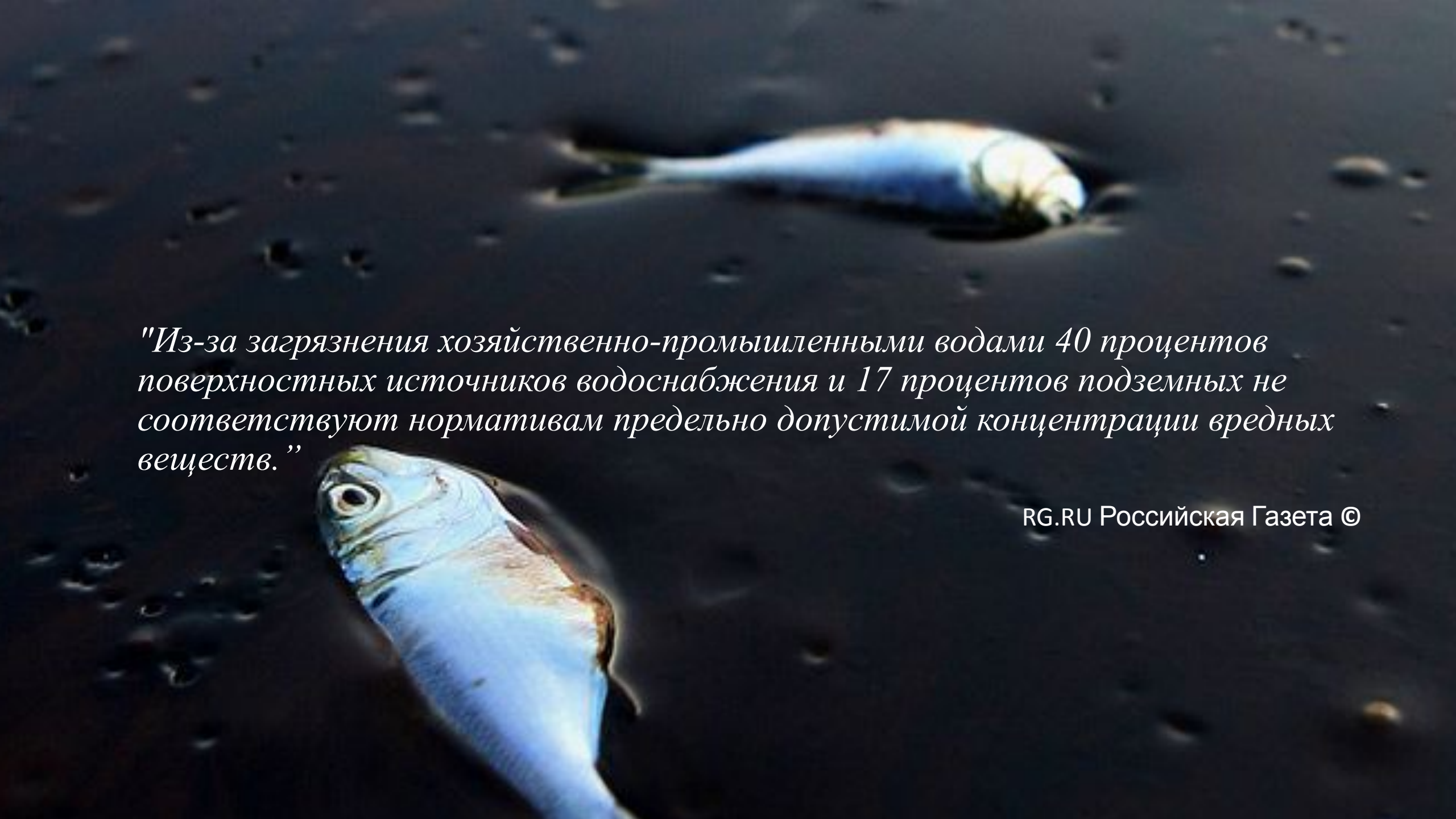
selFish

SELFCONTROLLED WATER POLUTION ANALYZING SYSTEM

Абрамов Владислав Мурашов Леонид Горохов Михаил Дмитрий Лифановский Дарья Перегудова


МЫ ТО,
ЧТО МЫ ПЬЕМ



"Из-за загрязнения хозяйственно-промышленными водами 40 процентов поверхностных источников водоснабжения и 17 процентов подземных не соответствуют нормативам предельно допустимой концентрации вредных веществ.”

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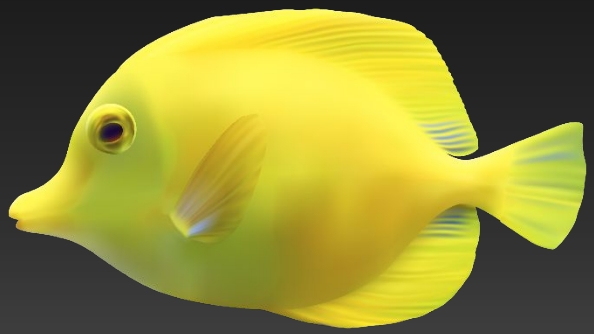
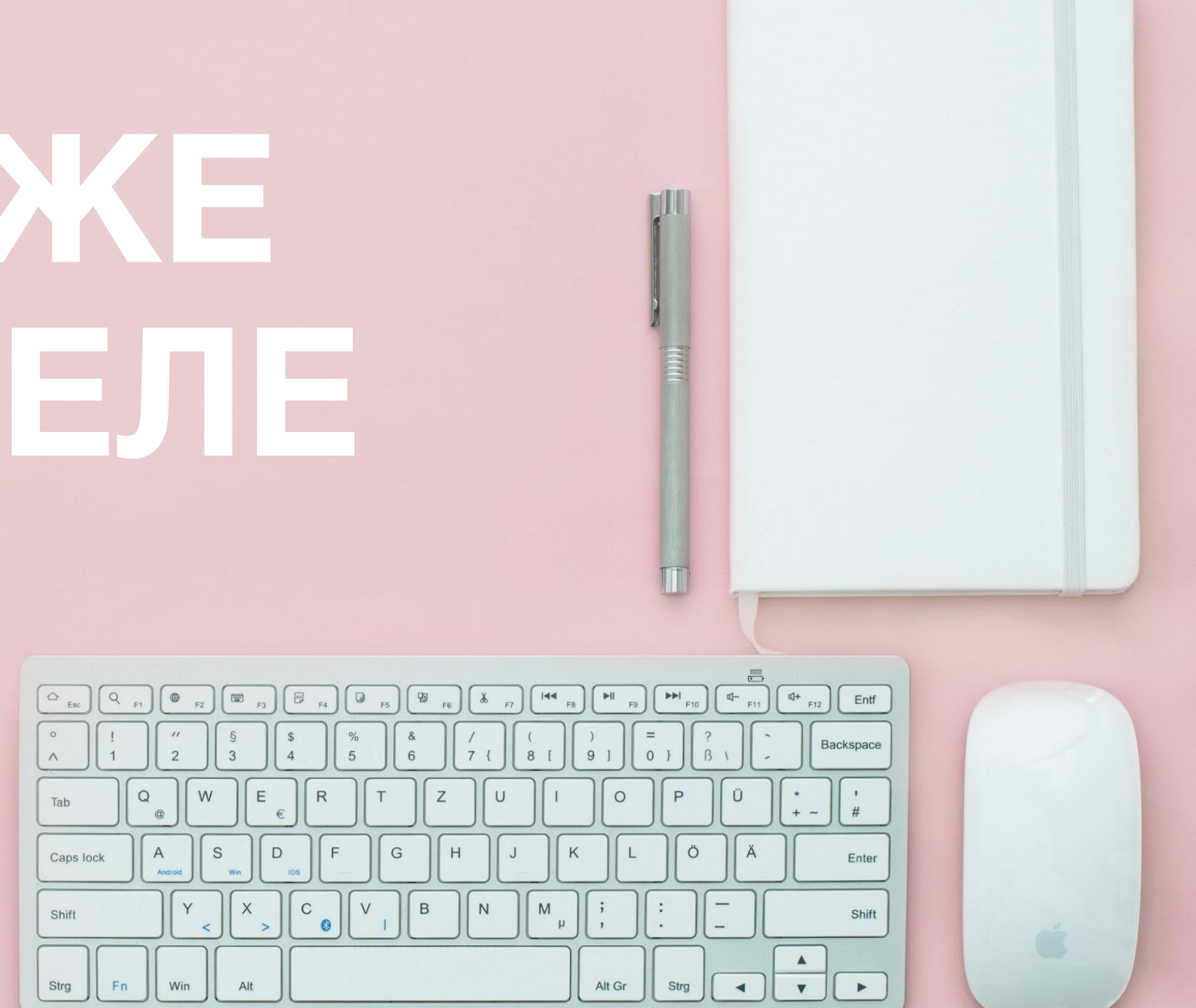
ИДЕЯ?


WIZARD AID
1600W


FBI
DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
POLICE

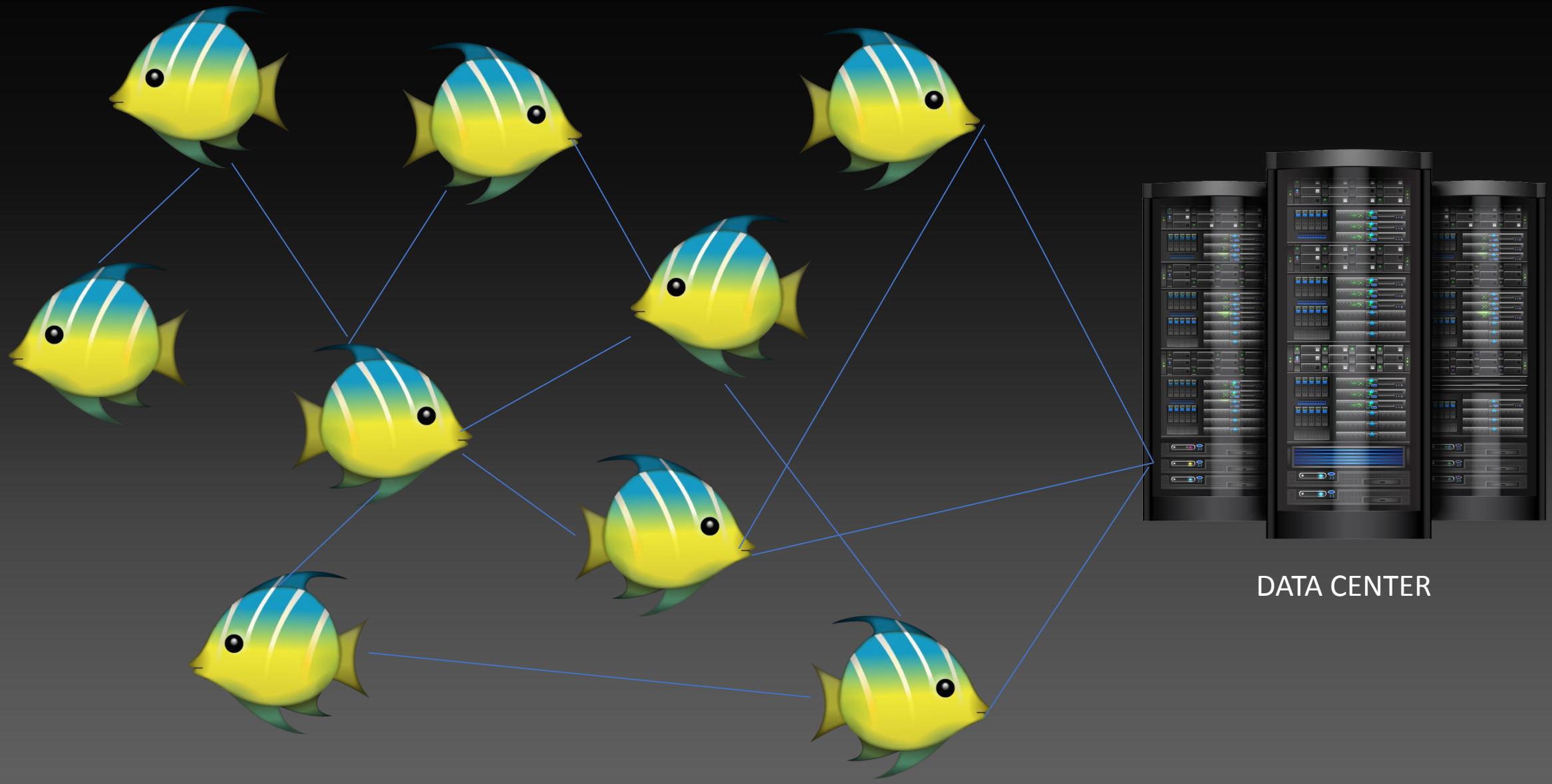


ЧТО ЖЕ НА ДЕЛЕ



1000 РЫБ
1 ОЗЕРО

IoT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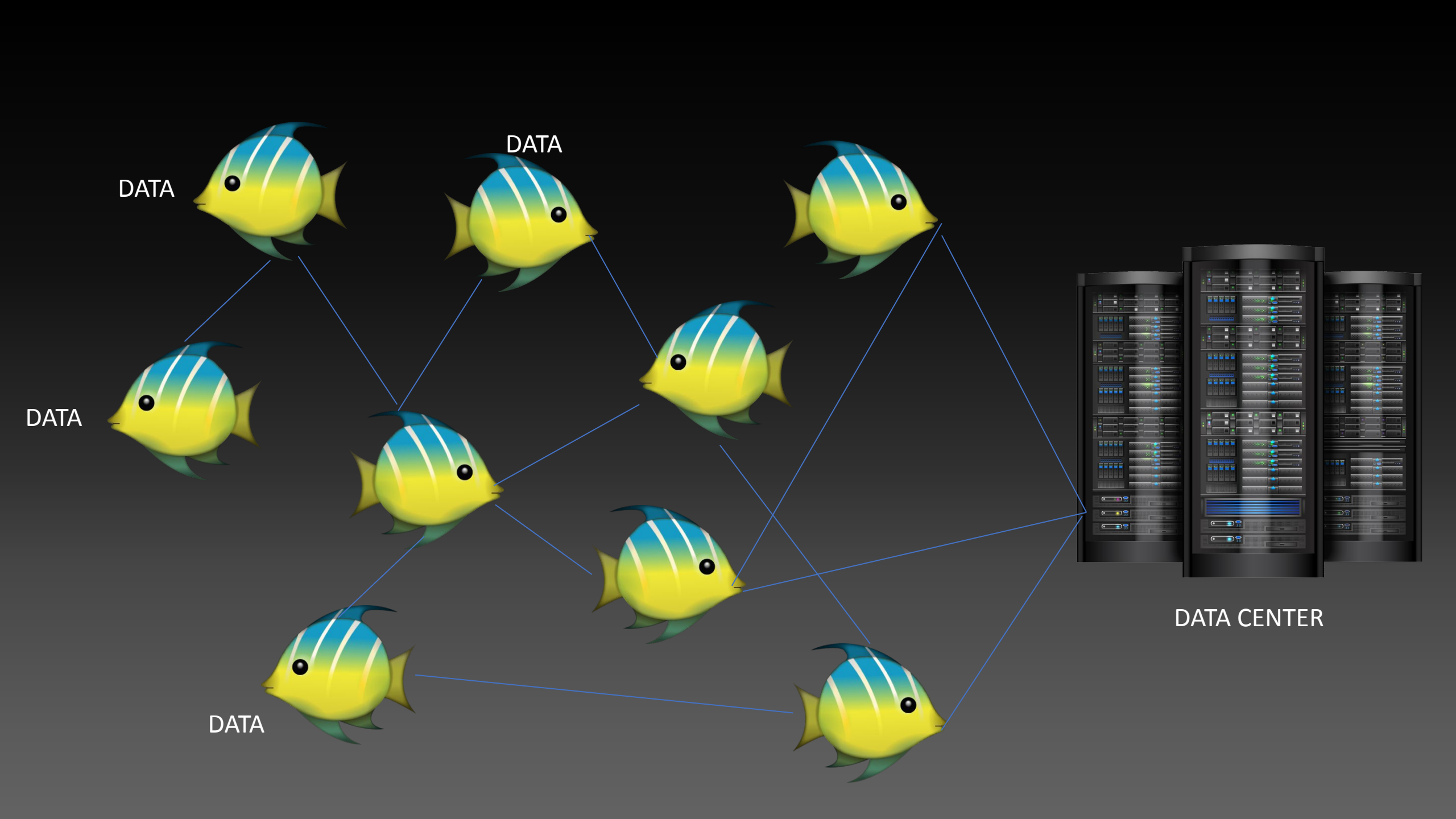
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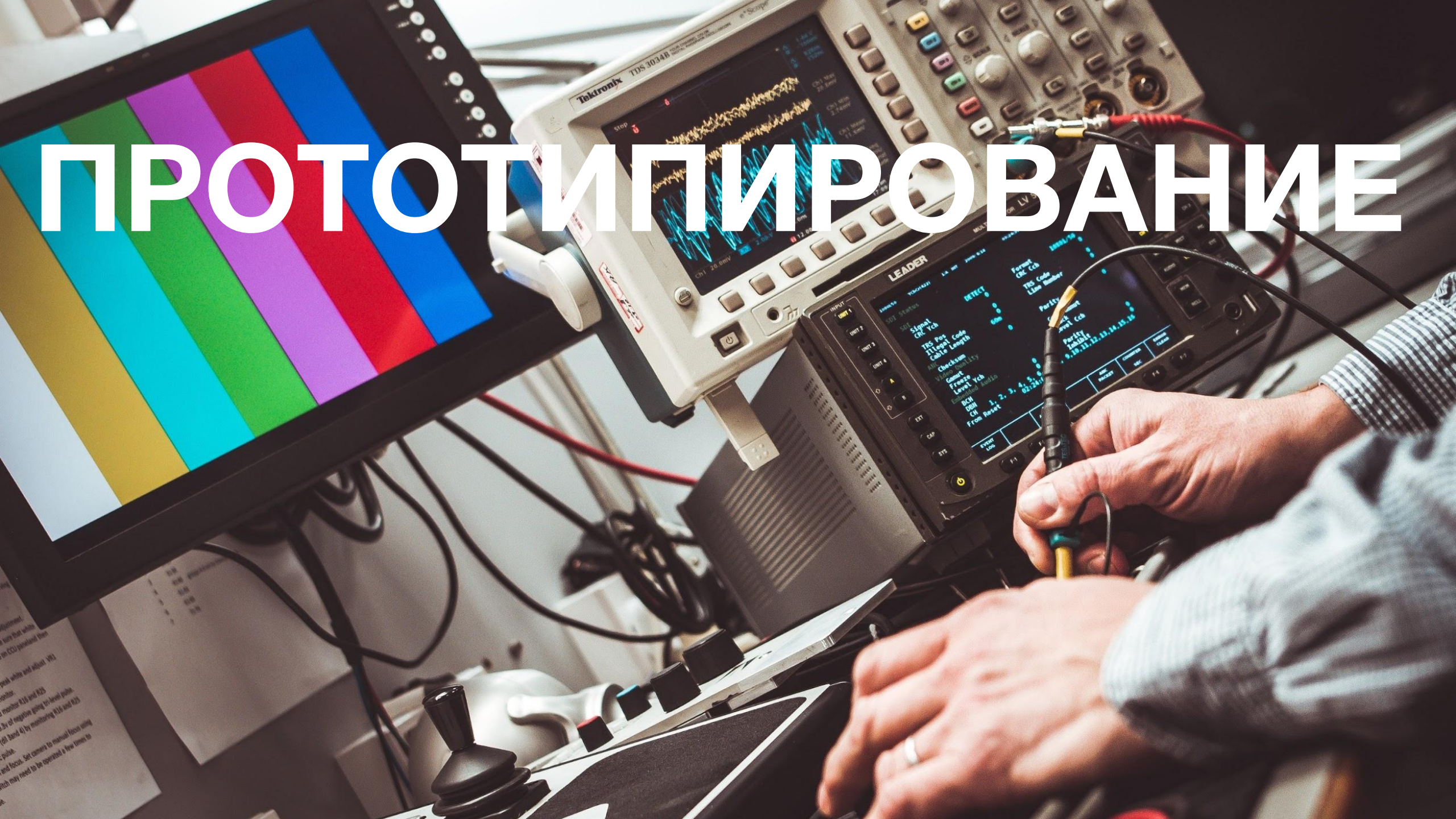
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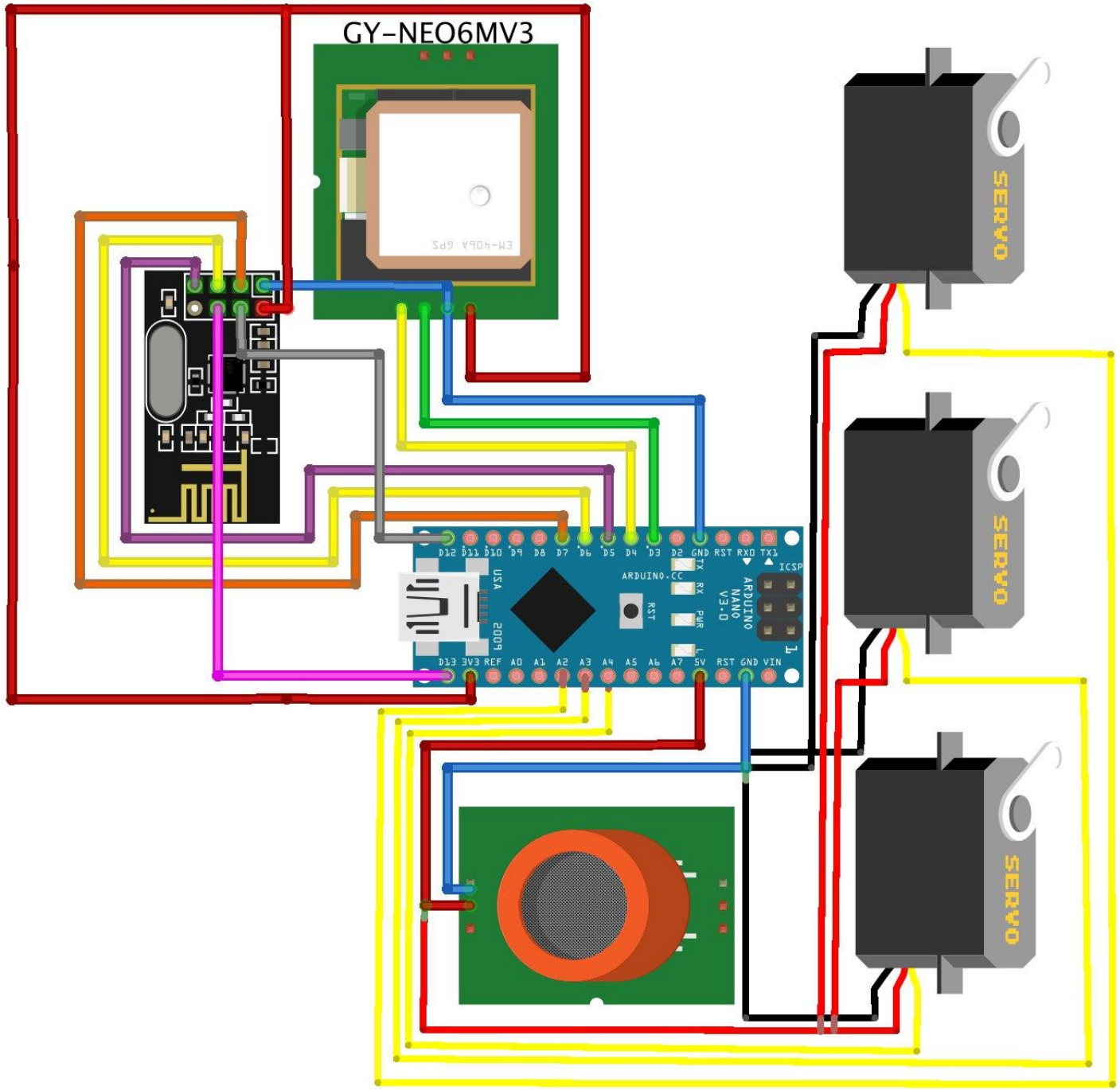
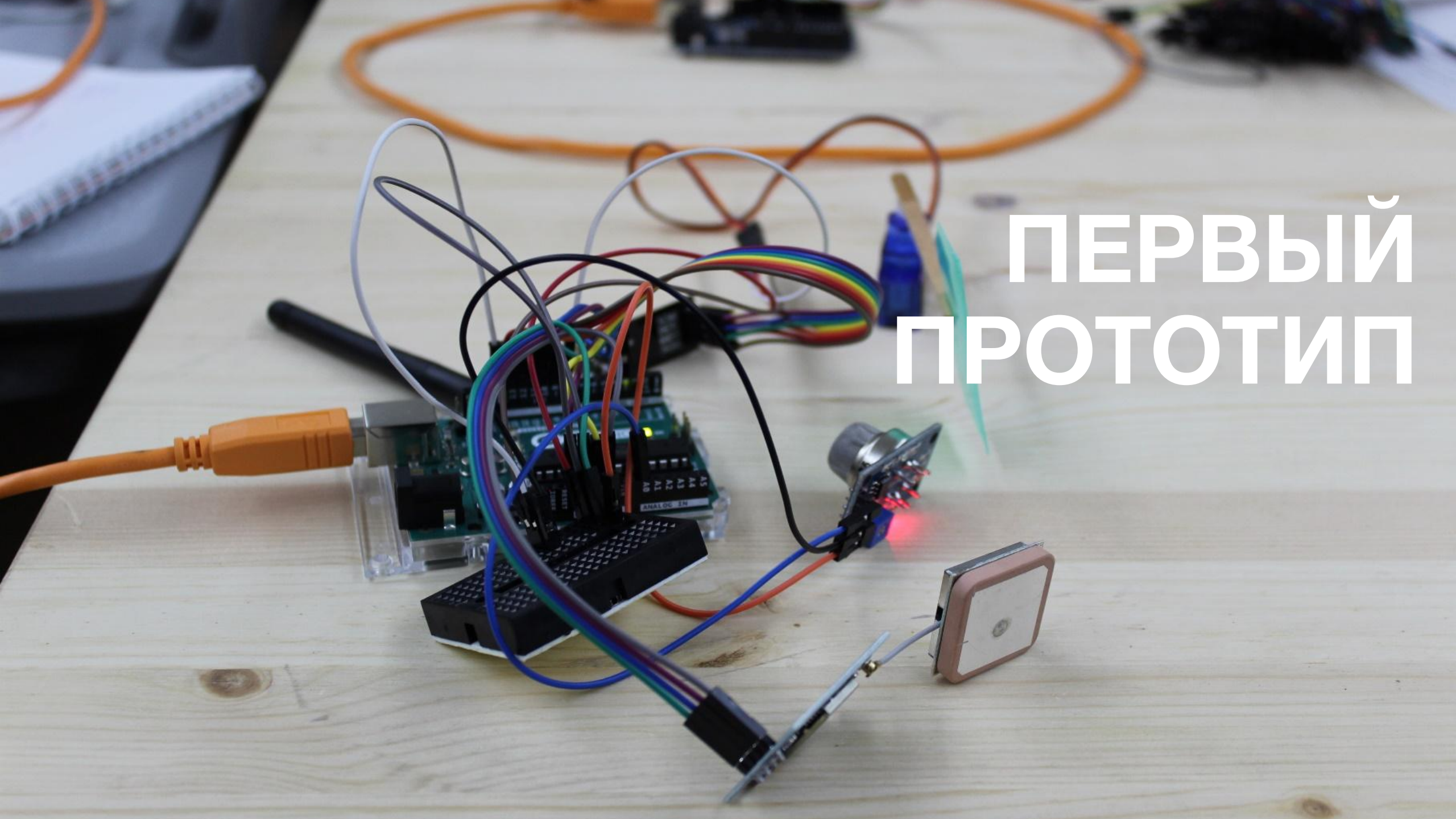
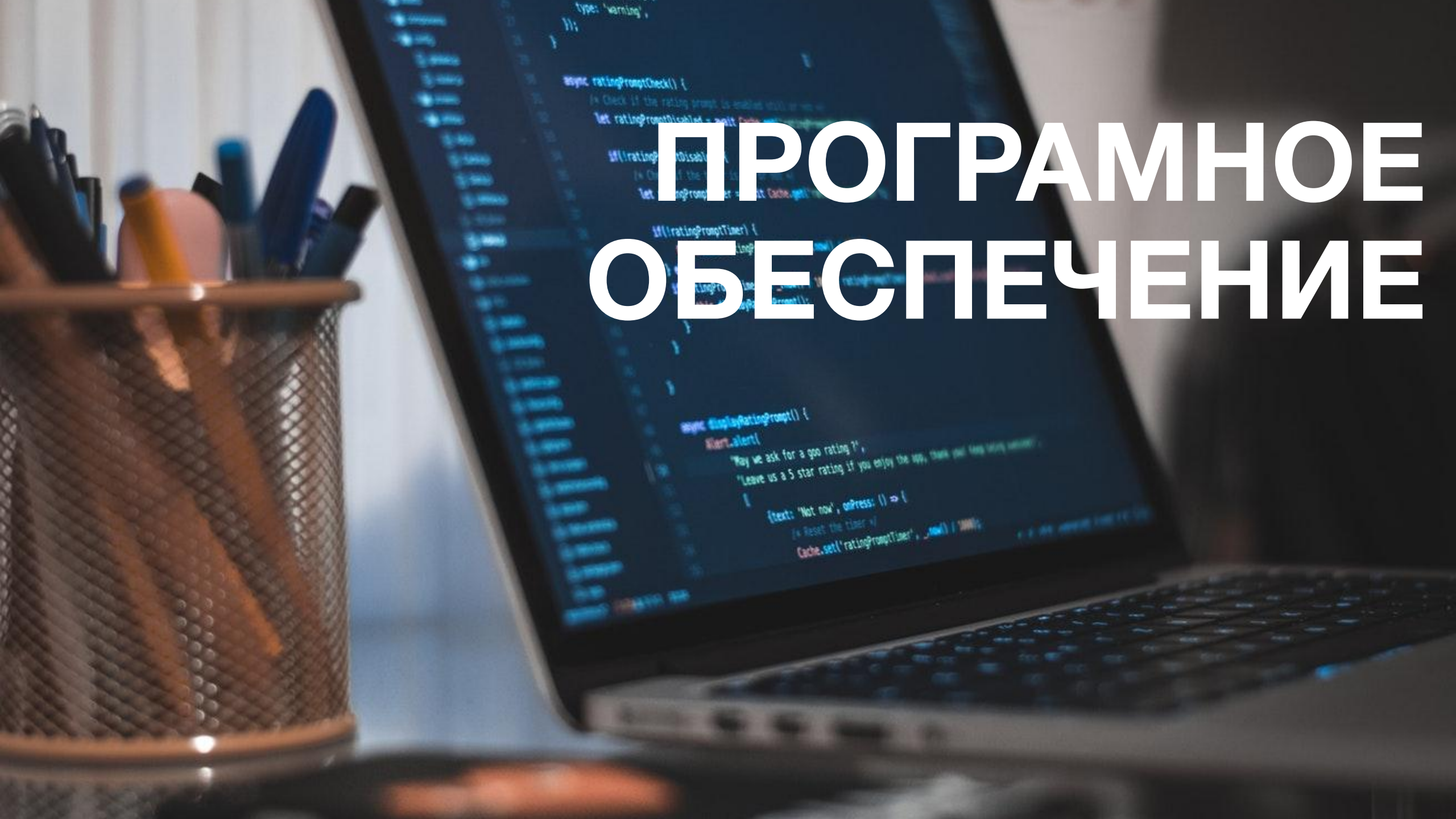

GY-NEO6MV3
SERVO
SERVO
SERVO
ARDUINO.CC
ARDUINO NANO V3.0



ПЕРВЫЙ ПРОТОТИП


ПРОГРАМНОЕ
ОБЕСПЕЧЕНИЕ

FullExample | Arduino 1.8.5

FullExample §

```
void loop()
{
  static const double LONDON_LAT = 51.508131, LONDON_LON = -0.128002;

  printInt(gps.satellites.value(), gps.satellites.isValid(), 5);
  printFloat(gps.hdop.hdop(), gps.hdop.isValid(), 6, 1);
  printFloat(gps.location.lat(), gps.location.isValid(), 11, 6);
  printFloat(gps.location.lng(), gps.location.isValid(), 12, 6);
  printInt(gps.location.age(), gps.location.isValid(), 5);
  printDateTime(gps.date, gps.time);
  printFloat(gps.altitude.meters(), gps.altitude.isValid(), 7, 2);
  printFloat(gps.course.deg(), gps.course.isValid(), 7, 2);
  printFloat(gps.speed.kmph(), gps.speed.isValid(), 6, 2);
  printStr(gps.course.isValid() ? TinyGPSPlus::cardinal(gps.course.deg())

  unsigned long distanceKmToLondon =
    (unsigned long)TinyGPSPlus::distanceBetween(
      gps.location.lat(),
      gps.location.lng(),
      LONDON_LAT,
      LONDON_LON) / 1000;
  printInt(distanceKmToLondon, gps.location.isValid(), 9);

  double courseToLondon =
    TinyGPSPlus::courseTo(
      gps.location.lat(),
      gps.location.lng(),
      LONDON_LAT,
      LONDON_LON);

  printFloat(courseToLondon, gps.location.isValid(), 7, 2);
```

Arduino IDE

ОТЛАДКА ВСЕХ СИСТЕМ

gps (1).txt

Helvetica Regular 12

```
   5  227 55.799724 37.704944 739 04/20/2018 11:32:20 759 133.20 0.00  0.61 N   2506   275.00 W   441  2      0
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5  408 55.799724 37.704944 754 04/20/2018 11:32:22 773 133.10 0.00  0.41 N   2506   275.00 W   1323 6      0
5  227 55.799720 37.704952 761 04/20/2018 11:32:23 779 133.70 0.00  0.39 N   2506   275.00 W   1764 8      0
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5  227 55.799705 37.704952 777 04/20/2018 11:32:25 795 134.60 0.00  2.96 N   2506   275.00 W   2670 12     0
5  227 55.799686 37.704959 773 04/20/2018 11:32:26 793 135.30 238.88 2.98 WSW  2506   275.00 W   3136 14     0
5  227 55.799674 37.704963 781 04/20/2018 11:32:27 798 135.50 175.02 4.70 S    2506   275.00 W   3602 16     0
5  227 55.799652 37.704990 790 04/20/2018 11:32:28 810 139.00 162.25 5.35 SSE  2506   275.00 W   4068 18     0
5  227 55.799625 37.705024 796 04/20/2018 11:32:29 813 144.70 165.01 5.09 SSE  2506   275.00 W   4534 20     0
5  227 55.799610 37.705020 807 04/20/2018 11:32:30 824 144.20 168.02 4.63 SSE  2506   275.00 W   5000 22     0
6  218 55.799598 37.705017 808 04/20/2018 11:32:31 825 143.10 172.94 5.52 S    2506   275.00 W   5473 24     0
6  218 55.799583 37.705017 818 04/20/2018 11:32:32 837 143.10 187.02 5.44 S    2506   275.00 W   5946 26     0
6  218 55.799575 37.705005 824 04/20/2018 11:32:33 843 142.60 198.81 5.80 SSW  2506   275.00 W   6419 28     0
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6  217 55.799499 37.704410 466 04/20/2018 11:33:00 484 133.10 230.56 5.35 SW   2506   275.00 W   18129 82    0
6  217 55.799495 37.704383 468 04/20/2018 11:33:01 486 133.40 232.14 4.83 SW   2506   275.00 W   18563 84    0
6  217 55.799491 37.704360 479 04/20/2018 11:33:02 498 133.80 236.20 5.76 SW   2506   275.00 W   18997 86    0
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6  217 55.799510 37.704265 525 04/20/2018 11:33:06 543 134.50 235.83 1.81 SW   2506   275.00 W   20697 94    0
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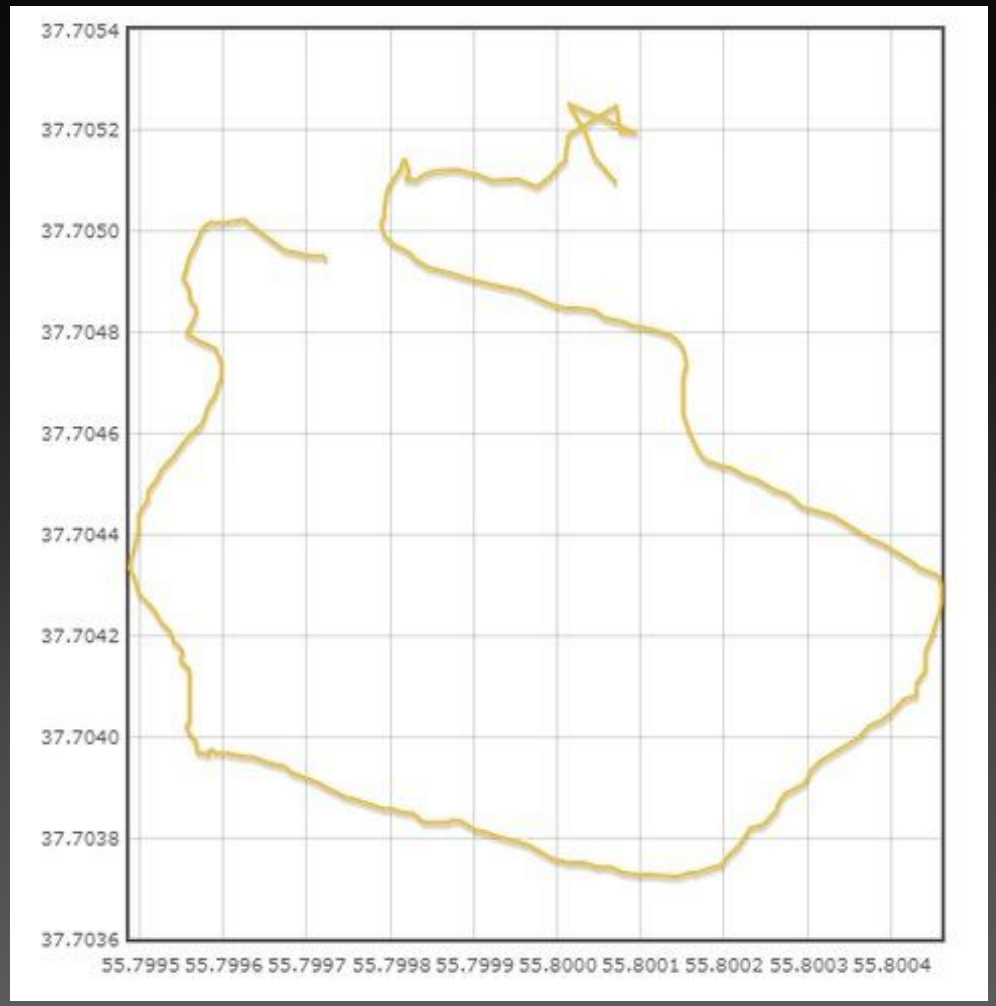

СФЕРА ПРИМЕНЕНИЯ


ЭКОНОМИКА

ВСЕМ СПАСИБО