ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ

"ДОНЕЦКИЙ НАЦИОНАЛЬНЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ"

Факультет ФИСП

Кафедра ПИ

Лабораторная работа №5

предмет: «Технология разработки и сопровождения интернет-сайтов»

по теме: «Работа с библиотекой PHP GD»

Вариант №15

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ДОНЕЦК – 2024

1. Цель работы

Получить практические навыки в использовании графической библиотеки PHP GRAPHICS DRAW (GD)

1. Задание

15 вариант. Форма для голосования с выводом результатов в виде круговой диаграммы с указанием долей в процентах.

1. Порядок выполнения
2. Написать PHP-скрипт в соответствии с заданным вариантом.
3. Протестировать созданный PHP-скрипт.
4. Демонстрация работы скрипта:

На рисунке 1.1 изображена демонстрация работы скрипта.

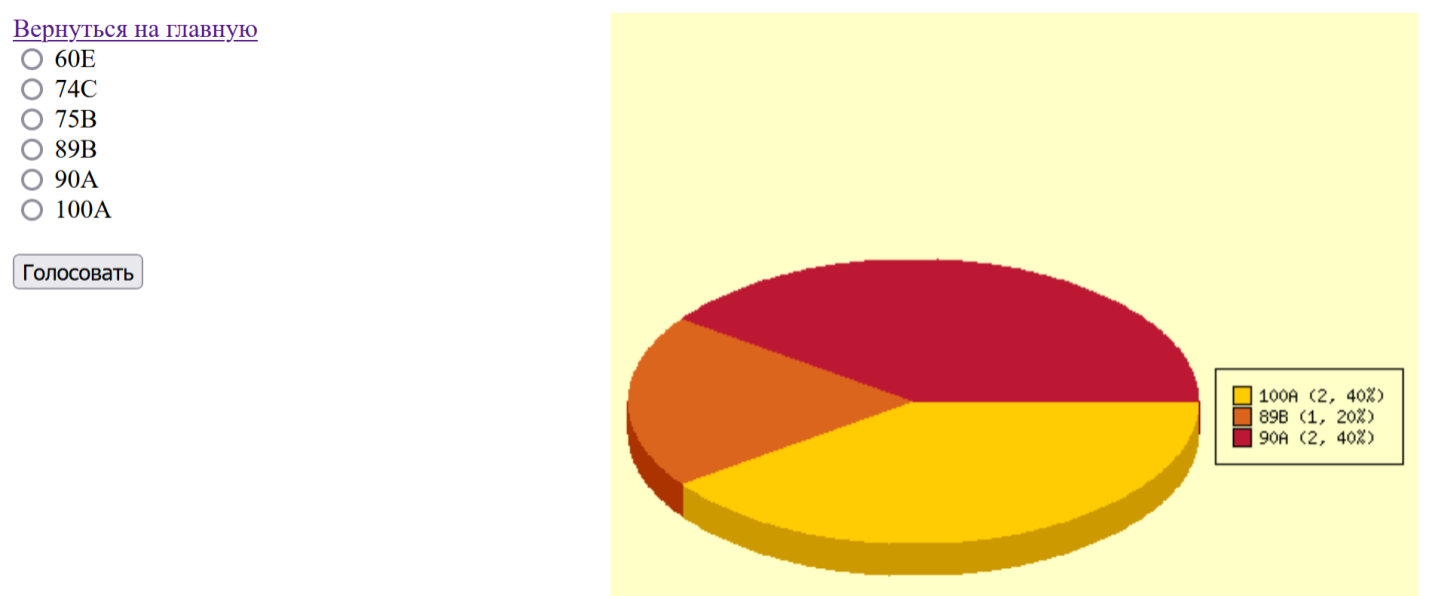


Рисунок 1 – Главная страница

2 Код программы

**Index.php**

|  |
| --- |
| <!doctype html> |
|  |

|  |
| --- |
| <html lang="en"> |
|  |

|  |
| --- |
| <head> |
|  |

|  |
| --- |
| <meta charset="UTF-8"> |
|  |

|  |
| --- |
| <meta name="viewport" |
|  |

|  |
| --- |
| content="width=device-width, user-scalable=no, initial-scale=1.0, maximum-scale=1.0, minimum-scale=1.0"> |
|  |

|  |
| --- |
| <meta http-equiv="X-UA-Compatible" content="ie=edge"> |
|  |

|  |
| --- |
| <title>Document</title> |
|  |

|  |
| --- |
| </head> |
|  |

|  |
| --- |
| <body> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <a href="/">Вернуться на главную</a> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <img src="/lab5/images/votes.png?v=<?php echo time() ?>" alt="#" style="float: right"> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <form action="/lab5/vote.php" method="POST"> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <input id="c1" type="radio" name="vote" value="60E"/> |
|  |

|  |
| --- |
| <label for="c1">60E</label> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <input id="c2" type="radio" name="vote" value="74C"/> |
|  |

|  |
| --- |
| <label for="c2">74C</label> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <input id="c3" type="radio" name="vote" value="75B"/> |
|  |

|  |
| --- |
| <label for="c3">75B</label> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <input id="c4" type="radio" name="vote" value="89B"/> |
|  |

|  |
| --- |
| <label for="c4">89B</label> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <input id="c5" type="radio" name="vote" value="90A"/> |
|  |

|  |
| --- |
| <label for="c5">90A</label> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <input id="c6" type="radio" name="vote" value="100A"/> |
|  |

|  |
| --- |
| <label for="c6">100A</label> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
| <br> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| <button type="submit">Голосовать</button> |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| </form> |
|  |

|  |
| --- |
| </body> |
|  |

|  |
| --- |
| </html> |

**Vote.php**

|  |
| --- |
| <?php |
|  |

|  |
| --- |
| $COOKIE\_EXPIRES\_AFTER = 60606006; |
|  |

|  |
| --- |
| if (!empty($\_POST['vote'])) { |
|  |

|  |
| --- |
| $result = $\_POST['vote']; |
|  |

|  |
| --- |
| if (!empty($\_COOKIE['votes'])) { |
|  |

|  |
| --- |
| $currentVotes = json\_decode($\_COOKIE['votes'], true); |
|  |

|  |
| --- |
| $currentVotes[$result] += 1; |
|  |

|  |
| --- |
| } else { |
|  |

|  |
| --- |
| $currentVotes = []; |
|  |

|  |
| --- |
| $currentVotes[$result] = 1; |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| setcookie('votes', json\_encode($currentVotes), time() + $COOKIE\_EXPIRES\_AFTER); |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
|  |
|  |

header("Location: ./diagram.php");

**diagram.php**

|  |
| --- |
| <?php |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // $im - идентификатор изображения |
|  |

|  |
| --- |
| // $VALUES - массив со значениями |
|  |

|  |
| --- |
| // $LEGEND - массив с подписями |
|  |

|  |
| --- |
| function Diagramm($im, $VALUES, $LEGEND) { |
|  |

|  |
| --- |
| global $COLORS, $SHADOWS; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $black = ImageColorAllocate($im, 0, 0, 0); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Получим размеры изображения |
|  |

|  |
| --- |
| $W = ImageSX($im); |
|  |

|  |
| --- |
| $H = ImageSY($im); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Вывод легенды ##################################### |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Посчитаем количество пунктов, от этого зависит высота легенды |
|  |

|  |
| --- |
| $legend\_count = count($LEGEND); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Посчитаем максимальную длину пункта, от этого зависит ширина легенды |
|  |

|  |
| --- |
| $max\_length = 0; |
|  |

|  |
| --- |
| foreach ($LEGEND as $v) if ($max\_length < strlen($v)) $max\_length = strlen($v); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Номер шрифта, котором мы будем выводить легенду |
|  |

|  |
| --- |
| $FONT = 2; |
|  |

|  |
| --- |
| $font\_w = ImageFontWidth($FONT); |
|  |

|  |
| --- |
| $font\_h = ImageFontHeight($FONT); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Вывод прямоугольника - границы легенды ---------------------------- |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $l\_width = ($font\_w \* $max\_length) + $font\_h + 10 + 5 + 10; |
|  |

|  |
| --- |
| $l\_height = $font\_h \* $legend\_count + 10 + 10; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Получим координаты верхнего левого угла прямоугольника - границы легенды |
|  |

|  |
| --- |
| $l\_x1 = $W - 10 - $l\_width; |
|  |

|  |
| --- |
| $l\_y1 = ($H - $l\_height) / 2; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Выводя прямоугольника - границы легенды |
|  |

|  |
| --- |
| ImageRectangle($im, $l\_x1, $l\_y1, $l\_x1 + $l\_width, $l\_y1 + $l\_height, $black); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Вывод текст легенды и цветных квадратиков |
|  |

|  |
| --- |
| $text\_x = $l\_x1 + 10 + 5 + $font\_h; |
|  |

|  |
| --- |
| $square\_x = $l\_x1 + 10; |
|  |

|  |
| --- |
| $y = $l\_y1 + 10; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $i = 0; |
|  |

|  |
| --- |
| foreach ($LEGEND as $v) { |
|  |

|  |
| --- |
| $dy = $y + ($i \* $font\_h); |
|  |

|  |
| --- |
| ImageString($im, $FONT, $text\_x, $dy, $v, $black); |
|  |

|  |
| --- |
| ImageFilledRectangle($im, |
|  |

|  |
| --- |
| $square\_x + 1, $dy + 1, $square\_x + $font\_h - 1, $dy + $font\_h - 1, |
|  |

|  |
| --- |
| $COLORS[$i]); |
|  |

|  |
| --- |
| ImageRectangle($im, |
|  |

|  |
| --- |
| $square\_x + 1, $dy + 1, $square\_x + $font\_h - 1, $dy + $font\_h - 1, |
|  |

|  |
| --- |
| $black); |
|  |

|  |
| --- |
| $i++; |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Вывод круговой диаграммы ---------------------------------------- |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $total = array\_sum($VALUES); |
|  |

|  |
| --- |
| $anglesum = $angle = array(0); |
|  |

|  |
| --- |
| $i = 1; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Расчет углов |
|  |

|  |
| --- |
| while ($i < count($VALUES)) { |
|  |

|  |
| --- |
| $part = $VALUES[$i - 1] / $total; |
|  |

|  |
| --- |
| $angle[$i] = floor($part \* 360); |
|  |

|  |
| --- |
| $anglesum[$i] = array\_sum($angle); |
|  |

|  |
| --- |
| $i++; |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| $anglesum[] = $anglesum[0]; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Расчет диаметра |
|  |

|  |
| --- |
| $diametr = $l\_x1 - 10 - 10; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Расчет координат центра эллипса |
|  |

|  |
| --- |
| $circle\_x = ($diametr / 2) + 10; |
|  |

|  |
| --- |
| $circle\_y = $H / 2 - 10; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Поправка диаметра, если эллипс не помещается по высоте |
|  |

|  |
| --- |
| if ($diametr > ($H \* 2) - 10 - 10) $diametr = ($H \* 2) - 20 - 20 - 40; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Вывод тени |
|  |

|  |
| --- |
| for ($j = 20; $j > 0; $j--) |
|  |

|  |
| --- |
| for ($i = 0; $i < count($anglesum) - 1; $i++) |
|  |

|  |
| --- |
| ImageFilledArc($im, $circle\_x, $circle\_y + $j, |
|  |

|  |
| --- |
| $diametr, $diametr / 2, |
|  |

|  |
| --- |
| $anglesum[$i], $anglesum[$i + 1], |
|  |

|  |
| --- |
| $SHADOWS[$i], IMG\_ARC\_PIE); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| // Вывод круговой диаграммы |
|  |

|  |
| --- |
| for ($i = 0; $i < count($anglesum) - 1; $i++) |
|  |

|  |
| --- |
| ImageFilledArc($im, $circle\_x, $circle\_y, |
|  |

|  |
| --- |
| $diametr, $diametr / 2, |
|  |

|  |
| --- |
| $anglesum[$i], $anglesum[$i + 1], |
|  |

|  |
| --- |
| $COLORS[$i], IMG\_ARC\_PIE); |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $im = ImageCreate(500, 500); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $bgcolor = ImageColorAllocate($im, 255, 255, 200); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $COLORS[0] = imagecolorallocate($im, 255, 203, 3); |
|  |

|  |
| --- |
| $COLORS[1] = imagecolorallocate($im, 220, 101, 29); |
|  |

|  |
| --- |
| $COLORS[2] = imagecolorallocate($im, 189, 24, 51); |
|  |

|  |
| --- |
| $COLORS[3] = imagecolorallocate($im, 214, 0, 127); |
|  |

|  |
| --- |
| $COLORS[4] = imagecolorallocate($im, 98, 1, 96); |
|  |

|  |
| --- |
| $COLORS[5] = imagecolorallocate($im, 0, 62, 136); |
|  |

|  |
| --- |
| $COLORS[6] = imagecolorallocate($im, 0, 102, 179); |
|  |

|  |
| --- |
| $COLORS[7] = imagecolorallocate($im, 0, 145, 195); |
|  |

|  |
| --- |
| $COLORS[8] = imagecolorallocate($im, 0, 115, 106); |
|  |

|  |
| --- |
| $COLORS[9] = imagecolorallocate($im, 178, 210, 52); |
|  |

|  |
| --- |
| $COLORS[10] = imagecolorallocate($im, 137, 91, 74); |
|  |

|  |
| --- |
| $COLORS[11] = imagecolorallocate($im, 82, 56, 47); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $SHADOWS[0] = imagecolorallocate($im, 205, 153, 0); |
|  |

|  |
| --- |
| $SHADOWS[1] = imagecolorallocate($im, 170, 51, 0); |
|  |

|  |
| --- |
| $SHADOWS[2] = imagecolorallocate($im, 139, 0, 1); |
|  |

|  |
| --- |
| $SHADOWS[3] = imagecolorallocate($im, 164, 0, 77); |
|  |

|  |
| --- |
| $SHADOWS[4] = imagecolorallocate($im, 48, 0, 46); |
|  |

|  |
| --- |
| $SHADOWS[5] = imagecolorallocate($im, 0, 12, 86); |
|  |

|  |
| --- |
| $SHADOWS[6] = imagecolorallocate($im, 0, 52, 129); |
|  |

|  |
| --- |
| $SHADOWS[7] = imagecolorallocate($im, 0, 95, 145); |
|  |

|  |
| --- |
| $SHADOWS[8] = imagecolorallocate($im, 0, 65, 56); |
|  |

|  |
| --- |
| $SHADOWS[9] = imagecolorallocate($im, 128, 160, 2); |
|  |

|  |
| --- |
| $SHADOWS[10] = imagecolorallocate($im, 87, 41, 24); |
|  |

|  |
| --- |
| $SHADOWS[11] = imagecolorallocate($im, 32, 6, 0); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $VALUES = []; |
|  |

|  |
| --- |
| $LEGEND = []; |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| if (!empty($\_COOKIE['votes'])) { |
|  |

|  |
| --- |
| $votes = json\_decode($\_COOKIE['votes']); |
|  |

|  |
| --- |
| $total = 0; |
|  |

|  |
| --- |
| foreach ($votes as $vote) { |
|  |

|  |
| --- |
| $total += $vote; |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| foreach ($votes as $key => $number) { |
|  |

|  |
| --- |
| $VALUES[] = $number; |
|  |

|  |
| --- |
| $LEGEND[] = $key . ' (' . $number . ', ' . round($number / $total \* 100, 2) . '%)'; |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
| } |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| Diagramm($im, $VALUES, $LEGEND); |
|  |

|  |
| --- |
| ImagePNG($im, '/var/www/public/lab5/images/votes.png'); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| header("Location: ./index.php"); |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| ?> |