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1: <?php
2: include_once __DIR__."/major_parameters.php";
3:
4: $folder = "img";
5: $numbers = array(4, 6, 7, 9);
6:
7: $regions = array();
8: $regions[1] = array("x1"=>0 + $boardmargin, "x2"=>$width/2, "y1"=>0 + $boardmargin,
   "y2"=>$height/2);
9: $regions[2] = array("x1"=>$width/2+1, "x2"=>$width - $boardmargin, "y1"=>0 +
   $boardmargin, "y2"=>$height/2);
10: $regions[3] = array("x1"=>0 + $boardmargin, "x2"=>$width/2, "y1"=>$height/2+1,
   "y2"=>$height - $boardmargin);
11: $regions[4] = array("x1"=>$width/2+1, "x2"=>$width - $boardmargin, "y1"=>$height/2+1,
   "y2"=>$height - $boardmargin);
12:
13: foreach($regions as $key=>$points){
14:     $regions[$key]["x1"] = floor($points["x1"]);
15:     $regions[$key]["x2"] = floor($points["x2"] - $fontSize);
16:     $regions[$key]["y1"] = floor($points["y1"] + $fontSize);
17:     $regions[$key]["y2"] = floor($points["y2"]);
18: }
19:
20: $statAns = array();
21: $statLetters = array();
22: $statRegions = array();
23: for($i=1; $i<=$trial; $i++){
24:     $statLetters[$i] = array();
25:     for($k=65; $k<=90; $k++){
26:         $statLetters[$i][$k] = 0;
27:     }
28:     $statRegions[$i] = array();
29:     for($k=1; $k<=4; $k++){
30:         $statRegions[$i][$k] = 0;
31:     }
32: }
33:
34: $q = array();
35: $occupyStr = "";
36: for($k=1; $k<=$trial; $k++){
37:     $img = imagecreate($width, $height);
38:     $backgroundColor = imagecolorallocate($img, 255, 255, 255);
39:     $textColor = imagecolorallocate($img, 0, 0, 0);
40:     $redColor = imagecolorallocate($img, 255, 0, 0);
41:     $greenColor = imagecolorallocate($img, 25, 123, 48);
42:     $greyColor = imagecolorallocate($img, 204, 204, 204);
43:
44:     imagesetthickness($img, 1);
45:
46:     $occupiedRegions = array();
47:
48:     $targetStr = $numbers[mt_rand(0, count($numbers)-1)];
49:     $targetRegion = mt_rand(1, 4);
50:     while($k>3 && $targetRegion==$q[$k-1] && $targetRegion==$q[$k-2] &&
       $targetRegion==$q[$k-3]){
51:         $targetRegion = mt_rand(1, 4);
52:     }
53:     $q[] = $targetRegion;
54:     $targetX = mt_rand($regions[$targetRegion]["x1"], $regions[$targetRegion]["x2"]);
55:     $targetY = mt_rand($regions[$targetRegion]["y1"], $regions[$targetRegion]["y2"]);
56:     $textSize = imagettfbbox($fontSize, 0, dirname(__FILE__)."/Arial.ttf", $targetStr);
57:     $textWidth = abs($textSize[0] - $textSize[2]);
58:     $textHeight = abs($textSize[3] - $textSize[5]);
59:
60:     $tmpRegion = array("x1" => $targetX - $fontMargin,
61:         "y1" => $targetY + $fontMargin,
62:         "x2" => $targetX + $textWidth + $fontMargin,
63:         "y2" => $targetY - $textHeight - $fontMargin,
64:         "str" => $targetStr,
65:         "region" => $targetRegion
66:     );
67:     $occupiedRegions[] = $tmpRegion;

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68:  imagettftext($img, $fontSize, 0, $targetX, $targetY, $textColor, dirname(__FILE__)."/
69:      Arial.ttf", $targetStr);
70:  $statAns[$k] = $targetRegion."\t".$targetStr;
71:  $spotRegion = $targetRegion;
72:  $spotStr = $targetStr;
73:
74:  for($r=1; $r<=4; $r++){
75:      for($i=0, $c=0; $i<20; $c++){
76:          do{
77:              $targetStr = chr(mt_rand(65, 90));
78:          }while($targetStr=="I" || $targetStr=="O");
79:
80:          $targetRegion = $r;
81:          $targetX = mt_rand($regions[$targetRegion]["x1"], $regions[$targetRegion]["x2"]);
82:          $targetY = mt_rand($regions[$targetRegion]["y1"], $regions[$targetRegion]["y2"]);
83:          $textSize = imagettfbbox($fontSize, 0, dirname(__FILE__)."/Arial.ttf",
84:              $targetStr);
85:          $textWidth = abs($textSize[0] - $textSize[2]);
86:          $textHeight = abs($textSize[3] - $textSize[5]);
87:
88:          $occupied = false;
89:          $tmpRegion = array(
90:              "trial" => $k,
91:              "str" => $targetStr,
92:              "x1" => $targetX - $fontMargin,
93:              "y1" => $targetY + $fontMargin,
94:              "x2" => $targetX + $textWidth + $fontMargin,
95:              "y2" => $targetY - $textHeight - $fontMargin,
96:              "region" => $targetRegion
97:          );
98:          foreach($occupiedRegions as $occupiedRegion){
99:              if(($tmpRegion["x1"]>=$occupiedRegion["x1"] &&
100:                 $tmpRegion["x1"]<=$occupiedRegion["x2"] &&
101:                 $tmpRegion["y1"]<=$occupiedRegion["y1"] &&
102:                 $tmpRegion["y1"]>=$occupiedRegion["y2"]) ||
103:                 ($tmpRegion["x2"]>=$occupiedRegion["x1"] &&
104:                 $tmpRegion["x2"]<=$occupiedRegion["x2"] &&
105:                 $tmpRegion["y1"]<=$occupiedRegion["y1"] &&
106:                 $tmpRegion["y1"]>=$occupiedRegion["y2"]) ||
107:                 ($tmpRegion["x1"]>=$occupiedRegion["x1"] &&
108:                 $tmpRegion["x1"]<=$occupiedRegion["x2"] &&
109:                 $tmpRegion["y1"]<=$occupiedRegion["y1"] &&
110:                 $tmpRegion["y1"]>=$occupiedRegion["y2"]) ||
111:                 ($tmpRegion["x2"]>=$occupiedRegion["x1"] &&
112:                 $tmpRegion["x2"]<=$occupiedRegion["x2"] &&
113:                 $tmpRegion["y1"]<=$occupiedRegion["y1"] &&
114:                 $tmpRegion["y1"]>=$occupiedRegion["y2"]) ||
115:                 ($tmpRegion["x1"]>=$occupiedRegion["x1"] &&
116:                 $tmpRegion["x1"]<=$occupiedRegion["x2"] &&
117:                 $tmpRegion["y2"]<=$occupiedRegion["y1"] &&
118:                 $tmpRegion["y2"]>=$occupiedRegion["y2"]) ||
119:                 ($tmpRegion["x2"]>=$occupiedRegion["x1"] &&
120:                 $tmpRegion["x2"]<=$occupiedRegion["x2"] &&
121:                 $tmpRegion["y1"]<=$occupiedRegion["y1"] &&
122:                 $tmpRegion["y1"]>=$occupiedRegion["y2"]){

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122:     if(!$occupied){
123:         $occupiedRegions[] = $tmpRegion;
124:         imagettftext($img, $fontSize, 0, $targetX, $targetY, $textColor,
125:             dirname(__FILE__)."/Arial.ttf", $targetStr);
126:         $i++;
127:     }
128: }
129:
130: imagepng($img, dirname(__FILE__)."/$folder/img".str_pad($k, 2, "0",
131:     STR_PAD_LEFT).".png", 9);
132:
133: foreach($occupiedRegions as $occupiedRegion){
134:     $occupyStr .= json_encode($occupiedRegion)."\n";
135: }
136: // statistics
137: for($i=1; $i<count($occupiedRegions); $i++){
138:     $statLetters[$k][ord($occupiedRegions[$i]["str"])]++;
139:     $statRegions[$k][$occupiedRegions[$i]["region"]]++;
140: }
141:
142: imagecolordeallocate($img, $backgroundColor);
143: imagecolordeallocate($img, $textColor);
144: imagedestroy($img);
145: }
146:
147: var_dump($statLetters);
148: var_dump($statRegions);
149:
150: $str = "";
151: foreach($statAns as $key=>$value){
152:     $str .= $key."\t".$value."\n";
153: }
154: file_put_contents(dirname(__FILE__)."/$folder/data-answer.txt", $str);
155:
156: $str = "";
157:
158: for($i=65; $i<=90; $i++){
159:     $str .= chr($i)."\t";
160: }
161: $str .= "\n";
162: foreach($statLetters as $key=>$value){
163:     foreach($value as $letter=>$count){
164:         $str .= $count."\t";
165:     }
166:     $str .= "\n";
167: }
168:
169: file_put_contents(dirname(__FILE__)."/$folder/data-letter.txt", $str);
170: file_put_contents(dirname(__FILE__)."/$folder/detail.txt", $occupyStr);
171:
172: echo "Done";
173: ?>

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