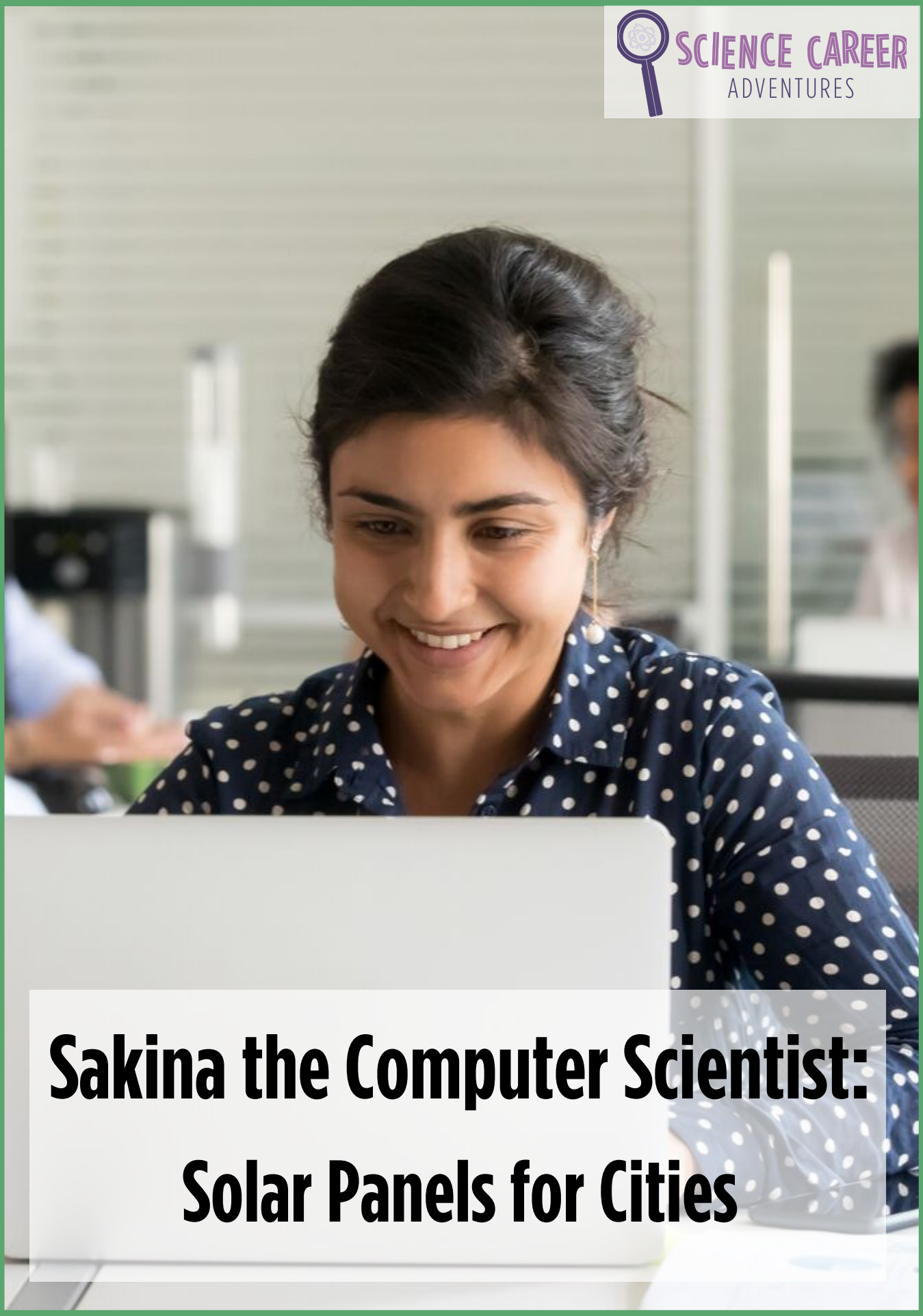


SCIENCE CAREER ADVENTURES

Sakina the Computer Scientist: Solar Panels for Cities

Who is Sakina?

Hi! My name is Sakina, and I am a computer scientist. A computer scientist builds programs, like apps for phones or websites.

Citizen Scientists

Right now, I am developing an app for a citizen science project. A citizen science project allows people to help scientists collect data.

What is a citizen scientist?

A citizen scientist is not a professional scientist.
Instead, a citizen scientist is a regular person who wants to help scientists collect data or conduct experiments.

Why do scientists need help collecting data?

Science is happening around us all the time. However, scientists can't be everywhere at every second to observe what is happening. That's why they need the help of citizen scientists!

What I'm Working on Right Now

My app will be called "The Sun Around the World." The app will let people submit information about how long the sun shines in different places around the world.

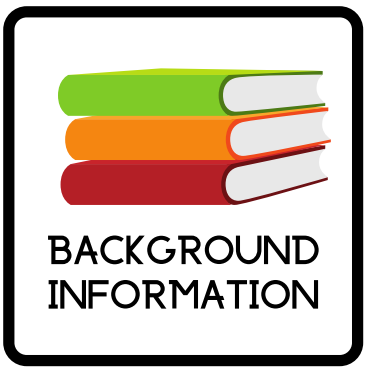
For example, people in Guatemala, Thailand, and Italy can all submit information through the app about how many hours the sun was out during the day.

Making a Wireframe

Today, I am creating a wireframe for my new app. A wireframe is a series of images that include words and pictures. A wireframe shows what different parts of the app will look like.

Here is what I have so far for my wireframe:

This is the opening screen. The opening screen is the first image that people will see when they log onto the app. Once the app loads, a home screen with different buttons will show up. My button designs are also part of my wireframe.



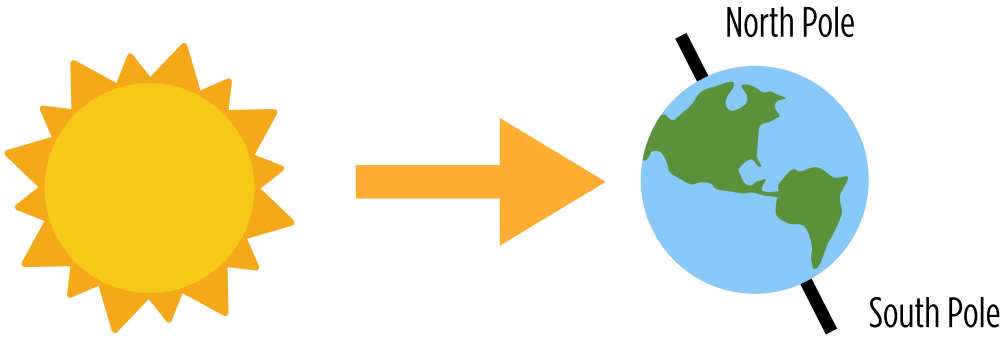
One button will be for background information on how many hours the sun shines for around the world. People can click here to get more information on why the sun is out for different amounts of time in different places.

Another button will be for a submission form that citizen scientists can fill out. Citizen scientists can upload information on when the sun came out and when the sun set.

Background Information

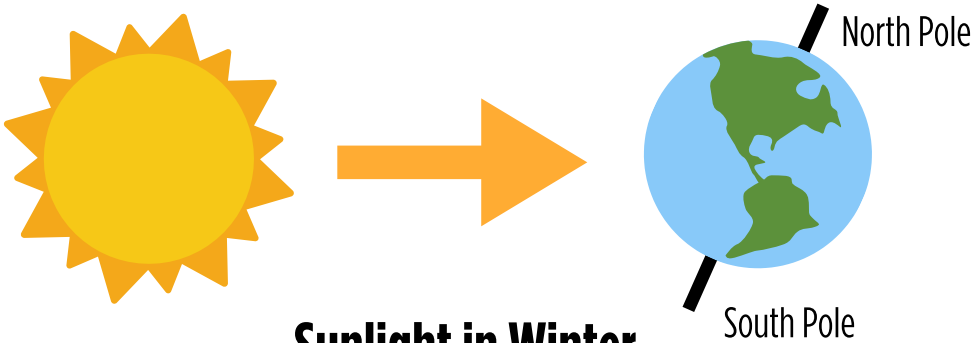
On this page, people can read background information about why the sun shines for different amounts of time in different places.

The sun shines for different amounts of time in different places depending on what season it is. For example, the part of the Earth closer to the North Pole gets more hours of sun shine each day in the summer compared to the winter. In the United States, during the summer Alaska gets more hours of sunshine during the summer than Hawaii because Alaska is closer to the North Pole. In the winter, it's the opposite and Hawaii gets more hours of sun shine.



Sunlight in Summer

The sun shines longer in the summer and less in the winter in places closer to the North Pole because of the tilt of the Earth compared to the sun. Look at the picture above of the Earth during the summer. The North Pole is tilted toward the sun, so places closer to the North Pole have longer days. As you get further away from the North Pole, the days get shorter. Now look at the picture below of the Earth during the winter. The North Pole is tilted away from the sun. Now, places closer to the North Pole have shorter days.



Sunlight in Winter

Submission Form

Here is a wireframe of what the submission form will look like!

CITIZEN SCIENCE SUBMISSION FORM:

NAME:

LOCATION:

SUNRISE TIME:

SUNSET TIME:

EMAIL ADDRESS:

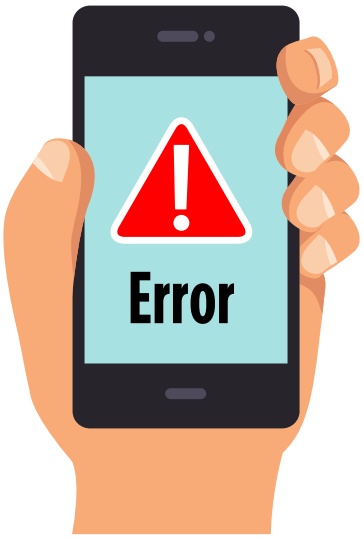
OTHER NOTES:

Send

Next Steps

The next step is to start building my app. To build my app, I use a computer language. A computer language refers to groups of words, symbols, and numbers that tell a computer what to do.

Once the app is built, it is ready to be tested. This means I will click on every button in the app and see if there are any bugs. A bug is a mistake in the app. This means something in the app doesn't work correctly.



Here is an example of a bug:

- I clicked on the submission form and it sent me to the background information page! This is a mistake that needs to be fixed!

- Once I remove all of the bugs from the app, it is time to release it to the app store! People can download the app and start uploading data.