let time = 1000;

var time2 = 500;

var time3 = 1000;

let intervalId1, intervalId2, intervalId3, intervalId4, intervalId5, intervalId6, intervalcanvas;

let countryOneLaborGoodOne;

let countryOneLaborGoodTwo;

let countryTwoLaborGoodOne;

let countryTwoLaborGoodTwo;

function displayGif() {

//document.getElementById('gif-trade').style.display = 'block';

fillCanvasWithColorTransition();

decidePPF\_animation();

document.getElementById('start-trade-button').style.display = 'none';

wageArrows();

wageMessages();

 }

let difference;

let steps;

let difference2;

let steps2;

function calculateDifference() {

  difference = Math.abs(worldPrice - countryOnePriceRatioGood1);

  steps = Math.round(difference / 0.01); // Ensure positive steps

  console.log("steps", steps);

  difference2 = Math.abs(countryTwoPriceRatioGood1 - worldPrice);

  steps2 = Math.round(difference2 / 0.01); // Ensure positive steps

  console.log("steps2", steps2);

}

let totalLabor;

function setIndustries() {

  countryOneLaborGoodOne = countryOneLabor % 2 === 0 ? countryOneLabor / 2 : (countryOneLabor + 1) / 2;

  countryOneLaborGoodTwo = countryOneLabor % 2 === 0 ? countryOneLabor / 2 : (countryOneLabor - 1) / 2;

  countryTwoLaborGoodOne = countryTwoLabor % 2 === 0 ? countryTwoLabor / 2 : (countryTwoLabor - 1) / 2;

  countryTwoLaborGoodTwo = countryTwoLabor % 2 === 0 ? countryTwoLabor / 2 : (countryTwoLabor + 1) / 2;

  totalLabor = countryOneLaborGoodOne + countryOneLaborGoodTwo;

  console.log("totalLabor", totalLabor);

}

function displayIndustriesCountryOne() {

  document.querySelectorAll('[id^="industries\_country\_one"]').forEach(function(element) {

    element.style.display = 'block'});

}

function hideIndustriesCountryOne() {

  document.querySelectorAll('[id^="industries\_country\_one"]').forEach(function(element) {

    element.style.display = 'none'});

}

function displayIndustriesCountryTwo() {

  document.querySelectorAll('[id^="industries\_country\_two"]').forEach(function(element) {

    element.style.display = 'block'});

}

function hideIndustriesCountryTwo() {

  document.querySelectorAll('[id^="industries\_country\_two"]').forEach(function(element) {

    element.style.display = 'none'});

}

function adjustPrices() {

  if (countryOneMPLRatioGood1 > countryTwoMPLRatioGood1) {

    calculateDifference();

    document.querySelectorAll('[id^="arrow\_price\_country\_one\_good\_one\_green"]').forEach(function(element) {

      element.style.display = 'block'});

    document.querySelectorAll('[id^="arrow\_price\_country\_one\_good\_two\_red"]').forEach(function(element) {

      element.style.display = 'block'});

    document.querySelectorAll('[id^="arrow\_price\_country\_two\_good\_two\_green"]').forEach(function(element) {

      element.style.display = 'block'});

    document.querySelectorAll('[id^="arrow\_price\_country\_two\_good\_one\_red"]').forEach(function(element) {

      element.style.display = 'block'});

          document.querySelectorAll('[id^="arrow\_labor\_country\_one\_good\_one\_green"]').forEach(function(element) {

      element.style.display = 'block'});

    document.querySelectorAll('[id^="arrow\_labor\_country\_one\_good\_two\_red"]').forEach(function(element) {

      element.style.display = 'block'});

  } else if (countryTwoMPLRatioGood1 > countryOneMPLRatioGood1) {

    calculateDifference();

    document.querySelectorAll('[id^="arrow\_price\_country\_one\_good\_one\_red"]').forEach(function(element) {

      element.style.display = 'block'});

    document.querySelectorAll('[id^="arrow\_price\_country\_one\_good\_two\_green"]').forEach(function(element) {

      element.style.display = 'block'})

    document.querySelectorAll('[id^="arrow\_price\_country\_two\_good\_two\_red"]').forEach(function(element) {

      element.style.display = 'block'})

    document.querySelectorAll('[id^="arrow\_price\_country\_two\_good\_one\_green"]').forEach(function(element) {

      element.style.display = 'block'})

    document.querySelectorAll('[id^="arrow\_labor\_country\_two\_good\_one\_red"]').forEach(function(element) {

      element.style.display = 'block'})

    document.querySelectorAll('[id^="arrow\_labor\_country\_two\_good\_two\_green"]').forEach(function(element) {

      element.style.display = 'block'})

  }

}

let CountryOnelaborStep;

let CountryTwoLaborStep;

function anotherGood() {

  document.getElementById('price-equalization-one').style.display = 'none';

  document.getElementById('price-st-good-one').style.display = 'none';

  document.getElementById('price-equalization-container-one').style.display = 'none';

  document.getElementById('price-equalization-two').style.display = 'block';

  document.getElementById('price-equalization-container-two').style.display = 'flex';

  document.getElementById('price-st-good-two').style.display = 'table';

}

function anotherGood2() {

  document.getElementById('price-equalization-two').style.display = 'none';

  document.getElementById('price-st-good-two').style.display = 'none';

  document.getElementById('price-equalization-container-two').style.display = 'none';

  document.getElementById('price-equalization-one').style.display = 'block';

  document.getElementById('price-equalization-container-one').style.display = 'flex';

  document.getElementById('price-st-good-one').style.display = 'table';

}

let speedValue = document.getElementById('speed-value');

function increaseSpeed() {

  clearInterval(intervalId1);

  clearInterval(intervalId2);

  clearInterval(intervalId3);

  clearInterval(intervalId4);

  if (time > 100) {

    time -= 50;

    console.log('Time:', time); // Log the updated time

    let currentValue = parseInt(speedValue.textContent);

    speedValue.textContent = currentValue + 1;

    adjustPrices(); // Restart the intervals with the new time value

  } else if (time <= 100) {

    time -= 10;

    console.log('Time:', time); // Log the updated time

    let currentValue = parseInt(speedValue.textContent);

    speedValue.textContent = currentValue + 1;

    adjustPrices();

  } else if (time <= 50) {

    time -= 5;

    console.log('Time:', time); // Log the updated time

    let currentValue = parseInt(speedValue.textContent);

    speedValue.textContent = currentValue + 1;

    adjustPrices();

  } else if (time <=0) {

    clearInterval(intervalId1);

    clearInterval(intervalId2);

    clearInterval(intervalId3);

    clearInterval(intervalId4);

    speedValue.textContent = "max"; // Update speed value to 0

  } // Restart the intervals with the new time value

}

function increaseSpeed2() {

  canvasSpeed += 2;

}

function decreaseSpeed() {

  // Clear all intervals

  clearInterval(intervalId1);

  clearInterval(intervalId2);

  clearInterval(intervalId3);

  clearInterval(intervalId4);

  // Increment time by 50 (assuming time represents milliseconds)

  time += 50;

  console.log('Time:', time); // Log the updated time

  // Get the current speed value and update the display

  let currentValue = parseInt(speedValue.textContent);

  speedValue.textContent = Math.max(currentValue - 1, 0);

  adjustPrices();// Ensure speed value doesn't go below 0

  // Check if speed is now 0

  if (speedValue.textContent == 0) {

    clearInterval(intervalId1);

    clearInterval(intervalId2);

    clearInterval(intervalId3);

    clearInterval(intervalId4);

    clearInterval(intervalId4);// Assuming adjustPrices() restarts intervals or performs other actions

     // Restart the intervals with the new time value or perform other actions

  }

}

function decreaseSpeed2() {

  canvasSpeed -= 1;

}

function fillCanvas() {

  // Get the first canvas element

  var canvas1 = document.getElementById('canvas\_country\_one');

  var ctx1 = canvas1.getContext("2d");

  // Get the second canvas element

  var canvas2 = document.getElementById('canvas\_country\_two');

  var ctx2 = canvas2.getContext("2d");

  // Get the dimensions of the canvases

  var canvasWidth = canvas1.width;

  var canvasHeight = canvas1.height;

  // Calculate the midpoint of the canvases

  var midpointX = canvasWidth / 2;

  // Fill the left half of the first canvas with good one color

  ctx1.fillStyle = currentColorGoodOne;

  ctx1.fillRect(0, 0, midpointX, canvasHeight);

  // Fill the right half of the first canvas with good two color

  ctx1.fillStyle = currentColorGoodTwo;

  ctx1.fillRect(midpointX, 0, midpointX, canvasHeight);

  // Fill the left half of the second canvas with good two color

  ctx2.fillStyle = currentColorGoodOne;

  ctx2.fillRect(0, 0, midpointX, canvasHeight);

  // Fill the right half of the second canvas with good one color

  ctx2.fillStyle = currentColorGoodTwo;

  ctx2.fillRect(midpointX, 0, midpointX, canvasHeight);

}

function fillCanvasWithColorTransition() {

  calculateDifference(); // Ensure this is called to set up steps and steps2

  if (countryOneMPLRatioGood1 > countryTwoMPLRatioGood1) {

    animatePriceLaborCanvas('canvas\_country\_one', 'canvas\_country\_two', currentColorGoodOne, currentColorGoodTwo, 1, -1);

  } else if (countryOneMPLRatioGood1 < countryTwoMPLRatioGood1) {

    animatePriceLaborCanvas('canvas\_country\_one', 'canvas\_country\_two', currentColorGoodTwo, currentColorGoodOne, -1, 1);

  }

}

function animatePriceLaborCanvas(canvasId1, canvasId2, color1, color2, direction1, direction2) {

  var canvas1 = document.getElementById(canvasId1);

  var ctx1 = canvas1.getContext("2d");

  var canvas2 = document.getElementById(canvasId2);

  var ctx2 = canvas2.getContext("2d");

  var canvasWidth = canvas1.width;

  var canvasHeight = canvas1.height;

  var initialPriceRatio1 = countryOnePriceRatioGood1;

  var initialPriceRatio2 = countryTwoPriceRatioGood1;

  var totalSteps = Math.max(steps, steps2);

  var initialLabor1GoodOne = countryOneLaborGoodOne;

  var initialLabor2GoodTwo = countryTwoLaborGoodTwo;

  var initialPRICEcountryOneGoodOne = PRICEcountryOneGoodOne;

  var initialPRICEcountryOneGoodTwo = PRICEcountryOneGoodTwo;

  var initialPRICEcountryTwoGoodOne = PRICEcountryTwoGoodOne;

  var initialPRICEcountryTwoGoodTwo = PRICEcountryTwoGoodTwo;

  function updatePricesAndLabor(step) {

    // Update prices

    if (direction1 > 0) {

      // Country One: Good One price increases, Good Two price decreases

      countryOnePriceRatioGood1 = initialPriceRatio1 + (worldPrice - initialPriceRatio1) \* (step / totalSteps);

      let adjustmentFactor1 = Math.sqrt(countryOnePriceRatioGood1 / initialPriceRatio1);

      PRICEcountryOneGoodOne = initialPRICEcountryOneGoodOne \* adjustmentFactor1;

      PRICEcountryOneGoodTwo = initialPRICEcountryOneGoodTwo / adjustmentFactor1;

      // Country Two: Good One price decreases, Good Two price increases

      countryTwoPriceRatioGood1 = initialPriceRatio2 - (initialPriceRatio2 - worldPrice) \* (step / totalSteps);

      let adjustmentFactor2 = Math.sqrt(countryTwoPriceRatioGood1 / initialPriceRatio2);

      PRICEcountryTwoGoodOne = initialPRICEcountryTwoGoodOne \* adjustmentFactor2;

      PRICEcountryTwoGoodTwo = initialPRICEcountryTwoGoodTwo / adjustmentFactor2;

    } else {

      // Country One: Good One price decreases, Good Two price increases

      countryOnePriceRatioGood1 = initialPriceRatio1 - (initialPriceRatio1 - worldPrice) \* (step / totalSteps);

      let adjustmentFactor1 = Math.sqrt(countryOnePriceRatioGood1 / initialPriceRatio1);

      PRICEcountryOneGoodOne = initialPRICEcountryOneGoodOne \* adjustmentFactor1;

      PRICEcountryOneGoodTwo = initialPRICEcountryOneGoodTwo / adjustmentFactor1;

      // Country Two: Good One price increases, Good Two price decreases

      countryTwoPriceRatioGood1 = initialPriceRatio2 + (worldPrice - initialPriceRatio2) \* (step / totalSteps);

      let adjustmentFactor2 = Math.sqrt(countryTwoPriceRatioGood1 / initialPriceRatio2);

      PRICEcountryTwoGoodOne = initialPRICEcountryTwoGoodOne \* adjustmentFactor2;

      PRICEcountryTwoGoodTwo = initialPRICEcountryTwoGoodTwo / adjustmentFactor2;

    }

    wages();

    PRICEcountryOneGoodOne = Math.round(PRICEcountryOneGoodOne \* 100) / 100;

    PRICEcountryOneGoodTwo = Math.round(PRICEcountryOneGoodTwo \* 100) / 100;

    PRICEcountryTwoGoodOne = Math.round(PRICEcountryTwoGoodOne \* 100) / 100;

    PRICEcountryTwoGoodTwo = Math.round(PRICEcountryTwoGoodTwo \* 100) / 100;

    countryOnePriceRatioGood1 = Math.round(countryOnePriceRatioGood1 \* 100) / 100;

    countryTwoPriceRatioGood1 = Math.round(countryTwoPriceRatioGood1 \* 100) / 100;

    // Update labor based on price changes

    var laborProgress1 = (countryOnePriceRatioGood1 - initialPriceRatio1) / (worldPrice - initialPriceRatio1);

    var laborProgress2 = (countryTwoPriceRatioGood1 - initialPriceRatio2) / (worldPrice - initialPriceRatio2);

    if (direction1 > 0) {

      countryOneLaborGoodOne = initialLabor1GoodOne + (countryOneLabor - initialLabor1GoodOne) \* laborProgress1;

      countryOneLaborGoodTwo = countryOneLabor - countryOneLaborGoodOne;

      countryTwoLaborGoodTwo = initialLabor2GoodTwo + (countryTwoLabor - initialLabor2GoodTwo) \* laborProgress2;

      countryTwoLaborGoodOne = countryTwoLabor - countryTwoLaborGoodTwo;

      document.querySelectorAll('[id^="sign\_relative\_price\_good\_one"]').forEach(function(element) {

        element.textContent = ">";

      });

      document.querySelectorAll('[id^="sign\_relative\_price\_good\_two"]').forEach(function(element) {

        element.textContent = ">";

      });

    } else {

      countryOneLaborGoodTwo = initialLabor1GoodOne + (countryOneLabor - initialLabor1GoodOne) \* laborProgress1;

      countryOneLaborGoodOne = countryOneLabor - countryOneLaborGoodTwo;

      countryTwoLaborGoodOne = initialLabor2GoodTwo + (countryTwoLabor - initialLabor2GoodTwo) \* laborProgress2;

      countryTwoLaborGoodTwo = countryTwoLabor - countryTwoLaborGoodOne;

      document.querySelectorAll('[id^="sign\_relative\_price\_good\_one"]').forEach(function(element) {

        element.textContent = "<";

      });

      document.querySelectorAll('[id^="sign\_relative\_price\_good\_two"]').forEach(function(element) {

        element.textContent = "<";

      });

    }

    updatePriceDisplay();

    updateLaborDisplay();

  }

  function updateCanvas() {

    ctx1.clearRect(0, 0, canvasWidth, canvasHeight);

    ctx2.clearRect(0, 0, canvasWidth, canvasHeight);

    var fillWidth1 = (countryOneLaborGoodOne / countryOneLabor) \* canvasWidth;

    var fillWidth2 = (countryTwoLaborGoodTwo / countryTwoLabor) \* canvasWidth;

    ctx1.fillStyle = color1;

    ctx1.fillRect(0, 0, fillWidth1, canvasHeight);

    ctx1.fillStyle = color2;

    ctx1.fillRect(fillWidth1, 0, canvasWidth - fillWidth1, canvasHeight);

    ctx2.fillStyle = color2;

    ctx2.fillRect(0, 0, fillWidth2, canvasHeight);

    ctx2.fillStyle = color1;

    ctx2.fillRect(fillWidth2, 0, canvasWidth - fillWidth2, canvasHeight);

  }

  var step = 0;

  var intervalId = setInterval(function() {

    step++;

    updatePricesAndLabor(step);

    updateCanvas();

    if (step >= totalSteps) {

      clearInterval(intervalId);

      // Ensure final values are set correctly

      countryOnePriceRatioGood1 = worldPrice;

      countryTwoPriceRatioGood1 = worldPrice;

      updatePricesAndLabor(totalSteps);

      updateCanvas();

      document.querySelectorAll('[id^="sign\_relative\_price\_good\_one"]').forEach(function(element) {

        element.textContent = "="; });

      document.querySelectorAll('[id^="sign\_relative\_price\_good\_two"]').forEach(function(element) {

        element.textContent = "="; });

    }

  }, time);

}

function updatePriceDisplay() {

  // Update price ratios

  document.querySelectorAll('[id^="price\_ratio\_country\_one\_good\_one"]').forEach(function(element) {

    element.textContent = countryOnePriceRatioGood1.toFixed(2);

  });

  document.querySelectorAll('[id^="price\_ratio\_country\_two\_good\_one"]').forEach(function(element) {

    element.textContent = countryTwoPriceRatioGood1.toFixed(2);

  });

  document.querySelectorAll('[id^="price\_ratio\_country\_one\_good\_two"]').forEach(function(element) {

    element.textContent = (1 /countryOnePriceRatioGood1).toFixed(2);

  });

  document.querySelectorAll('[id^="price\_ratio\_country\_two\_good\_two"]').forEach(function(element) {

    element.textContent = (1 / countryTwoPriceRatioGood1).toFixed(2);

  });

  // Update absolute prices

  document.querySelectorAll('[id^="price\_country\_one\_good\_one"]').forEach(function(element) {

    element.textContent = PRICEcountryOneGoodOne.toFixed(2);

  });

  document.querySelectorAll('[id^="price\_country\_one\_good\_two"]').forEach(function(element) {

    element.textContent = PRICEcountryOneGoodTwo.toFixed(2);

  });

  document.querySelectorAll('[id^="price\_country\_two\_good\_one"]').forEach(function(element) {

    element.textContent = PRICEcountryTwoGoodOne.toFixed(2);

  });

  document.querySelectorAll('[id^="price\_country\_two\_good\_two"]').forEach(function(element) {

    element.textContent = PRICEcountryTwoGoodTwo.toFixed(2);

  });

}

function updateLaborDisplay() {

  document.querySelectorAll('[id^="country\_one\_labor\_good\_one"]').forEach(function(element) {

    element.textContent = Math.round(countryOneLaborGoodOne);

  });

  document.querySelectorAll('[id^="country\_one\_labor\_good\_two"]').forEach(function(element) {

    element.textContent = Math.round(countryOneLaborGoodTwo);

  });

  document.querySelectorAll('[id^="country\_two\_labor\_good\_one"]').forEach(function(element) {

    element.textContent = Math.round(countryTwoLaborGoodOne);

  });

  document.querySelectorAll('[id^="country\_two\_labor\_good\_two"]').forEach(function(element) {

    element.textContent = Math.round(countryTwoLaborGoodTwo);

  });

}

function displayEqualSign() {

if (countryOnePriceRatioGood1 === countryTwoPriceRatioGood1 && countryOnePriceRatioGood2 === countryTwoPriceRatioGood2) {

  document.querySelectorAll('[id^="sign\_relative\_price\_good\_one"]').forEach(function(element) {

    element.textContent = "=";

  });

  document.querySelectorAll('[id^="sign\_relative\_price\_good\_two"]').forEach(function(element) {

    element.textContent = "=";

  });

}

}