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Japan 2018 Field Trip Summaries

Osaka Castle

We visited Osaka Castle – or Osaka-jo – on May 15th. CJ and I arrived much earlier than the rest of the group, so we had time to walk around the castle grounds before we went into the actual castle with the group. The castle is surrounded by a wall, as well as a pit that was most likely filled with water when the castle was in use. The current castle is not the original building, as it has been reconstructed a few times since it was originally built by Hideyoshi Toyotomi in 1583.

Shitenno-ji

On May 16th, we visited Shitenno-ji, which is one of the oldest Buddhist temples in Japan. Parts of the temple have been reconstructed several times, but the design of the temple has remained the same since it was first built several hundred years ago.

Kyoto

As part of a business class/workshop, we visited Kyoto on May 17th with some Japanese students. We were split up into several groups, and each group visited different places in Kyoto. My group went to Nishiki Market, which is a large culinary market that has dozens of different shops that sell seemingly hundreds of different types of food. Once we left the market, we planned to go to the imperial palace, but it was closed. Instead, we went to the kaleidoscope

museum. The museum had several types of kaleidoscopes on display, and every hour or so there was a kaleidoscope light show projected on the walls in the main room.

Sumiyoshi Taisha

On May 22nd, we went to Sumiyoshi Taisha, which is one of the oldest Shinto shrines in Japan. One of the most notable parts of the shrine is Sorihashi Bridge, which is a steep bridge that spans across a pond near the entrance to the shrine.

Tomb of Emperor Nintoku

On May 23rd, we visited Daisen Kofun – the Tomb of Emperor Nintoku. The tomb is located on a small keyhole shaped island surrounded by a small body of water. Entrance to the tomb itself is prohibited, but visitors are allowed to walk around the perimeter of the tomb. There are signs with information about the tomb posted along the walkway, but they are all written in Japanese, so I wasn't able to read them.

Riken K-Computer

We visited Riken K-computer in Kobe on May 28th. The supercomputer has a total of 82,944 CPU's, which means there are 663,552 cores total. This large amount of processing power means the computer can perform approximately 10^{16} calculations per second. The K-computer uses a unique network system called Tofu, which means that each CPU node is connected to 6 other CPU nodes at once. This allows the computer to stay operational even when 1 or more CPU's fail. When the K-computer was constructed in 2012, it was the fastest supercomputer in the world. It is now the 10th fastest supercomputer in the world, but it ranks 1st in measurements of overall performance.

The facility that houses the K-computer is built on an artificial island in Kobe, which means it is at increased risk during an earthquake. To prevent complete destruction of the K-computer in the event of an earthquake, there are several state-of-the-art safeguards in place to keep the facility from collapsing or flooding.

The K-computer is free for anyone to use, but anyone who wants to use it is required to submit an application detailing what they intend to use it for, and the results of any simulations that the applicants run on the K-computer must be made public. Many Japanese automobile companies use the K-computer to run aerodynamic simulations because the K-computer produces results that are much more accurate and precise than tests run in a wind tunnel.

I have no idea what type of cyber security is in place for the K-computer, but I wish I had asked about it when we were there since my major is Cyber Intelligence and Security.

Dinner in Tokyo (optional reading)

On May 30th, CJ and I activated our rail passes and decided we wanted to go to Tokyo for dinner. We went to Tokyo again the following weekend to tour it properly, but on the 30th we just wanted to go get dinner and come back to Osaka because we had plenty of time and it wouldn't cost us anything to ride the Shinkansen to Tokyo and back. We left Osaka at about 2:30 in the afternoon. Once we got to Tokyo, we found a restaurant near Shibuya station and ate dinner, then walked around the area for a while before heading back to the station at around 8 PM to catch the Shinkansen to Osaka. When we got to the station, we realized that the Shinkansen we planned to catch was a Nazomi train, which we can't ride using our rail passes, and the last Shinkansen to Osaka that we could ride had left the station 5-10 minutes before we got there. We took a Shinkansen to Nagoya and planned to pay for a Nazomi

Shinkansen from Nagoya to Osaka. While on the train to Nagoya, we realized that we misread the timetable and the last Shinkansen from Nagoya to Osaka would depart before we would arrive in Nagoya. Unfortunately, this meant we had to take the long way home. We took a train from Nagoya to Gifu, then at around 1 AM we got on a JR Expressway bus bound for Kyoto. We rode the bus all night and arrived in Kyoto at around 5 AM. Once we arrived, we took a train from Kyoto to Shin-Osaka station and got back to the hotel at around 6 AM. I promptly fell asleep, then woke up a few minutes after 8:30 AM and rushed down to the lobby to join the rest of the group and head to Nara for the day. While this was not a pleasant experience, it's not something that one could do in America, and I'm glad I experienced it. The public transit system in Japan isn't perfect, but there is always a way to get to where you need to go, even if it's in the middle of the night.

Nara

On June 1st, we visited Nara Park in Nara. Within Nara Park, we visited Todaiji Temple, which a large Buddhist temple that houses a giant Buddha statue. Nara Park (and by extension, the city of Nara) is known for the hundreds of docile deer that live in the park. The deer are so popular that merchandise themed around the deer can be found almost everywhere in Nara. In the Shinto religion, the deer in Nara are seen as messengers of the gods. The deer have become used to the hundreds of tourists that visit the park daily, so they will often bow at tourists if they want the tourists to feed them.

Origami Museum

On June 7th, we visited the origami museum in Kagaonsen. Before we looked around the museum, we learned how to make a hako-zuru, or box crane. Afterwards, we wandered around

the museum for 30-45 minutes. There were many types of origami on display, ranging from simple things like penguins to very complex dioramas of famous cities from around the world.

Kanazawa

On June 8th, we visited Super-Kamiokande, KAGRA, and KamLAND in Kamioka-cho. I am not a physicist or an engineer, so a lot of the significance of these places went over my head. From what I understood, Super-Kamiokande is a facility used for detecting neutrinos, which are particles used in physics to study astronomical events. Super-Kamiokande is the largest neutrino-detecting facility in the world.

Spring 8

On June 11th, we visited Spring 8, which is a scientific research facility run by Riken. The technical details of what the facility does were lost on me because I'm not a physicist or an engineer, but from what I understood, the facility is designed to shoot electrons around a large ring at incredibly high speeds, which causes the electrons to emit x-rays. This allows various kinds of research involving x-rays to be performed on a large scale.

Works Cited

<https://www.japan-guide.com/>

<https://osaka-info.jp/en/page/tomb-emperor-nintoku-daisen-kofun>