar - decrement - 1) MOD 9) + 1

// Step 4: Generate the Tsukiban (as a map of star -> palace).
// Palaces: 1:N, 2:SW, 3:E, 4:SE, 5:Center, 6:NW, 7:W, 8:NE, 9:S
flyingStarPath = // NW, W, NE, S, N, SW, E, SE
homePalaceOfStar = {1:1, 2:2, 3:3, 4:4, 5:5, 6:6, 7:7, 8:8, 9:9} // Star -> Home Palace

tsukiban = {}
tsukiban = 5 // Center
currentStar = monthlyCenterStar
FOR i FROM 0 TO 7:
    currentStar = (currentStar MOD 9) + 1
    palaceOfCurrentStar = homePalaceOfStar]
    tsukiban = palaceOfCurrentStar
END FOR

// Step 5: Find the palace of the Honmei-sei on the Tsukiban.
palaceOfHonmei = tsukiban

// Step 6: The Keisha-kyū is the home star of that palace.
keishaKyu = palaceOfHonmei

```

```
RETURN keishaKyu
```

Part III: Data Schemas and Machine-Readable Specification

This part provides the structured data definitions required for a robust software implementation. These schemas ensure data consistency and provide a clear contract for API development.

Section 7: Data Reference Tables

7.1 Table of the 24 Solar Terms

A foundational data file is required to power the perpetual solar calendar logic. This file must contain the precise date and time for each of the 24 solar terms for a wide range of years (e.g., 1900-2100).

- **Data Source:** National Astronomical Observatory of Japan (NAOJ) *Rekiyōkō*(曆要項) archives.
- **Format:** A JSON array is recommended for ease of use in modern applications.
- **Example Structure (`solar_terms.json`):**
JSON
 -
 -

Section 8: Machine-Readable Specification (JSON Schema)

The following JSON Schemas define the expected input and output for a calculator API endpoint.

8.1 Input Schema (`request.schema.json`)

This schema defines the contract for data sent to the calculator. Including timezone is mandatory for precise astronomical comparisons.

JSON

```
{  
  "$schema": "http://json-schema.org/draft-07/schema#",  
  "title": "Nine Star Ki Calculator Input",  
  "type": "object",  
  "properties": {  
    "birth_date": {  
      "type": "string",  
      "format": "date",  
      "description": "The birth date and time in YYYY-MM-DDTHH:MM:SSZ format."  
    },  
    "location": {  
      "type": "string",  
      "description": "The location name or coordinates."  
    },  
    "calculator_type": {  
      "type": "string",  
      "enum": ["Nine Star Ki", "I Ching"],  
      "description": "The type of calculator to use."  
    }  
  }  
}
```

```

        "description": "User's date of birth in YYYY-MM-DD format."
    },
    "birth_time": {
        "type": "string",
        "format": "time",
        "description": "User's time of birth in HH:MM:SS format. If not provided, a default of 12:00:00 should be assumed for calculation purposes."
    },
    "timezone": {
        "type": "string",
        "description": "IANA timezone name of the birth location (e.g., 'Asia/Tokyo', 'America/New_York'). This is crucial for converting the local birth time to a universal standard for comparison with astronomical data."
    },
    "gender": {
        "type": "string",
        "enum": ["male", "female", "unspecified"],
        "description": "User's gender. This is only used for the specific edge case where both Honmei-sei and Getsumei-sei are 5. 'unspecified' can be used as a default."
    }
},
"required": ["birth_date", "timezone", "gender"]
}

```

8.2 Output Schema (`response.schema.json`)

This schema defines the structure of the data returned by the calculator, providing a complete profile based on the three calculated stars.

JSON

```
{
  "$schema": "http://json-schema.org/draft-07/schema#",
  "title": "Nine Star Ki Calculator Output",
  "type": "object",
  "properties": {
    "honmei_sei": {
      "$ref": "#/definitions/star_profile",
      "description": "The Principal (Year) Star profile."
    },
    "getsumei_sei": {
      "$ref": "#/definitions/star_profile",
      "description": "The Character (Month) Star profile."
    }
  }
}
```

```
"keisha_kyu": {
    "$ref": "#/definitions/star_profile",
    "description": "The Energetic (Inclination) Star profile."
},
"calculation_details": {
    "type": "object",
    "properties": {
        "astrological_year": {
            "type": "integer",
            "description": "The astrological year used for the calculation."
        },
        "astrological_month": {
            "type": "integer",
            "description": "The astrological month (1-12) used for the calculation."
        },
        "risshun_datetime_utc": {
            "type": "string",
            "format": "date-time",
            "description": "The precise moment of Risshun for the birth year in UTC."
        }
    },
    "description": "Metadata about the calculation process for verification."
},
"definitions": {
    "star_profile": {
        "type": "object",
        "properties": {
            "number": { "type": "integer", "minimum": 1, "maximum": 9 },
            "name_jp": { "type": "string" },
            "name_romaji": { "type": "string" },
            "element": { "type": "string" },
            "polarity": { "type": "string", "enum": [] },
            "color": { "type": "string" },
            "direction": { "type": "string" }
        },
        "required": ["number", "name_jp", "name_romaji", "element", "polarity", "color", "direction"]
    }
}
}
```

8.3 Star Properties Data (`star_data.json`)

This static data file should be used by the application to populate the `star_profile` objects in the response. It is a direct JSON representation of the master reference table from Section 2.3.

JSON

```
{  
    "1": {  
        "name_jp": "一白水星", "name_romaji": "Ippaku Suisei", "element":  
        "Water", "polarity": "Yang", "color": "Black, White", "direction":  
        "North"  
    },  
    "2": {  
        "name_jp": "二黒土星", "name_romaji": "Jikoku Dosei", "element":  
        "Earth", "polarity": "Yin", "color": "Black, Yellow", "direction":  
        "Southwest"  
    },  
    "3": {  
        "name_jp": "三碧木星", "name_romaji": "Sanpeki Mokusei",  
        "element": "Wood", "polarity": "Yang", "color": "Blue-Green",  
        "direction": "East"  
    },  
    "4": {  
        "name_jp": "四緑木星", "name_romaji": "Shiroku Mokusei",  
        "element": "Wood", "polarity": "Yin", "color": "Dark Green",  
        "direction": "Southeast"  
    },  
    "5": {  
        "name_jp": "五黄土星", "name_romaji": "Go'ō Dosei", "element":  
        "Earth", "polarity": "Central", "color": "Yellow", "direction":  
        "Center"  
    },  
    "6": {  
        "name_jp": "六白金星", "name_romaji": "Roppaku Kinsei", "element":  
        "Metal", "polarity": "Yang", "color": "White", "direction":  
        "Northwest"  
    },  
    "7": {  
        "name_jp": "七赤金星", "name_romaji": "Shichiseki Kinsei",  
        "element": "Metal", "polarity": "Yin", "color": "Red, White",  
        "direction": "West"  
    },  
    "8": {  
    }
```

```

    "name_jp": "八白土星", "name_romaji": "Happaku Dosei", "element": "Earth", "polarity": "Yang", "color": "White, Yellow", "direction": "Northeast"
  },
  "9": {
    "name_jp": "九紫火星", "name_romaji": "Kyūshi Kasei", "element": "Fire", "polarity": "Yin", "color": "Purple, Red", "direction": "South"
  }
}

```

Conclusions

This specification provides a complete and exhaustive framework for the development of a precise Nine Star Ki calculator. By adhering to the algorithms, data structures, and foundational principles outlined herein, a development team can create an application that is accurate, reliable, and true to the *Kyūsei Kigaku* tradition.

The key takeaways for a successful implementation are:

- Astronomical Precision is Non-Negotiable:** The use of a perpetual solar calendar based on authoritative data (e.g., NAOJ) to determine the exact moments of *Risshun* and the monthly *Setsuiri* is the single most important factor in achieving accuracy. Simplified date-based rules will introduce errors.
- Systemic Purity is Essential:** The calculator must strictly implement the rules of Japanese *Kyūsei Kigaku*. It must consciously avoid conflating its algorithms with those of other, related systems like the gender-based Ming Gua (Kua number) calculations, except for the single, well-defined gender-based rule within the *Keisha-kyū* calculation.
- Algorithmic Transparency:** The provided pseudocode and step-by-step logic for all three stars, including the complex board-generation method for the *Keisha-kyū*, offer a clear and testable path to implementation.
- Structured Data:** The use of JSON schemas for inputs, outputs, and static data provides a robust, machine-readable foundation that will streamline development, testing, and future maintenance of the application.

By following this specification, the resulting calculator will stand as an authoritative and precise tool for users seeking to understand their Nine Star Ki profile.