Lab-9

1. Create a module for area calculation in node.js for circle, rectangle, and square. Use this module in your current file to find area of all shape.

Area.js :-

module.exports = {

  circle: function (radius) {

    return Math.PI \* radius \* radius;

  },

  rectangle: function (length, width) {

    return length \* width;

  },

  square: function (side) {

    return side \* side;

  },

};

Node\_area.js :-

var http = require("http");

var url = require("url");

var area = require("./area");

http

  .createServer(function (req, res) {

    if (req.method === "GET") {

      var parsedUrl = url.parse(req.url, true);

      if (parsedUrl.pathname === "/") {

        res.writeHead(200, { "Content-Type": "text/html" });

        res.write(`

          <h1>Enter Dimensions to Calculate Areas</h1>

          <form action="/calculate" method="get">

            <label>Radius (for Circle):</label>

            <input type="number" step="any" name="radius" /><br><br>

            <label>Length (for Rectangle):</label>

            <input type="number" step="any" name="length" /><br><br>

            <label>Width (for Rectangle):</label>

            <input type="number" step="any" name="width" /><br><br>

            <label>Side (for Square):</label>

            <input type="number" step="any" name="side" /><br><br>

            <input type="submit" value="Calculate Areas">

          </form>

        `);

        res.end();

      } else if (parsedUrl.pathname === "/calculate") {

        var q = parsedUrl.query;

        var radius = q.radius ? parseFloat(q.radius) : 0;

        var length = q.length ? parseFloat(q.length) : 0;

        var width = q.width ? parseFloat(q.width) : 0;

        var side = q.side ? parseFloat(q.side) : 0;

        res.writeHead(200, { "Content-Type": "text/html" });

        res.write("<h1>Area Calculations</h1>");

        if (radius > 0) {

          var circleArea = area.circle(radius).toFixed(2);

          res.write(

            `<p>Area of Circle with radius ${radius}: ${circleArea}</p>`

          );

        }

        if (length > 0 && width > 0) {

          var rectangleArea = area.rectangle(length, width).toFixed(2);

          res.write(

            `<p>Area of Rectangle with length ${length} and width ${width}: ${rectangleArea}</p>`

          );

        }

        if (side > 0) {

          var squareArea = area.square(side).toFixed(2);

          res.write(`<p>Area of Square with side ${side}: ${squareArea}</p>`);

        }

        res.end();

      }

    }

  })

  .listen(8080);