<!DOCTYPE html>

<html lang="es">

<head>

<meta charset="UTF-8">

<title>Calculadora Geométrica</title>

<style>

body {

font-family: Arial, sans-serif;

margin: 40px;

background: #f0f8ff;

}

h1 {

color: #333;

}

.container {

background: white;

padding: 20px;

border-radius: 10px;

width: 400px;

box-shadow: 0 0 10px rgba(0,0,0,0.1);

}

select, input, button {

margin: 10px 0;

width: 100%;

padding: 8px;

font-size: 16px;

}

.result {

margin-top: 15px;

font-weight: bold;

color: #006400;

}

</style>

</head>

<body>

<div class="container">

<h1>Calculadora Geométrica</h1>

<label>Tipo de cálculo:</label>

<select id="tipoCalculo" onchange="mostrarOpciones()">

<option value="">-- Selecciona --</option>

<option value="figura">Figura plana</option>

<option value="solido">Sólido regular</option>

</select>

<div id="formulario"></div>

<div class="result" id="resultado"></div>

</div>

<script>

function mostrarOpciones() {

const tipo = document.getElementById("tipoCalculo").value;

const form = document.getElementById("formulario");

form.innerHTML = "";

document.getElementById("resultado").innerHTML = "";

if (tipo === "figura") {

form.innerHTML = `

<label>Figura:</label>

<select id="figura">

<option value="cuadrado">Cuadrado</option>

<option value="rectangulo">Rectángulo</option>

<option value="triangulo">Triángulo</option>

<option value="circulo">Círculo</option>

</select>

<div id="datosFigura"></div>

<button onclick="calcularFigura()">Calcular</button>

`;

document.getElementById("figura").addEventListener("change", cargarDatosFigura);

} else if (tipo === "solido") {

form.innerHTML = `

<label>Sólido:</label>

<select id="solido">

<option value="cubo">Cubo</option>

<option value="cilindro">Cilindro</option>

<option value="esfera">Esfera</option>

<option value="cono">Cono</option>

<option value="piramide">Pirámide</option>

</select>

<div id="datosSolido"></div>

<button onclick="calcularSolido()">Calcular</button>

`;

document.getElementById("solido").addEventListener("change", cargarDatosSolido);

}

}

function cargarDatosFigura() {

const fig = document.getElementById("figura").value;

const cont = document.getElementById("datosFigura");

let html = "";

if (fig === "cuadrado") {

html = `<input type="number" id="lado" placeholder="Lado">`;

} else if (fig === "rectangulo") {

html = `<input type="number" id="base" placeholder="Base">

<input type="number" id="altura" placeholder="Altura">`;

} else if (fig === "triangulo") {

html = `<input type="number" id="base" placeholder="Base">

<input type="number" id="altura" placeholder="Altura">

<input type="number" id="lado1" placeholder="Lado 1">

<input type="number" id="lado2" placeholder="Lado 2">`;

} else if (fig === "circulo") {

html = `<input type="number" id="radio" placeholder="Radio">`;

}

cont.innerHTML = html;

}

function cargarDatosSolido() {

const sol = document.getElementById("solido").value;

const cont = document.getElementById("datosSolido");

let html = "";

if (sol === "cubo") {

html = `<input type="number" id="lado" placeholder="Lado">`;

} else if (sol === "cilindro" || sol === "cono") {

html = `<input type="number" id="radio" placeholder="Radio">

<input type="number" id="altura" placeholder="Altura">`;

} else if (sol === "esfera") {

html = `<input type="number" id="radio" placeholder="Radio">`;

} else if (sol === "piramide") {

html = `<input type="number" id="areaBase" placeholder="Área de la base">

<input type="number" id="altura" placeholder="Altura">`;

}

cont.innerHTML = html;

}

function calcularFigura() {

const fig = document.getElementById("figura").value;

let area = 0, perimetro = 0;

if (fig === "cuadrado") {

const lado = parseFloat(document.getElementById("lado").value);

area = lado \* lado;

perimetro = 4 \* lado;

} else if (fig === "rectangulo") {

const b = parseFloat(document.getElementById("base").value);

const h = parseFloat(document.getElementById("altura").value);

area = b \* h;

perimetro = 2 \* (b + h);

} else if (fig === "triangulo") {

const b = parseFloat(document.getElementById("base").value);

const h = parseFloat(document.getElementById("altura").value);

const l1 = parseFloat(document.getElementById("lado1").value);

const l2 = parseFloat(document.getElementById("lado2").value);

area = (b \* h) / 2;

perimetro = b + l1 + l2;

} else if (fig === "circulo") {

const r = parseFloat(document.getElementById("radio").value);

area = Math.PI \* r \* r;

perimetro = 2 \* Math.PI \* r;

}

document.getElementById("resultado").innerHTML = `Área: ${area.toFixed(2)}<br>Perímetro: ${perimetro.toFixed(2)}`;

}

function calcularSolido() {

const sol = document.getElementById("solido").value;

let volumen = 0;

if (sol === "cubo") {

const lado = parseFloat(document.getElementById("lado").value);

volumen = lado \*\* 3;

} else if (sol === "cilindro") {

const r = parseFloat(document.getElementById("radio").value);

const h = parseFloat(document.getElementById("altura").value);

volumen = Math.PI \* r \* r \* h;

} else if (sol === "esfera") {

const r = parseFloat(document.getElementById("radio").value);

volumen = (4 / 3) \* Math.PI \* Math.pow(r, 3);

} else if (sol === "cono") {

const r = parseFloat(document.getElementById("radio").value);

const h = parseFloat(document.getElementById("altura").value);

volumen = (1 / 3) \* Math.PI \* r \* r \* h;

} else if (sol === "piramide") {

const ab = parseFloat(document.getElementById("areaBase").value);

const h = parseFloat(document.getElementById("altura").value);

volumen = (1 / 3) \* ab \* h;

}

document.getElementById("resultado").innerHTML = `Volumen: ${volumen.toFixed(2)}`;

}

</script>

</body>

</html>