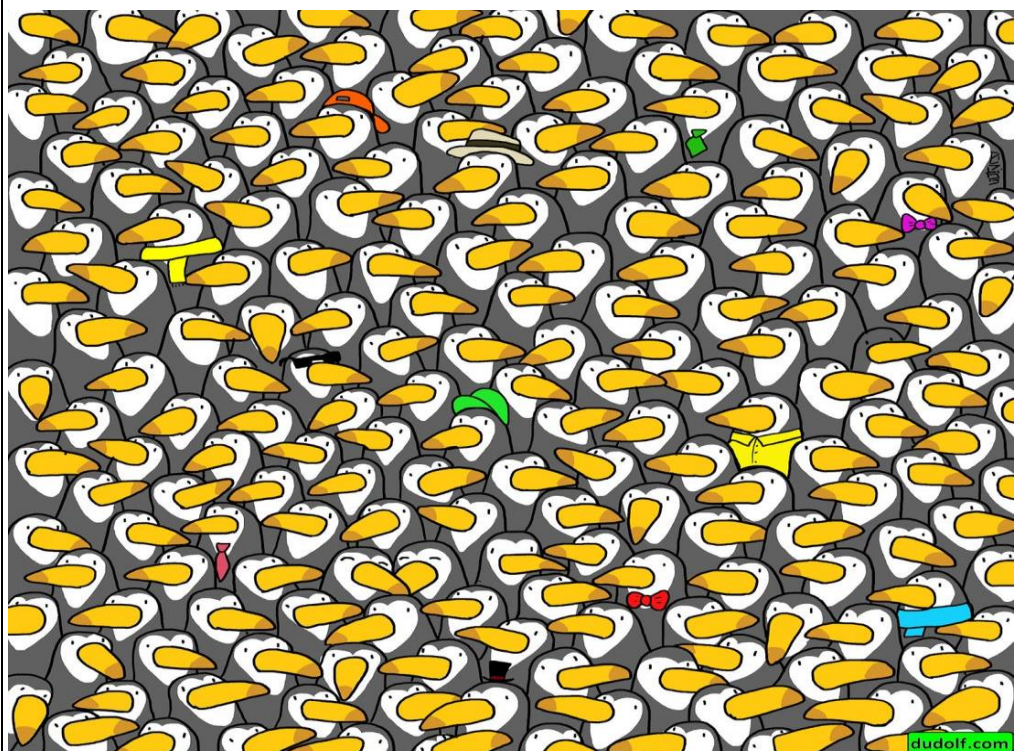


It's starting to get warmer. I have bought a fan that I can hang around my neck while I am teaching. It has two fans and you can angle<sup>1</sup> them up so that they point at your face. I asked Ms. Taniki if she wanted to use it, but she said her hair would get caught in<sup>2</sup> the fan blades. I don't seem to have that problem. Yet another advantage to chalk up to having no hair! There are too many advantages to count now: instantly dry hair, not having to pay for a comb, not needing a camera flash because my head shines, and on and on. Maybe you should all think about copying my hairstyle!

### Something You Don't Know (IoT)

1. IoT<sup>3</sup> stands for the Internet of Things and it means all of the devices we have that are connected to each other and communicating.
2. ATMs were the first IoT devices. They went online in 1974.
3. There are approximately 31 billion connected devices around the world. This will probably be about 125 billion by 2030.
4. The average family will have 50 internet connected devices by 2022.. How many do you have?
5. Most IoT devices won't be in your house. They will be in shops, factories, hospital and schools.
6. The number of Internet connected devices is going up rapidly<sup>4</sup>, but security is not keeping pace<sup>5</sup>. It is our responsibility<sup>6</sup> too. 60% of people have never updated their routers firmware<sup>7</sup>. Have you?

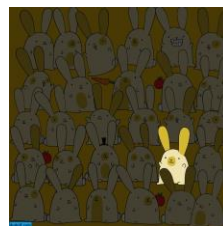
Somewhere amongst these pelicans is a penguin. Can you find it?



systems can learn how to do it. Once that happens, they humans won't be needed any more.

In the future, many jobs will disappear like this. However, many other types of jobs will be created. Also, in about 2070, the world population is expected to peak and then decline, with more people being over 80 than under 10. By 2100, Japan's population will shrink to 51 million. If we don't have automated systems like these set up when that happens, there will not be enough people left to work. I will be 123 by then. I wonder if I will still be at Hokusei.

Last week's answer



### Automation in Shops

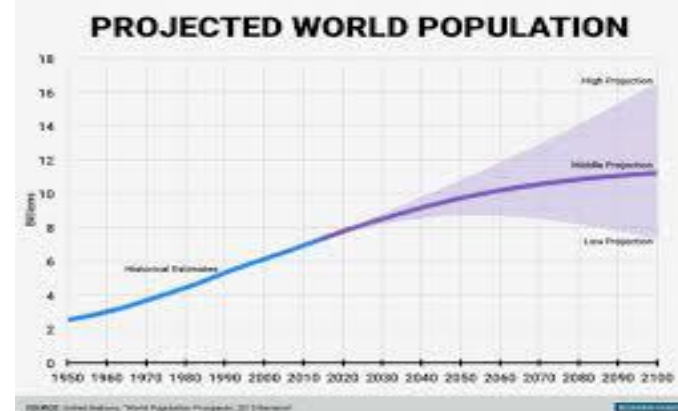
There were two inventions unveiled<sup>8</sup> last week that will help in the move towards automatic shopping. The first is by Amazon and aims to do away with the lines and waiting to pay. The second is by Telexistence and hopes to make shelf stacking<sup>9</sup> automated.

Amazon have revealed their shopping cart, called the "Amazon Dash Cart". When you take it at the store, you log on with your Amazon account details. The cart can tell exactly what you put into or take out of your cart. When you have finished shopping, you simply wheel the cart out of



the shop and go to your car. The Amazon app charges<sup>10</sup> your Amazon account directly. Amazon says that this will reduce lines in shops and make shopping less stressful. This is true, but it is no coincidence<sup>11</sup> that this will also make people buy more things from Amazon.

The second invention is a robot that will move around the store and restock<sup>12</sup> empty shelves. In the beginning, the robots will have to be controlled by a human operator, but this is only until their AI

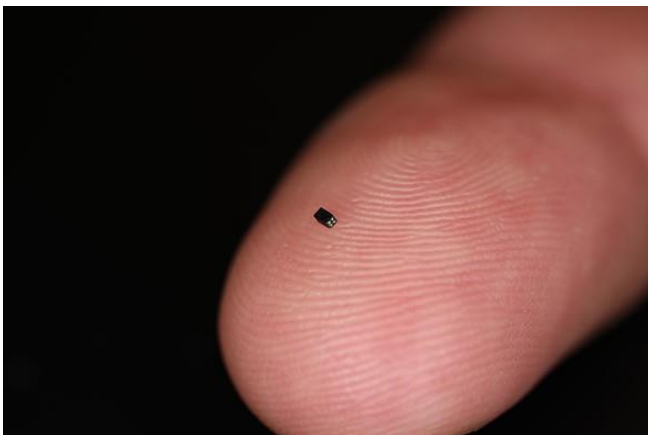


- 1.Angle ~を曲げる. Caught in 絡まる 3.IoT あるゆる物のインターネット化 4.Rapidly 早く 5.Keep pace ついていく 6.Responsibility 責任 7.Firmware ファームウェア 8.Unveil 発表する 9.Stack shelves 棚に食品を積む 10.Charge 請求する 11.Coincidence 偶然 12.Restock 補充する



### World Records

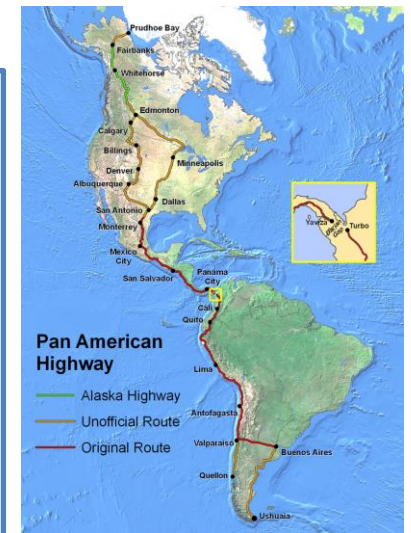
I have been writing about a lot of records that I think we can break recently, but here is one that I'm pretty sure we can't break. An Indian company, Transparency Market Research, has made the world's smallest image sensor<sup>1</sup>. The sensor is 0.575mm x 0.575mm and can capture images of 200 pixels by 200 pixels. It can take video at 30 frames per second. That doesn't sound like much, but it is better than most cellphones of the 1990s. The chip has been made for medical purposes<sup>2</sup>, so it has been designed not to give off much heat. You could swallow<sup>3</sup> it, and it would be able to film all through you. This is the smallest "commercially available"<sup>4</sup> sensor. I wonder if the US military have smaller ones that their spies use.



Never blame anyone in your life. The good people give you happiness. The bad people give you experience. The worst people give you a lesson. The best people give you memories.

## The ~est in the world

Have you ever walked along Odori? It's quite long, isn't it. But, the longest road in the world is a little longer. It is the Pan-American Highway and it goes from Alaska down to the bottom of Argentina. The whole road is about 30,000km, although there is a section in the middle that you would need an all-terrain<sup>5</sup> vehicle to cross. Many people put travelling the length of this road on their bucket list<sup>6</sup>. I would certainly like to buy an RV<sup>7</sup> and try it. I wonder how long it would take. In total, it passes through 9 different countries. In contrast, the shortest road in the world is in the Scotland. It is called Ebenezer Place and it is 2.06m long. It is basically the end of a hotel with a door in it. In 1883, the hotel was built, and the local city council<sup>8</sup> ordered the owner to put a street name on the side of the building. The hotel became 1 Ebenezer Place. There are no other buildings. Maybe, after I take my RV all along the Pan-American Highway, I can come to Scotland and park it outside of the hotel.



## Something You Probably Didn't Know



The quietest room in the world is in Microsoft's Headquarters in Redmond, Washington. The room is designed to absorb<sup>9</sup> all sound and measures -20DB. It is so quiet that people feel very uneasy<sup>10</sup> when they enter the room. After a while in the room, you can hear your own heartbeat. Your ears start to buzz with the blood running past them and you can hear your bones creak<sup>11</sup> when you move. After a little more time, people start to lose their balance because we use sound waves to help our spatial awareness<sup>12</sup>. The room is so good at absorbing sound that there is no echo. The sound would be extremely short and would disappear, very unlike the real world.

**New words:** 1.Sensor 感知装置 2.Medical purposes 医療用 3.Swallow 飲み込む  
4.Commercially available 商業化が可能 5.All-terrain 全地形対応 6.Bucket list 死ぬ前にやりたいこと  
7.RV (Recreational Vehicle)RV 車 8.City council 市議会 9.Absorb 吸収する 10.Uneasy 不安感  
11.Creak キーキー 12.Spatial awareness 空間認識