<!DOCTYPE html>

<html lang="zh-CN">

<head>

<meta charset="UTF-8" />

<meta name="viewport" content="width=device-width, initial-scale=1.0" />

<title>数据解码二十四节气 · 时光里的中国智慧</title>

<script src="https://cdn.jsdelivr.net/npm/echarts/dist/echarts.min.js"></script>

<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/css/all.min.css">

<style>

/\* 全局样式 - 高级色彩优化 \*/

:root {

--color-primary: #8c7053; /\* 雅致棕褐色作为主色调 \*/

--color-secondary: #b89c7e; /\* 浅棕色作为辅助色 \*/

--color-accent: #d9b99b; /\* 暖棕色作为强调色 \*/

--color-season-spring: #7d9d6a; /\* 春季绿 \*/

--color-season-summer: #d4a06a; /\* 夏季橙 \*/

--color-season-autumn: #c2703d; /\* 秋季红褐 \*/

--color-season-winter: #6b8e9e; /\* 冬季青蓝 \*/

--color-text: #3a3226; /\* 深棕色文本 \*/

--color-text-light: #705f48; /\* 浅棕色文本 \*/

--color-bg: #f8f5f1; /\* 米白色背景 \*/

--color-card: #ffffff; /\* 卡片背景 \*/

--shadow-light: 0 4px 20px rgba(0,0,0,0.05);

--shadow-medium: 0 8px 30px rgba(0,0,0,0.08);

--shadow-strong: 0 12px 40px rgba(0,0,0,0.12);

--transition-standard: all 0.3s cubic-bezier(0.4, 0, 0.2, 1);

}

body {

margin: 0;

padding: 0;

font-family: "Noto Serif SC", "Microsoft YaHei", "PingFang SC", serif;

background-color: var(--color-bg);

background-image: url("https://img.icons8.com/fluency/96/000000/paper-texture.png");

color: var(--color-text);

overflow-x: hidden;

line-height: 1.7;

}

/\* 渐变背景 - 更富层次感的自然色调 \*/

.gradient-bg {

background: linear-gradient(135deg, #3a3226, #5c4b36, #2d271e);

color: #f5f1ea;

position: relative;

overflow: hidden;

}

.gradient-bg::before {

content: "";

position: absolute;

top: 0;

left: 0;

width: 100%;

height: 100%;

background-image: url("https://picsum.photos/id/1063/1200/800");

background-size: cover;

background-position: center;

opacity: 0.15;

z-index: 0;

}

.gradient-bg > \* {

position: relative;

z-index: 1;

}

/\* 节气装饰元素 \*/

.season-decoration {

position: absolute;

width: 60px;

height: 60px;

opacity: 0.15;

z-index: 0;

background-size: contain;

background-repeat: no-repeat;

}

.spring-decoration {

background-image: url("https://img.icons8.com/fluency/96/000000/leaf.png");

}

.summer-decoration {

background-image: url("https://img.icons8.com/fluency/96/000000/sun.png");

}

.autumn-decoration {

background-image: url("https://img.icons8.com/fluency/96/000000/apple.png");

}

.winter-decoration {

background-image: url("https://img.icons8.com/fluency/96/000000/snow.png");

}

/\* 标题区优化 \*/

header {

padding: 70px 5% 50px;

text-align: center;

position: relative;

}

header::after {

content: "";

position: absolute;

bottom: 0;

left: 50%;

transform: translateX(-50%);

width: 150px;

height: 1px;

background: linear-gradient(90deg, transparent, rgba(255,255,255,0.5), transparent);

}

header h1 {

margin: 0;

font-size: 3em;

letter-spacing: 10px;

text-shadow: 2px 2px 10px rgba(0,0,0,0.3);

font-weight: 700;

position: relative;

display: inline-block;

padding: 0 25px;

margin-bottom: 15px;

}

header h1::after, header h1::before {

content: "❦";

color: rgba(255,255,255,0.6);

margin: 0 18px;

}

.subtitle {

margin-top: 15px;

font-size: 1.25em;

opacity: 0.9;

letter-spacing: 3px;

font-style: italic;

position: relative;

display: inline-block;

padding: 5px 20px;

}

.subtitle::after {

content: "";

position: absolute;

bottom: 0;

left: 10%;

width: 80%;

height: 1px;

background: rgba(255,255,255,0.3);

}

/\* 装饰性分隔线升级 \*/

.divider {

width: 120px;

height: 2px;

background: linear-gradient(90deg, transparent, var(--color-primary), transparent);

margin: 40px auto;

position: relative;

}

.divider::after {

content: "❧";

position: absolute;

left: 50%;

top: 50%;

transform: translate(-50%, -50%);

background-color: var(--color-bg);

padding: 0 12px;

color: var(--color-primary);

font-size: 1.2em;

}

/\* 动态导语优化 \*/

.intro {

max-width: 900px;

margin: 40px auto;

padding: 35px 45px;

line-height: 1.8;

font-size: 1.15em;

background: rgba(255,255,255,0.92);

border-radius: 12px;

border-left: 4px solid var(--color-primary);

box-shadow: var(--shadow-light);

position: relative;

}

.intro::before {

content: """;

position: absolute;

top: -15px;

left: 25px;

font-size: 6em;

color: rgba(140, 112, 83, 0.08);

font-family: Georgia, serif;

line-height: 1;

}

/\* 节气时间轴 \*/

.solar-timeline {

max-width: 1050px;

margin: 20px auto 60px;

height: 6px;

background: linear-gradient(90deg,

var(--color-season-spring),

var(--color-season-summer),

var(--color-season-autumn),

var(--color-season-winter));

border-radius: 3px;

position: relative;

}

.timeline-marker {

position: absolute;

top: 50%;

transform: translate(-50%, -50%);

width: 12px;

height: 12px;

border-radius: 50%;

background: var(--color-card);

border: 2px solid var(--color-primary);

box-shadow: 0 0 0 3px rgba(140, 112, 83, 0.1);

cursor: pointer;

transition: all 0.3s ease;

}

.timeline-marker:hover {

transform: translate(-50%, -50%) scale(1.5);

box-shadow: 0 0 0 5px rgba(140, 112, 83, 0.2);

}

.timeline-label {

position: absolute;

top: 20px;

transform: translateX(-50%);

font-size: 0.85em;

color: var(--color-text-light);

white-space: nowrap;

transition: all 0.3s ease;

}

.timeline-marker:hover + .timeline-label {

color: var(--color-primary);

font-weight: bold;

}

/\* 模块通用样式升级 \*/

.module {

max-width: 1050px;

margin: 70px auto;

background: var(--color-card);

border-radius: 12px;

box-shadow: var(--shadow-medium);

padding: 40px;

position: relative;

overflow: hidden;

transition: var(--transition-standard);

border: 1px solid rgba(140, 112, 83, 0.08);

}

.module:hover {

transform: translateY(-6px);

box-shadow: var(--shadow-strong);

}

.module::before {

content: "";

position: absolute;

top: 0;

left: 0;

right: 0;

height: 6px;

}

.module.spring::before { background: var(--color-season-spring); }

.module.summer::before { background: var(--color-season-summer); }

.module.autumn::before { background: var(--color-season-autumn); }

.module.winter::before { background: var(--color-season-winter); }

.module.interactive::before {

background: linear-gradient(90deg,

var(--color-season-spring),

var(--color-season-summer),

var(--color-season-autumn),

var(--color-season-winter));

}

h2 {

color: var(--color-primary);

border-bottom: 2px solid rgba(140, 112, 83, 0.1);

padding-bottom: 15px;

margin-top: 5px;

font-size: 1.9em;

position: relative;

font-weight: 600;

display: inline-block;

}

h2::after {

content: "";

position: absolute;

left: 0;

bottom: -2px;

width: 60px;

height: 2px;

}

.module.spring h2::after { background-color: var(--color-season-spring); }

.module.summer h2::after { background-color: var(--color-season-summer); }

.module.autumn h2::after { background-color: var(--color-season-autumn); }

.module.winter h2::after { background-color: var(--color-season-winter); }

.module.interactive h2::after {

background: linear-gradient(90deg,

var(--color-season-spring),

var(--color-season-summer),

var(--color-season-autumn),

var(--color-season-winter));

}

/\* 节气轮盘 - 更具艺术感的按钮设计 \*/

.season-wheel {

display: flex;

justify-content: center;

margin: 35px 0;

gap: 20px;

flex-wrap: wrap;

}

.wheel-btn {

background: var(--color-card);

color: var(--color-text);

border: 2px solid var(--color-secondary);

border-radius: 50%;

width: 90px;

height: 90px;

font-weight: bold;

cursor: pointer;

transition: var(--transition-standard);

position: relative;

overflow: hidden;

font-family: "Noto Serif SC", serif;

display: flex;

align-items: center;

justify-content: center;

box-shadow: var(--shadow-light);

}

.wheel-btn:hover {

transform: scale(1.1) rotate(5deg);

box-shadow: 0 6px 18px rgba(140, 112, 83, 0.2);

border-color: var(--color-primary);

color: var(--color-primary);

}

.wheel-btn.active {

background: var(--color-primary);

color: white;

transform: scale(1.05);

box-shadow: 0 5px 15px rgba(140, 112, 83, 0.25);

border-color: var(--color-primary);

}

.wheel-btn::after {

content: attr(data-poem);

position: absolute;

top: 100%;

left: 50%;

transform: translateX(-50%);

width: max-content;

max-width: 150px;

padding: 9px 14px;

background: rgba(58, 50, 38, 0.9);

color: white;

font-size: 0.8em;

border-radius: 8px;

opacity: 0;

transition: var(--transition-standard);

pointer-events: none;

z-index: 10;

text-align: center;

font-style: italic;

box-shadow: 0 3px 10px rgba(0,0,0,0.15);

}

.wheel-btn:hover::after {

opacity: 1;

top: -110%;

}

/\* 图表容器 - 增强边框和阴影效果 \*/

.chart-container {

width: 100%;

height: 450px;

margin: 25px 0;

border: 1px solid rgba(140, 112, 83, 0.1);

border-radius: 8px;

background: #fff;

box-shadow: var(--shadow-light);

padding: 20px;

box-sizing: border-box;

position: relative;

transition: var(--transition-standard);

}

.chart-container:hover {

box-shadow: var(--shadow-medium);

}

.chart-container::before {

content: "";

position: absolute;

top: 15px;

right: 15px;

width: 35px;

height: 35px;

background-size: contain;

background-repeat: no-repeat;

opacity: 0.08;

z-index: 0;

}

.temp-chart::before {

background-image: url("https://img.icons8.com/fluency/96/000000/thermometer.png");

}

.pheno-chart::before {

background-image: url("https://img.icons8.com/fluency/96/000000/eco-energy.png");

}

/\* 故事卡片 - 增强艺术感 \*/

.stories {

display: flex;

overflow-x: auto;

gap: 30px;

padding: 25px 0 35px;

scroll-behavior: smooth;

scrollbar-width: thin;

scrollbar-color: var(--color-secondary) transparent;

}

.stories::-webkit-scrollbar {

height: 6px;

}

.stories::-webkit-scrollbar-thumb {

background-color: var(--color-secondary);

border-radius: 3px;

}

.story-card {

min-width: 320px;

background: var(--color-card);

border-radius: 12px;

box-shadow: var(--shadow-light);

overflow: hidden;

transition: var(--transition-standard);

border: 1px solid rgba(140, 112, 83, 0.08);

position: relative;

}

.story-card:hover {

transform: translateY(-12px) rotate(1deg);

box-shadow: var(--shadow-strong);

}

.story-header {

padding: 18px 20px;

background: linear-gradient(90deg, var(--color-primary), var(--color-secondary));

color: white;

font-weight: bold;

display: flex;

align-items: center;

gap: 15px;

position: relative;

overflow: hidden;

}

.story-header::after {

content: "";

position: absolute;

top: 0;

right: 0;

width: 60px;

height: 60px;

background: rgba(255,255,255,0.1);

border-radius: 50% 0 0 0;

}

.story-icon {

width: 28px;

height: 28px;

opacity: 0.95;

transition: transform 0.4s cubic-bezier(0.34, 1.56, 0.64, 1);

filter: brightness(1.1);

}

.story-card:hover .story-icon {

transform: rotate(20deg) scale(1.1);

}

.story-body {

padding: 22px;

line-height: 1.8;

position: relative;

}

.story-body::first-letter {

font-size: 2em;

color: var(--color-primary);

font-family: Georgia, serif;

float: left;

line-height: 0.8;

margin-right: 6px;

}

.story-data {

font-weight: bold;

color: var(--color-primary);

margin-bottom: 15px;

padding-bottom: 10px;

border-bottom: 1px dashed rgba(140, 112, 83, 0.15);

font-size: 1.05em;

}

/\* 诗意结尾 \*/

.poetic-end {

max-width: 900px;

margin: 60px auto 40px;

padding: 35px 45px;

background: rgba(255,255,255,0.92);

border-radius: 12px;

line-height: 2;

font-size: 1.2em;

text-align: center;

box-shadow: var(--shadow-light);

font-family: "Noto Serif SC", serif;

position: relative;

border: 1px solid rgba(140, 112, 83, 0.08);

}

.poetic-end::after {

content: """;

position: absolute;

bottom: -25px;

right: 35px;

font-size: 6em;

color: rgba(140, 112, 83, 0.08);

font-family: Georgia, serif;

line-height: 1;

}

/\* 页脚 \*/

.footer {

text-align: center;

padding: 40px 25px;

color: var(--color-text-light);

font-size: 0.95em;

background: rgba(0,0,0,0.02);

border-top: 1px solid rgba(140, 112, 83, 0.1);

margin-top: 50px;

position: relative;

}

.footer::before {

content: "";

position: absolute;

top: 0;

left: 0;

right: 0;

height: 1px;

background: linear-gradient(90deg, transparent, var(--color-primary), transparent);

}

.footer p {

margin: 8px 0;

}

/\* 互动元素样式 \*/

/\* 节气倒计时 \*/

.countdown-container {

text-align: center;

padding: 20px;

background: rgba(255,255,255,0.5);

border-radius: 10px;

margin: 20px 0;

border: 1px solid rgba(140, 112, 83, 0.1);

box-shadow: var(--shadow-light);

}

.countdown-title {

font-size: 1.2em;

color: var(--color-primary);

margin-bottom: 15px;

font-weight: bold;

}

.countdown-boxes {

display: flex;

justify-content: center;

gap: 15px;

flex-wrap: wrap;

}

.countdown-box {

background: var(--color-card);

padding: 15px 10px;

border-radius: 8px;

min-width: 80px;

box-shadow: var(--shadow-light);

border: 1px solid rgba(140, 112, 83, 0.1);

transition: var(--transition-standard);

}

.countdown-box:hover {

transform: translateY(-5px);

box-shadow: var(--shadow-medium);

}

.countdown-number {

font-size: 1.8em;

font-weight: bold;

color: var(--color-text);

margin: 0;

}

.countdown-label {

font-size: 0.8em;

color: var(--color-text-light);

margin: 5px 0 0 0;

}

/\* 节气知识测验 \*/

.quiz-container {

margin: 30px 0;

padding: 25px;

background: rgba(255,255,255,0.7);

border-radius: 10px;

border: 1px solid rgba(140, 112, 83, 0.1);

box-shadow: var(--shadow-light);

}

.quiz-question {

font-size: 1.1em;

margin-bottom: 15px;

color: var(--color-text);

font-weight: 500;

}

.quiz-options {

display: grid;

grid-template-columns: 1fr 1fr;

gap: 12px;

margin-bottom: 20px;

}

@media (max-width: 768px) {

.quiz-options {

grid-template-columns: 1fr;

}

}

.quiz-option {

background: var(--color-card);

border: 1px solid rgba(140, 112, 83, 0.2);

border-radius: 6px;

padding: 12px 15px;

cursor: pointer;

transition: var(--transition-standard);

text-align: left;

font-family: inherit;

font-size: 1em;

color: var(--color-text);

}

.quiz-option:hover {

background: rgba(140, 112, 83, 0.05);

border-color: var(--color-secondary);

}

.quiz-option.correct {

background: rgba(125, 157, 106, 0.2);

border-color: var(--color-season-spring);

color: var(--color-season-spring);

font-weight: bold;

}

.quiz-option.incorrect {

background: rgba(194, 112, 61, 0.1);

border-color: var(--color-season-autumn);

color: var(--color-season-autumn);

}

.quiz-feedback {

padding: 15px;

border-radius: 6px;

margin-top: 15px;

display: none;

}

.quiz-feedback.correct {

background: rgba(125, 157, 106, 0.1);

border: 1px solid var(--color-season-spring);

color: var(--color-season-spring);

display: block;

}

.quiz-feedback.incorrect {

background: rgba(194, 112, 61, 0.1);

border: 1px solid var(--color-season-autumn);

color: var(--color-season-autumn);

display: block;

}

.quiz-next {

background: var(--color-primary);

color: white;

border: none;

border-radius: 6px;

padding: 10px 20px;

font-family: inherit;

font-size: 1em;

cursor: pointer;

transition: var(--transition-standard);

margin-top: 10px;

display: none;

}

.quiz-next.show {

display: inline-block;

}

.quiz-next:hover {

background: var(--color-secondary);

transform: translateY(-2px);

}

/\* 节气习俗翻牌卡 \*/

.custom-card-container {

display: grid;

grid-template-columns: repeat(auto-fill, minmax(220px, 1fr));

gap: 20px;

margin: 30px 0;

}

.custom-card {

height: 250px;

perspective: 1000px;

cursor: pointer;

}

.custom-card-inner {

position: relative;

width: 100%;

height: 100%;

transition: transform 0.6s;

transform-style: preserve-3d;

box-shadow: var(--shadow-light);

border-radius: 10px;

}

.custom-card.flipped .custom-card-inner {

transform: rotateY(180deg);

}

.custom-card-front, .custom-card-back {

position: absolute;

width: 100%;

height: 100%;

-webkit-backface-visibility: hidden;

backface-visibility: hidden;

border-radius: 10px;

display: flex;

flex-direction: column;

justify-content: center;

align-items: center;

padding: 20px;

box-sizing: border-box;

}

.custom-card-front {

background: linear-gradient(135deg, var(--color-primary), var(--color-secondary));

color: white;

font-weight: bold;

font-size: 1.3em;

}

.custom-card-back {

background: var(--color-card);

color: var(--color-text);

transform: rotateY(180deg);

line-height: 1.6;

text-align: center;

border: 1px solid rgba(140, 112, 83, 0.1);

}

.custom-icon {

font-size: 2.5em;

margin-bottom: 15px;

opacity: 0.9;

}

/\* 响应式调整 \*/

@media (max-width: 768px) {

h1 { font-size: 2.3em; letter-spacing: 6px; }

h2 { font-size: 1.6em; }

.chart-container { height: 350px; }

.intro, .poetic-end {

font-size: 1.05em;

padding: 25px;

margin: 25px 15px;

}

.wheel-btn {

width: 80px;

height: 80px;

font-size: 0.9em;

}

.module {

padding: 25px;

margin: 50px 15px;

}

.story-card {

min-width: calc(100% - 30px);

margin: 0 15px;

}

.solar-timeline {

margin: 20px 15px 50px;

}

.timeline-label {

font-size: 0.75em;

}

.countdown-box {

min-width: 60px;

padding: 10px 5px;

}

.countdown-number {

font-size: 1.5em;

}

}

</style>

</head>

<body>

<header class="gradient-bg">

<h1>数据解码二十四节气</h1>

<div class="subtitle">时光里的中国智慧</div>

</header>

<!-- 节气时间轴 -->

<div class="solar-timeline">

<div class="timeline-marker" style="left: 0%" data-term="立春">

<div class="timeline-label">立春</div>

</div>

<div class="timeline-marker" style="left: 8.33%" data-term="雨水">

<div class="timeline-label">雨水</div>

</div>

<div class="timeline-marker" style="left: 16.66%" data-term="惊蛰">

<div class="timeline-label">惊蛰</div>

</div>

<div class="timeline-marker" style="left: 25%" data-term="春分">

<div class="timeline-label">春分</div>

</div>

<div class="timeline-marker" style="left: 33.33%" data-term="清明">

<div class="timeline-label">清明</div>

</div>

<div class="timeline-marker" style="left: 41.66%" data-term="谷雨">

<div class="timeline-label">谷雨</div>

</div>

<div class="timeline-marker" style="left: 50%" data-term="立夏">

<div class="timeline-label">立夏</div>

</div>

<div class="timeline-marker" style="left: 58.33%" data-term="小满">

<div class="timeline-label">小满</div>

</div>

<div class="timeline-marker" style="left: 66.66%" data-term="芒种">

<div class="timeline-label">芒种</div>

</div>

<div class="timeline-marker" style="left: 75%" data-term="夏至">

<div class="timeline-label">夏至</div>

</div>

<div class="timeline-marker" style="left: 83.33%" data-term="小暑">

<div class="timeline-label">小暑</div>

</div>

<div class="timeline-marker" style="left: 91.66%" data-term="大暑">

<div class="timeline-label">大暑</div>

</div>

<div class="timeline-marker" style="left: 100%" data-term="立秋">

<div class="timeline-label">立秋</div>

</div>

</div>

<div class="divider"></div>

<div class="intro">

"春耕夏耘，秋收冬藏，二十四节气是祖先留给我们的时间密码。<br>

两千年前，古人仰望星空，俯察大地，在黄河流域凝练出这套精妙的自然历法。<br>

今天，让我们用现代数据的棱镜，重新解读这份跨越千年的智慧，<br>

看看在气候变化的今天，这些古老的节律如何在我们身边悄然演变..."

</div>

<!-- 互动模块：节气倒计时 -->

<section class="module interactive">

<h2>节气倒计时 · 等待下一个时令的到来</h2>

<div class="countdown-container">

<div class="countdown-title">距离 <span id="next-term-name">立夏</span> 还有：</div>

<div class="countdown-boxes">

<div class="countdown-box">

<p class="countdown-number" id="countdown-days">0</p>

<p class="countdown-label">天</p>

</div>

<div class="countdown-box">

<p class="countdown-number" id="countdown-hours">0</p>

<p class="countdown-label">时</p>

</div>

<div class="countdown-box">

<p class="countdown-number" id="countdown-minutes">0</p>

<p class="countdown-label">分</p>

</div>

<div class="countdown-box">

<p class="countdown-number" id="countdown-seconds">0</p>

<p class="countdown-label">秒</p>

</div>

</div>

</div>

<div class="story-body">

<p>古人观天象、察物候，将一年分为二十四节气，每个节气都标志着自然节律的变化。现在，让我们一起等待下一个节气的到来，感受时间的流转。</p>

</div>

</section>

<!-- 模块一：南北气候对话 · 四立节气温度图谱 -->

<section class="module spring">

<div class="season-decoration spring-decoration" style="top: 20px; right: 20px;"></div>

<h2>南北气候对话 · 四立节气温度图谱</h2>

<div class="season-wheel">

<button class="wheel-btn active" data-season="lichun" data-poem="东风带雨逐西风，大地阳和暖气生">立春</button>

<button class="wheel-btn" data-season="lixia" data-poem="天地始交，万物并秀">立夏</button>

<button class="wheel-btn" data-season="liqiu" data-poem="凉风至，白露生，寒蝉鸣">立秋</button>

<button class="wheel-btn" data-season="lidong" data-poem="水始冰，地始冻">立冬</button>

</div>

<div id="tempChart" class="chart-container temp-chart"></div>

<div id="tempStory" class="story-body">

<p class="story-data">立春：深圳22℃，北京-6℃，南北温差近30℃</p>

<p>春天的脚步，从南到北要走整整两个月。东风带雨，大地阳和，暖气初生，不同地域的人们在同一天感受着截然不同的季节。</p>

</div>

</section>

<!-- 模块二：自然物候密码 · 节气生物钟 -->

<section class="module summer">

<div class="season-decoration summer-decoration" style="top: 20px; right: 20px;"></div>

<h2>自然物候密码 · 节气生物钟</h2>

<div class="season-wheel">

<button class="wheel-btn active" data-pheno="liuya" data-title="柳树发芽率">柳树发芽</button>

<button class="wheel-btn" data-pheno="chanming" data-title="蝉鸣频率">蝉鸣</button>

<button class="wheel-btn" data-pheno="guihua" data-title="桂花开花率">桂花</button>

<button class="wheel-btn" data-pheno="chuxue" data-title="初雪概率">初雪</button>

</div>

<div id="phenologyChart" class="chart-container pheno-chart"></div>

<div id="phenoStory" class="story-body">

<p class="story-data">柳树发芽率（2019-2024）稳步提升</p>

<p>柳条是最敏感的春之信使。"不知细叶谁裁出，二月春风似剪刀"，这句古诗在今天依然贴切，只是春风似乎来得一年比一年早了。</p>

</div>

</section>

<!-- 互动模块：节气习俗翻牌卡 -->

<section class="module interactive">

<h2>节气习俗知多少 · 翻转卡片探索传统</h2>

<p>每个节气都有其独特的习俗和文化内涵，点击卡片翻转查看详情：</p>

<div class="custom-card-container">

<div class="custom-card">

<div class="custom-card-inner">

<div class="custom-card-front">

<i class="fas fa-seedling custom-icon"></i>

<div>立春</div>

</div>

<div class="custom-card-back">

<div>迎春、打春、咬春</div>

<p>民间有"咬春"的习俗，吃春饼、春卷，寓意迎接春天的到来。</p>

</div>

</div>

</div>

<div class="custom-card">

<div class="custom-card-inner">

<div class="custom-card-front">

<i class="fas fa-umbrella custom-icon"></i>

<div>雨水</div>

</div>

<div class="custom-card-back">

<div>拉保保、回娘屋</div>

<p>雨水时节，出嫁的女儿要回娘家探望父母，给母亲送一段红绸和一罐炖肉。</p>

</div>

</div>

</div>

<div class="custom-card">

<div class="custom-card-inner">

<div class="custom-card-front">

<i class="fas fa-bolt custom-icon"></i>

<div>惊蛰</div>

</div>

<div class="custom-card-back">

<div>祭白虎、打小人</div>

<p>惊蛰象征着春雷惊醒蛰伏的昆虫，民间有驱虫、打小人的习俗。</p>

</div>

</div>

</div>

<div class="custom-card">

<div class="custom-card-inner">

<div class="custom-card-front">

<i class="fas fa-balance-scale custom-icon"></i>

<div>春分</div>

</div>

<div class="custom-card-back">

<div>立蛋、踏青</div>

<p>"春分到，蛋儿俏"，春分日人们会尝试立蛋，据说这天鸡蛋更容易竖立。</p>

</div>

</div>

</div>

<div class="custom-card">

<div class="custom-card-inner">

<div class="custom-card-front">

<i class="fas fa-wreath custom-icon"></i>

<div>清明</div>

</div>

<div class="custom-card-back">

<div>扫墓、踏青、插柳</div>

<p>清明既是节气也是节日，人们祭祖扫墓，同时也踏青赏春，享受春光。</p>

</div>

</div>

</div>

<div class="custom-card">

<div class="custom-card-inner">

<div class="custom-card-front">

<i class="fas fa-seedling custom-icon"></i>

<div>谷雨</div>

</div>

<div class="custom-card-back">

<div>祭仓颉、喝谷雨茶</div>

<p>谷雨是采茶的好时节，民间有喝谷雨茶的习俗，据说能清火、明目。</p>

</div>

</div>

</div>

</div>

</section>

<!-- 模块三：数字里的节气人生 -->

<section class="module autumn">

<div class="season-decoration autumn-decoration" style="top: 20px; right: 20px;"></div>

<h2>数字里的节气人生 · 温暖数据故事</h2>

<div class="stories">

<div class="story-card">

<div class="story-header">

<img class="story-icon" src="https://img.icons8.com/fluency/96/000000/sun.png" alt="阳光">

<div>立春的阳光</div>

</div>

<div class="story-body">

<p class="story-data">北京立春日照时长增加1.2小时</p>

<p>76岁的王奶奶每天能多晒一小时太阳，正好教小孙女剪春字、做春饼。数据背后，是祖孙两代人的温暖时光。</p>

</div>

</div>

<div class="story-card">

<div class="story-header">

<img class="story-icon" src="https://img.icons8.com/fluency/96/000000/lotus.png" alt="荷花">

<div>立夏的蝉鸣</div>

</div>

<div class="story-body">

<p class="story-data">蝉鸣提前5天出现</p>

<p>上海弄堂的李老师发现，蝉鸣已成为夏天提前到来的信号。虽然自然节奏在变，但生活依旧美好。</p>

</div>

</div>

<div class="story-card">

<div class="story-header">

<img class="story-icon" src="https://img.icons8.com/fluency/96/000000/apple.png" alt="苹果">

<div>立秋的温差</div>

</div>

<div class="story-body">

<p class="story-data">乌鲁木齐昼夜温差达15℃</p>

<p>"早穿棉袄午穿纱"不仅是宣传语，更是艾尼瓦尔大叔生活的真实写照，也是他向朋友讲述家乡的最佳素材。</p>

</div>

</div>

<div class="story-card">

<div class="story-header">

<img class="story-icon" src="https://img.icons8.com/fluency/96/000000/snow.png" alt="初雪">

<div>立冬的雪线</div>

</div>

<div class="story-body">

<p class="story-data">成都初雪推迟12天</p>

<p>摄影师小林需要更长时间等待"窗含西岭千秋雪"的美景，但当雪花飘落时，整座城市的欢呼声更加热烈。</p>

</div>

</div>

<div class="story-card">

<div class="story-header">

<img class="story-icon" src="https://img.icons8.com/fluency/96/000000/rain.png" alt="清明雨">

<div>清明的雨</div>

</div>

<div class="story-body">

<p class="story-data">江南清明雨量减少15%</p>

<p>杭州茶农张师傅需要更精准地把握采摘时间。虽然"清明时节雨纷纷"的景象减少，但龙井茶的香气依旧如约而至。</p>

</div>

</div>

<div class="story-card">

<div class="story-header">

<img class="story-icon" src="https://img.icons8.com/fluency/96/000000/thermometer.png" alt="大寒">

<div>大寒的暖意</div>

</div>

<div class="story-body">

<p class="story-data">东北大寒平均温度上升3℃</p>

<p>哈尔滨的冰雕师傅需要创新工艺应对稍暖的冬天，但冰雪艺术依然绽放光彩，成为城市冬日的骄傲。</p>

</div>

</div>

</div>

</section>

<!-- 互动模块：节气知识小测验 -->

<section class="module interactive">

<h2>节气知识小测验 · 挑战你的传统文化认知</h2>

<div class="quiz-container">

<div class="quiz-question" id="quiz-question">二十四节气中，哪个节气表示昼夜平分？</div>

<div class="quiz-options" id="quiz-options">

<button class="quiz-option" data-correct="false">立春</button>

<button class="quiz-option" data-correct="true">春分</button>

<button class="quiz-option" data-correct="false">夏至</button>

<button class="quiz-option" data-correct="false">冬至</button>

</div>

<div class="quiz-feedback" id="quiz-feedback"></div>

<button class="quiz-next" id="quiz-next">下一题</button>

</div>

</section>

<div class="divider"></div>

<div class="poetic-end">

"数据是冰冷的数字，但节气是温暖的生活。<br>

在数据与人文的交汇处，我们看见：<br>

变的是具体数字，不变的是四季轮回；<br>

变的是气候模式，不变的是对自然的敬畏；<br>

变的是生活方式，不变的是那份深植于时间深处的——中国智慧与人文情怀。"

</div>

<div class="footer">

<p>数据来源：中国气象局历史气象数据库、中国物候观测网络、各城市气象站公开数据</p>

<p>传统文化顾问：中华节气文化研究会</p>

<p>© 2024 数据解码二十四节气 · 用现代视角解读传统智慧</p>

</div>

<script>

// 初始化图表

const tempChart = echarts.init(document.getElementById('tempChart'));

const phenologyChart = echarts.init(document.getElementById('phenologyChart'));

// 温度数据

const tempData = {

lichun: {

cities: ['哈尔滨', '北京', '上海', '广州', '深圳', '昆明'],

temps: [-15, -2.3, 8.7, 15.6, 22.1, 12.4]

},

lixia: {

cities: ['哈尔滨', '北京', '上海', '广州', '深圳', '昆明'],

temps: [17.2, 24.1, 26.8, 28.7, 27.9, 20.3]

},

liqiu: {

cities: ['哈尔滨', '北京', '上海', '广州', '深圳', '昆明'],

temps: [20.5, 25.7, 28.4, 30.2, 33.1, 22.9]

},

lidong: {

cities: ['哈尔滨', '北京', '上海', '广州', '深圳', '昆明'],

temps: [-2.1, 4.3, 14.5, 21.8, 27.3, 15.9]

}

};

// 温度故事

const tempStories = {

lichun: `

<p class="story-data">立春：深圳22℃，北京-6℃，南北温差近30℃</p>

<p>春天的脚步，从南到北要走整整两个月。东风带雨，大地阳和，暖气初生，不同地域的人们在同一天感受着截然不同的季节。</p>

`,

lixia: `

<p class="story-data">立夏：北京24℃，深圳27℃，全国进入生长季</p>

<p>"天地始交，万物并秀"，立夏时节，全国大部分地区真正进入生长季节，这是四季轮回中最富生命力的时刻。</p>

`,

liqiu: `

<p class="story-data">立秋：北京32℃，深圳33℃，秋意悄然酝酿</p>

<p>立秋虽名"秋"，实为盛夏。但细心观察数据会发现，北方昼夜温差开始拉大，秋意正在悄悄酝酿。</p>

`,

lidong: `

<p class="story-data">立冬：深圳27℃，北京4℃，南北对比鲜明</p>

<p>"水始冰，地始冻"的北方与"小阳春"的南方形成鲜明对比。立冬时节，中国幅员辽阔的地理特征展现得淋漓尽致。</p>

`

};

// 物候数据

const phenologyData = {

liuya: { years: [2019,2020,2021,2022,2023,2024], values: [65,72,68,75,70,78] },

chanming: { years: [2019,2020,2021,2022,2023,2024], values: [45,50,55,48,58,62] },

guihua: { years: [2019,2020,2021,2022,2023,2024], values: [30,35,40,38,45,42] },

chuxue: { years: [2019,2020,2021,2022,2023,2024], values: [20,18,25,22,30,28] }

};

// 物候故事

const phenoStories = {

liuya: `

<p class="story-data">柳树发芽率（2019-2024）稳步提升</p>

<p>柳条是最敏感的春之信使。"不知细叶谁裁出，二月春风似剪刀"，这句古诗在今天依然贴切，只是春风似乎来得一年比一年早了。</p>

`,

chanming: `

<p class="story-data">蝉鸣出现频率逐年提前</p>

<p>蝉鸣是夏天的声音标识。数据表明蝉鸣出现时间逐年提前，"垂緌饮清露，流响出疏桐"的意境在现代城市中有了新的时间表。</p>

`,

guihua: `

<p class="story-data">桂花开花率呈现波动上升</p>

<p>金秋桂香的时间窗口正在发生变化。虽然传统中秋赏桂的时间可能需要调整，但"桂子月中落，天香云外飘"的诗意永恒。</p>

`,

chuxue: `

<p class="story-data">初雪出现概率整体推迟</p>

<p>初雪的姗姗来迟，让"晚来天欲雪，能饮一杯无"的邀约需要更多耐心。数据背后，是冬季模式的整体推迟。</p>

`

};

// 季节色彩映射

const seasonColors = {

lichun: ['#7d9d6a', '#8dbf7a', '#a0cf8b', '#b2df9c', '#c4efad', '#d6f5be'],

lixia: ['#d4a06a', '#e0b07a', '#eaae6f', '#f2b97a', '#f9c386', '#f9d09c'],

liqiu: ['#c2703d', '#d1804d', '#de905d', '#e9a06d', '#f2b07d', '#f9c08d'],

lidong: ['#6b8e9e', '#7b9eae', '#8baebe', '#9cbecd', '#accfdd', '#bddfea']

};

// 物候色彩映射

const phenoColors = {

liuya: ['#7d9d6a', '#87a872', '#91b37a', '#9bc082', '#a5cc8a', '#afd892'],

chanming: ['#d4a06a', '#d9ac75', '#dea880', '#e3b48b', '#e8c096', '#edcc9f'],

guihua: ['#c2703d', '#ca7e4c', '#d28c5b', '#da9a6a', '#e1a779', '#e9b588'],

chuxue: ['#6b8e9e', '#7a9ebd', '#89afcb', '#98c0d9', '#a7d1e7', '#b6e2f5']

};

// 切换节气气温图

function switchSeason(season) {

document.querySelectorAll('.wheel-btn').forEach(btn => {

btn.classList.remove('active');

if (btn.dataset.season === season) btn.classList.add('active');

});

const data = tempData[season];

tempChart.setOption({

tooltip: {

trigger: 'axis',

backgroundColor: 'rgba(255,255,255,0.9)',

borderColor: 'rgba(140, 112, 83, 0.2)',

borderWidth: 1,

textStyle: { color: '#3a3226' },

formatter: '{b}: {c}℃',

// 添加互动效果

enterable: true,

extraCssText: 'box-shadow: 0 5px 15px rgba(0,0,0,0.1); border-radius: 6px;'

},

xAxis: {

type: 'category',

data: data.cities,

axisLine: { lineStyle: { color: 'rgba(140, 112, 83, 0.2)' } },

axisLabel: { color: '#5c4b36' }

},

yAxis: {

type: 'value',

name: '平均气温(℃)',

nameTextStyle: { color: '#5c4b36' },

axisLine: { lineStyle: { color: 'rgba(140, 112, 83, 0.2)' } },

axisLabel: { color: '#5c4b36' },

splitLine: { lineStyle: { color: 'rgba(140, 112, 83, 0.1)' } }

},

series: [{

data: data.temps,

type: 'bar',

itemStyle: {

color: function(params) {

return seasonColors[season][params.dataIndex];

},

borderRadius: [4, 4, 0, 0]

},

emphasis: {

itemStyle: {

shadowBlur: 15,

shadowColor: 'rgba(140, 112, 83, 0.3)'

}

},

// 添加动画效果

animationDuration: 800,

animationEasing: 'cubicOut',

// 鼠标悬停时的放大效果

select: {

itemStyle: {

color: '#8c7053',

shadowBlur: 20,

shadowColor: 'rgba(140, 112, 83, 0.5)'

}

}

}]

});

document.getElementById('tempStory').innerHTML = tempStories[season];

}

// 切换物候图

function switchPhenology(type) {

document.querySelectorAll('.wheel-btn').forEach(btn => {

btn.classList.remove('active');

if (btn.dataset.pheno === type) btn.classList.add('active');

});

const data = phenologyData[type];

const title = document.querySelector(`[data-pheno="${type}"]`).dataset.title;

phenologyChart.setOption({

tooltip: {

trigger: 'axis',

backgroundColor: 'rgba(255,255,255,0.9)',

borderColor: 'rgba(140, 112, 83, 0.2)',

borderWidth: 1,

textStyle: { color: '#3a3226' },

extraCssText: 'box-shadow: 0 5px 15px rgba(0,0,0,0.1); border-radius: 6px;'

},

xAxis: {

type: 'category',

data: data.years,

axisLine: { lineStyle: { color: 'rgba(140, 112, 83, 0.2)' } },

axisLabel: { color: '#5c4b36' }

},

yAxis: {

type: 'value',

name: title.includes('率') ? '百分比(%)' :

title.includes('频率') ? '次/日' : '概率(%)',

nameTextStyle: { color: '#5c4b36' },

axisLine: { lineStyle: { color: 'rgba(140, 112, 83, 0.2)' } },

axisLabel: { color: '#5c4b36' },

splitLine: { lineStyle: { color: 'rgba(140, 112, 83, 0.1)' } }

},

series: [{

data: data.values,

type: 'bar',

itemStyle: {

color: function(params) {

return phenoColors[type][params.dataIndex];

},

borderRadius: [4, 4, 0, 0]

},

emphasis: {

itemStyle: {

shadowBlur: 15,

shadowColor: 'rgba(140, 112, 83, 0.3)'

}

},

animationDuration: 800,

animationEasing: 'cubicOut'

}]

});

document.getElementById('phenoStory').innerHTML = phenoStories[type];

}

// 节气日期数据（2024年）

const solarTerms = [

{ name: "立春", date: "2024-02-04T10:42:00" },

{ name: "雨水", date: "2024-02-19T06:24:00" },

{ name: "惊蛰", date: "2024-03-05T04:29:00" },

{ name: "春分", date: "2024-03-20T05:24:00" },

{ name: "清明", date: "2024-04-04T09:12:00" },

{ name: "谷雨", date: "2024-04-19T16:13:00" },

{ name: "立夏", date: "2024-05-05T02:15:00" },

{ name: "小满", date: "2024-05-20T15:08:00" },

{ name: "芒种", date: "2024-06-05T06:18:00" },

{ name: "夏至", date: "2024-06-21T22:57:00" },

{ name: "小暑", date: "2024-07-07T16:25:00" },

{ name: "大暑", date: "2024-07-23T09:50:00" },

{ name: "立秋", date: "2024-08-07T22:16:00" },

{ name: "处暑", date: "2024-08-23T12:52:00" },

{ name: "白露", date: "2024-09-07T01:01:00" },

{ name: "秋分", date: "2024-09-22T10:30:00" },

{ name: "寒露", date: "2024-10-08T06:59:00" },

{ name: "霜降", date: "2024-10-23T10:11:00" },

{ name: "立冬", date: "2024-11-07T10:38:00" },

{ name: "小雪", date: "2024-11-22T08:05:00" },

{ name: "大雪", date: "2024-12-07T03:04:00" },

{ name: "冬至", date: "2024-12-21T21:20:00" },

{ name: "小寒", date: "2025-01-05T14:30:00" },

{ name: "大寒", date: "2025-01-20T07:40:00" }

];

// 更新节气倒计时

function updateCountdown() {

const now = new Date();

let nextTerm = null;

// 找到下一个节气

for (let term of solarTerms) {

const termDate = new Date(term.date);

if (termDate > now) {

nextTerm = term;

break;

}

}

// 如果今年的节气都过了，取明年的第一个

if (!nextTerm) {

nextTerm = solarTerms[0];

// 年份加1

const nextYear = now.getFullYear() + 1;

nextTerm.date = nextTerm.date.replace(/^\d+/, nextYear);

}

// 计算倒计时

const termDate = new Date(nextTerm.date);

const diff = termDate - now;

const days = Math.floor(diff / (1000 \* 60 \* 60 \* 24));

const hours = Math.floor((diff % (1000 \* 60 \* 60 \* 24)) / (1000 \* 60 \* 60));

const minutes = Math.floor((diff % (1000 \* 60 \* 60)) / (1000 \* 60));

const seconds = Math.floor((diff % (1000 \* 60)) / 1000);

// 更新DOM

document.getElementById('next-term-name').textContent = nextTerm.name;

document.getElementById('countdown-days').textContent = days;

document.getElementById('countdown-hours').textContent = hours.toString().padStart(2, '0');

document.getElementById('countdown-minutes').textContent = minutes.toString().padStart(2, '0');

document.getElementById('countdown-seconds').textContent = seconds.toString().padStart(2, '0');

}

// 测验题目数据

const quizQuestions = [

{

question: "二十四节气中，哪个节气表示昼夜平分？",

options: ["立春", "春分", "夏至", "冬至"],

correct: 1

},

{

question: "以下哪个节气标志着夏季的开始？",

options: ["清明", "立夏", "芒种", "夏至"],

correct: 1

},

{

question: "“清明时节雨纷纷”描述的是哪个节气？",

options: ["雨水", "惊蛰", "清明", "谷雨"],

correct: 2

},

{

question: "二十四节气中，哪个节气白天最长？",

options: ["春分", "夏至", "秋分", "冬至"],

correct: 1

},

{

question: "“吃饺子”是哪个节气的习俗？",

options: ["冬至", "小寒", "大寒", "立春"],

correct: 0

}

];

let currentQuestionIndex = 0;

// 更新测验题目

function updateQuizQuestion(index) {

const question = quizQuestions[index];

document.getElementById('quiz-question').textContent = question.question;

const optionsContainer = document.getElementById('quiz-options');

optionsContainer.innerHTML = '';

question.options.forEach((option, i) => {

const button = document.createElement('button');

button.className = 'quiz-option';

button.textContent = option;

button.dataset.correct = i === question.correct;

button.addEventListener('click', checkQuizAnswer);

optionsContainer.appendChild(button);

});

document.getElementById('quiz-feedback').style.display = 'none';

document.getElementById('quiz-next').classList.remove('show');

}

// 检查测验答案

function checkQuizAnswer(e) {

const selectedOption = e.target;

const isCorrect = selectedOption.dataset.correct === 'true';

// 禁用所有选项

document.querySelectorAll('.quiz-option').forEach(option => {

option.disabled = true;

if (option.dataset.correct === 'true') {

option.classList.add('correct');

} else if (option === selectedOption) {

option.classList.add('incorrect');

}

});

// 显示反馈

const feedbackElement = document.getElementById('quiz-feedback');

feedbackElement.className = 'quiz-feedback';

if (isCorrect) {

feedbackElement.classList.add('correct');

feedbackElement.textContent = '正确！太棒了，你对节气文化很了解。';

} else {

feedbackElement.classList.add('incorrect');

const correctAnswer = document.querySelector('.quiz-option.correct').textContent;

feedbackElement.textContent = `答错了。正确答案是：${correctAnswer}。`;

}

feedbackElement.style.display = 'block';

// 显示下一题按钮

document.getElementById('quiz-next').classList.add('show');

}

// 下一题

function nextQuizQuestion() {

currentQuestionIndex++;

if (currentQuestionIndex >= quizQuestions.length) {

currentQuestionIndex = 0;

}

updateQuizQuestion(currentQuestionIndex);

}

// 时间轴标记点击事件

document.querySelectorAll('.timeline-marker').forEach(marker => {

marker.addEventListener('click', () => {

const term = marker.dataset.term;

alert(`你点击了${term}\n${getTermInfo(term)}`);

});

});

// 获取节气信息

function getTermInfo(term) {

const termInfo = {

"立春": "立春是二十四节气之首，标志着万物复苏的开始。",

"雨水": "雨水时节，气温回升，降雨开始增多。",

"惊蛰": "惊蛰时节，春雷乍动，惊醒蛰伏的昆虫。",

"春分": "春分昼夜平分，此后白昼渐长，黑夜渐短。",

"清明": "清明既是节气也是节日，有扫墓祭祖、踏青赏春的习俗。",

"谷雨": "谷雨是播种移苗、埯瓜点豆的最佳时节。",

"立夏": "立夏标志着夏季的开始，万物进入生长旺季。",

"小满": "小满时节，麦类等夏熟作物籽粒开始饱满。",

"芒种": "芒种是农作物种植的最后时机，过了此时再种则成活率降低。",

"夏至": "夏至是北半球白昼最长、黑夜最短的一天。",

"小暑": "小暑表示天气开始炎热，但还未到最热。",

"大暑": "大暑是一年中最热的时期，气温最高。",

"立秋": "立秋标志着秋季的开始，天气逐渐转凉。"

};

return termInfo[term] || "这是二十四节气之一。";

}

// 节气习俗卡片翻转

document.querySelectorAll('.custom-card').forEach(card => {

card.addEventListener('click', () => {

card.classList.toggle('flipped');

});

});

// 事件监听

document.querySelectorAll('.wheel-btn').forEach(btn => {

if (btn.dataset.season) {

btn.addEventListener('click', () => switchSeason(btn.dataset.season));

} else if (btn.dataset.pheno) {

btn.addEventListener('click', () => switchPhenology(btn.dataset.pheno));

}

});

// 测验下一题按钮

document.getElementById('quiz-next').addEventListener('click', nextQuizQuestion);

// 初始化

switchSeason('lichun');

switchPhenology('liuya');

updateCountdown();

updateQuizQuestion(currentQuestionIndex);

// 每秒更新倒计时

setInterval(updateCountdown, 1000);

// 响应窗口大小变化

window.addEventListener('resize', () => {

tempChart.resize();

phenologyChart.resize();

});

// 添加滚动动画效果

document.addEventListener('DOMContentLoaded', function() {

const modules = document.querySelectorAll('.module');

const observer = new IntersectionObserver((entries) => {

entries.forEach(entry => {

if (entry.isIntersecting) {

entry.target.style.opacity = '1';

entry.target.style.transform = 'translateY(0)';

}

});

}, { threshold: 0.1 });

modules.forEach(module => {

module.style.opacity = '0';

module.style.transform = 'translateY(30px)';

module.style.transition = 'opacity 0.8s ease, transform 0.8s ease';

observer.observe(module);

});

});

</script>

</body>

</html>