**SOFTWARE**

**CONVERGENCE**

**STRATEGY**

**TEAM**

**PROJECT**

**2017012733 김승환**

**2017012906 박지용**

**2017012915 박현창**

**2017013245 진나영**

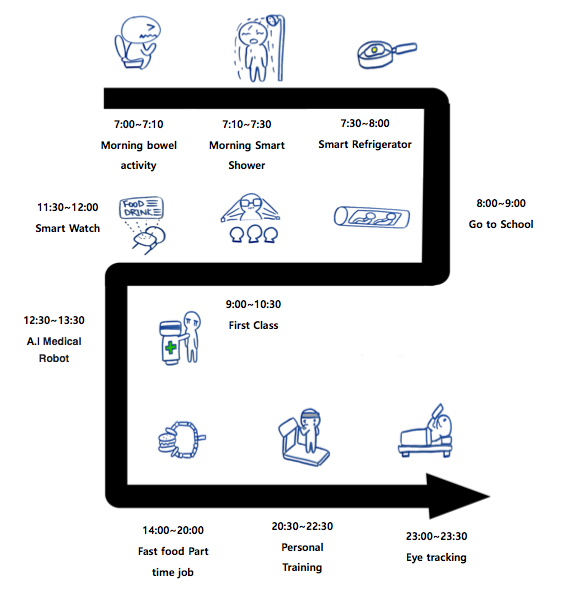
CHARACTER

**PROFILE**



* PARK HYUN-CHANG
* 24
* UNIVERSITY STUDENT
* PART-TIME JOB
* LIVE ALONE

A DAY OF HYUN-CHANG



7 : 00 ~ 7 : 10 am

In morning, HyeonChang wakes up in 7 : 00 AM. HyeonChang directly goes to bathroom to take a shower. Before that, HyeonChang went to stool. According to HyeonChang’s health measurement result, monitor in bathroom informs the result to the HyeonChang that some are good and some are bad. And if situation isn’t good, program can make reservation to the hospital. And monitor provide internet service to HyeonChang while sitting on a toilet.



**Ubiquitous computing, network technology**

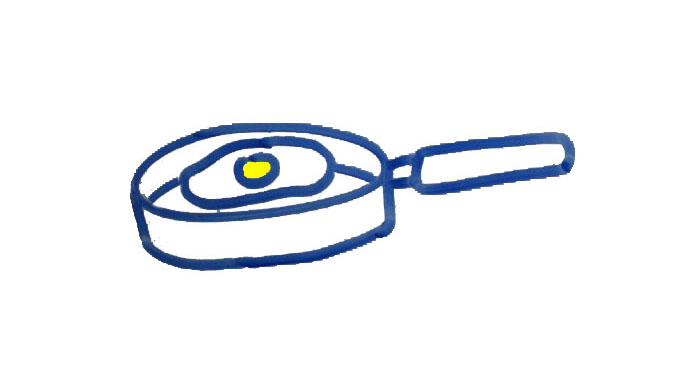
![](data:application/octet-stream;base64,)

Ubiquitous technology can utilize various information and communication technology regardless of time and place. Ubiquitous computing means making everywhere computable. And ubiquitous network means IT environment that everything are connected in one network. Various electronic devices or object are tied to computer and information and communication technology. And users can use communicate anywhere. In ubiquitous computing, users must be connected to the network easily in everywhere. And computers needs to be reduced to nano size. In ubiquitous network, regardless of time, place, wire, broadband network should be prepared. And a lot of objects should be connected in the network.

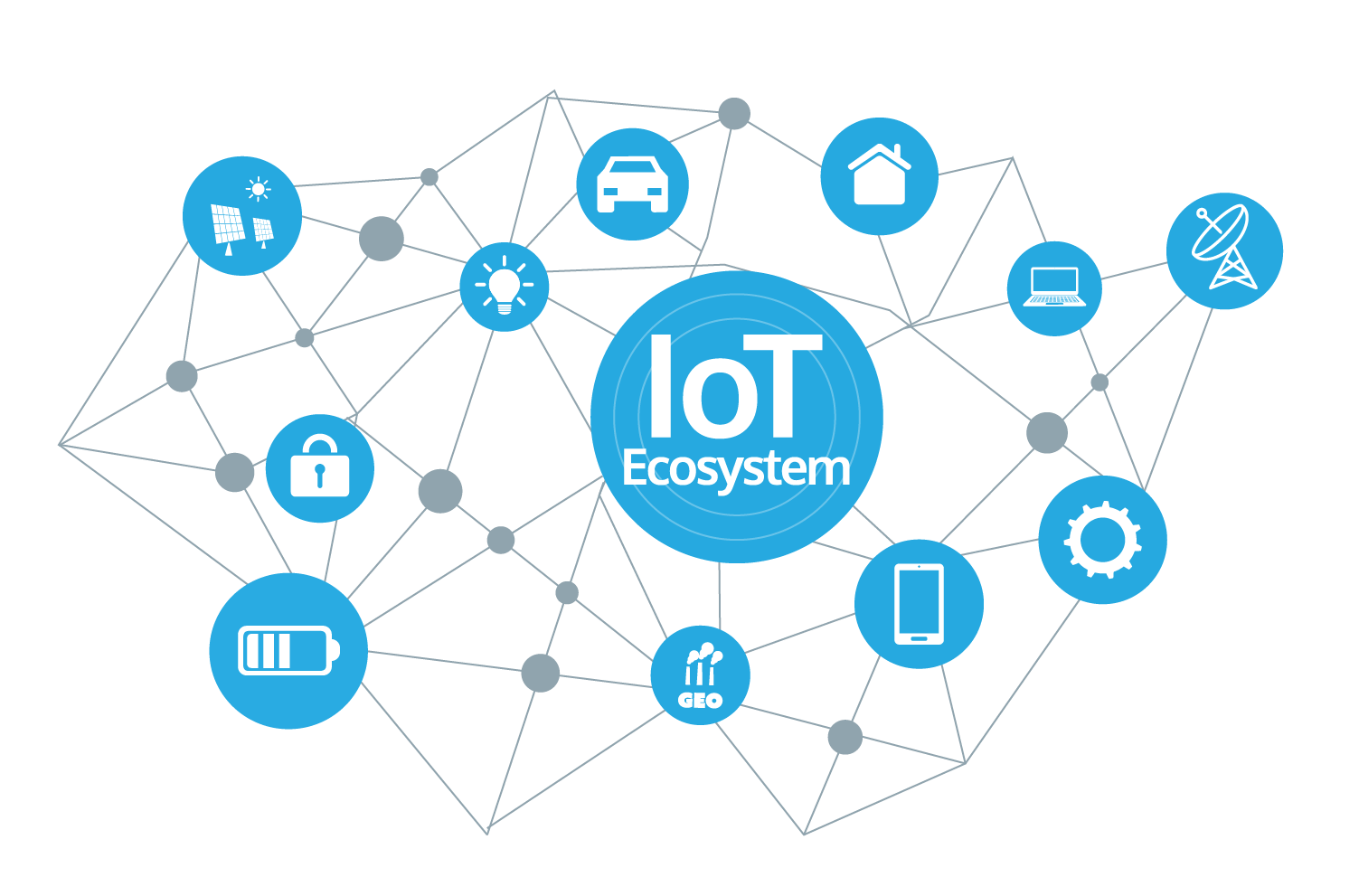
ex) U Health care – by using sensor, user’s health state and several data are collected in network and computer send it to hospital to care user.

7 : 10 ~ 8 : 00 am

When HyeonChang begins to taking shower, computer determine the temperature of water by measuring the temperature of the toilet and floor. Temperature of water is set before the shower. As soon as the HyeonChang turns on the water, water at the right temperature for user comes out. After HyeonChang comes ous of the bathroom, smart refrigerator show the menu that can be made right now with the ingredients in the refrigerator. Refrigerator and cooker are connected to the network and refrigerator tell what to do for delicious cook. Refrigerator control the strength of fire, expiration date, scarce ingredients, what ingredients should we buy, what kind of dish can we make with the ingredients we have.



**IoT**

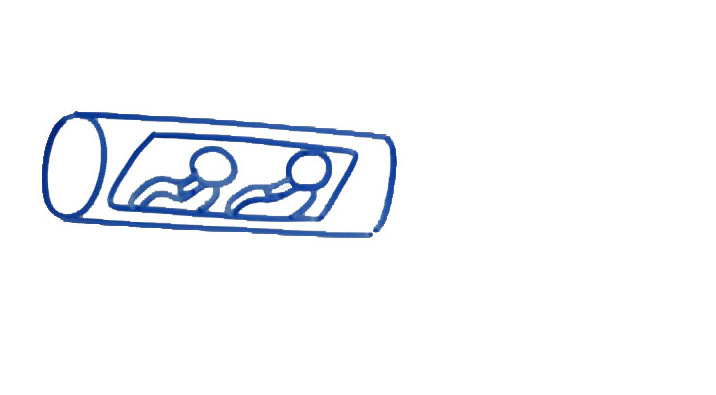


Service that make human and object or object and object interact with by connecting every object and human. This service can work without human Intervention. IoT technology needs 3 intimate technology, sensor tech, communication, network infra tech, interface tech. sensor tech means how to get data from circumstances around object. And network infra tech means the way to connect all these object. Lastly, interface tech is how objects, humans or particular service perform their own function that includes storing, processing and transformation of information.

ex) senior town monitoring service – this service can improve comfort of town , cost reduction and prevent danger by monitoring patient’s moving and electric usage.

8 : 00 ~ 8 : 30 am

Hyeonchang, who lives in Busan, attends a university in Seoul. HyeonChang goes to Seoul from Busan every day. How is that possible? If there is a hyper loop, it is possible. It takes only 15 minutes from Busan to Seoul if you take the hyper loop. It is so fast that HyeonChang feels like going to space every time HyeonChang goes to school. Thanks to the hyper loop, there is absolutely nothing to be learned in class.



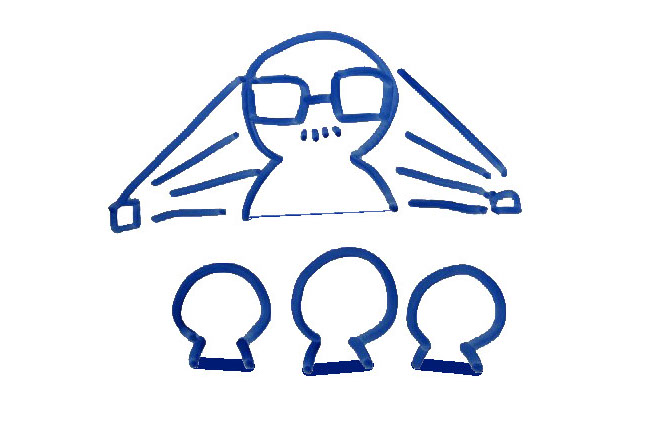
**Hyperloop**

![](data:application/octet-stream;base64,)

The hyperloop is a capsule-type high-speed train system proposed by the US electric car company Tesla Motors and private space company Space X founder Elon Musk in 2013. The secret of the hyper loop is in vacuum and magnetic field. Using a magnetic field, it gained momentum and injected air into the floor, reducing air resistance and frictional forces. The power needed for this is achieved with a solar panel wrapped around the outer wall of the tube. It is self-development that can sustain and make energy by the sunlight. The maximum speed is 1,280 km / h, And it can run between Seoul and Busan within 15 minutes.

9 : 00 ~ 10 : 30 am

Thanks for hyper loop, HyeonChang couldn't late for class. oh! The professor went on a business trip abroad. "Maybe I do not have class today." But soon I realized that this year is 2040. Twenty years ago, when the professor traveled abroad, HyeonChang canceled and then take additional class However, as of 2040, it is now possible to communicate in real time with people who are away from it with the holopotation technology.



**Holoportation**

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Holoportation is a technology that enables real-time bidirectional communication of 3D images using Microsoft's holo-lens, which can make virtual information into a 3D hologram in the real world. In this way, the person in the remote place can be called 3D modeling and hologram in real time. It shoots the surroundings using several cameras arranged around it, and 3D modeling of the modeling to produce precisely in real time. With the holoportation, you can communicate with people who are far away, and you can play back what you have recorded in advance. Pre-recorded images can be enlarged or reduced.

11 : 30 ~ 12 : 00 pm

A have trouble with having lunch because the lecture finished early. HyeonChang decides to use ‘Hanyam-In’ system in his SMART-WATCH. HyeonChang said ‘chi chi ya’ to turn on the voice recognition function. Then the SMART-WATCH woked up. It asked him about what HyeonChang wants. HyeonChang demanded the recommendation for his lunch. HyeonChang told time for eat, number of people, and prefer menu. After heard them, the SMART-WATCH analized that conditions(include his diet for week and health conditon) and recommended restaurant. Also, it gives screen of menu using holopraphic. Finally, A accepted SMART-WATCH’s recommendation. It asked him to guide, but HyeonChang didn’t need it. HyeonChang had good lunch thanks for SMART-WATCH



**hologram**



Unlike Fluorescent lamp or Incandescent, there is coherent light that has certain and regular property. Lights have lnterference pattern. And this pattern is determined by the distance from object’s surface. In other words, pattern has the information of object. If white light is reflected in the coherent light, same pattern –the object- is shown. That pattern is called hologram.

12 : 30 ~ 13 : 30 pm

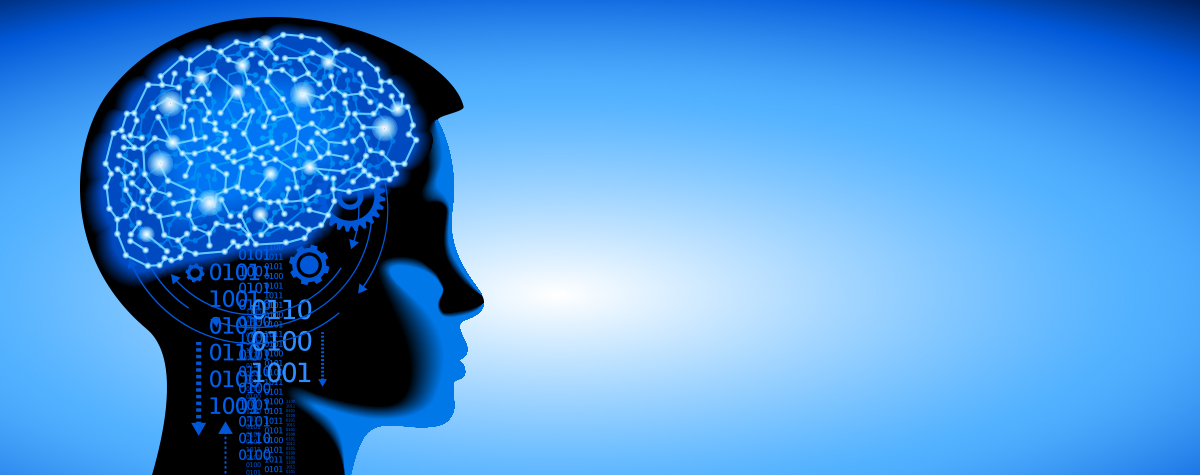
Because of bathroom computer’s reservation, HyeonChang went to hospital. HyeonChang applied his resident registration card to the machine. When the machine recognized it, his latest medical statement and the results received in the morning were reflected on the monitor. HyeonChang checked that things and paid. Then HyeonChang receive the paper which wrote room number. A entered the right room.

HyeonChang lied on the bed. The machine came to him and starting to examine. After the examine, HyeonChang wrote a simple questionnaire through monitor. Few minutes later, the machine talked to him about his status and recommended to meet doctor. A hold the examine schedule. Lastly, machine gave him a prescription and A left the room. HyeonChang went to pill-vending machine and got

some.



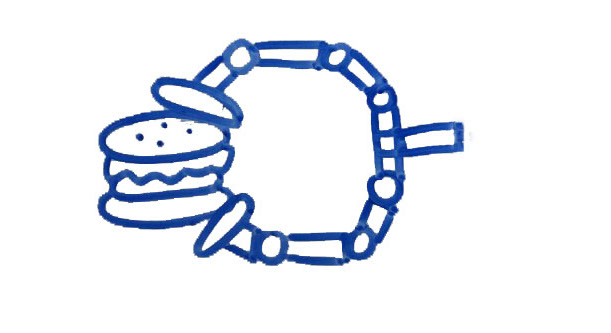
**Artificial intelligence**



Artificial intelligence robots are artificially created intelligent robots that can be difficult or impossible for humans to deal with. Artificial intelligence is expected to be able to collaborate with various fields at present.

14 : 00 ~ 20 : 00 pm

HyeonChang does Part-Time job at the fast food restaurant from 2 pm to 8 pm these days. Unlike Part-Time job in the past fast food restaurant, HyeonChang was supposed to do what HyeonChang had to do when the robot was working as a simple laborer by the 4th Industrial Revolution. Thanks to it, there is only one Part-Time job(it’s me), even though it is a fairly large store, and HyeonChang is just waiting for Flippy to turn the food off so that it does not burn (he waits until the camera of each machine reaches the proper temperature for each material through the heat recognition and cook it carefully)And whether or not Alexa has ordered enough to fit the scarce stock (she counts how many fries or hamburger patties are in store and how much inventory is needed based on the store's real-time sales) That's it. They can cook most of the food with heat-sensing technology and receive orders or fill the warehouse with voice recognition or object recognition. Maybe in the future there will come a time when robots can cope with the role of manager like me.



**Artificial intelligence robot (Kitchen assist)**



Kitchen assist robots with artificial intelligence will make a variety of food in various restaurants in the future, and those who use them only need to pay attention to maintenance and machine cleaning. (Mio Robotics’ Flippy, Amazon's Alexa)

-Flippy: Flippy is equipped with machine learning artificial intelligence, camera and sensor. Turn the hamburger bread and patty over at the proper timing and tell the human to bring up other toppings.

-Alexa: Alexa uses the data from all recipes to tell you everything about the dish. Especially, it is useful because it can retrieve and guide everything by voice only without touching hands. The user can basically be informed about what kind of cooking is possible with the materials that he currently possesses and whether the cooking method is appropriate.

20 : 30 ~ 22 : 30 pm

HyeonChang has been exercising my hobby lately. HyeonChang started to work at the gym, which is under the apartment, because HyeonChang was diagnosed that there is lack of exercise in the hospital. However, the biggest reason that HyeonChang started to exercise is because the personal training robot is assigned to each member at this gym. HyeonChang had never seen such a training robot in my previous house, but HyeonChang wondered at the novelty as soon as HyeonChang saw Robots in this gym. They receive various health data from me, including my body fat percentage, water content, and muscle mass, and help him to make sure that what they bring to me brings about a change in my body and that my exercise is recorded to reach my target health level. They also work with my smart refrigerator or smartphone to check the exercise in real life and to get me to eat food that meets my nutritional needs. Also, They have a motion capture camera to help me with various exercises that require posture correction. At first HyeonChang was used to pure curiosity about them, but as HyeonChang got used to the various functions they had, HyeonChang was able to find me getting better and healthier.



**Personal Training Robot**



Personalized training robots obtain the user's health and body data and recommend and assisting the user with the necessary exercise. In addition, they will check and upload nutrients to the user's health data to match the current user's health and work with other IOT such as refrigerators to allow the user to consume the ingredients after exercise.

-Gearfit2: GearFit2 provides accurate movement information without a smartphone, with GPS. GearFit2 measures its travel distance more precisely with its own GPS and calculates speed and calories more precisely. Equipped with a heart rate sensor, the graph shows the change in heart rate during exercise. Gear Pit 2 can recognize the event if five movements such as walking, running, riding, bicycling, elliptical, and rowing machine are continued for more than a certain period of time.

23 : 00 ~ 23 : 30 pm

At night, before user fall in sleep, HyeonChang enjoys leisure with a smartphone. HyeonChang surfs user’s or user’s friend’s SNS. HyeonChang can control the smartphone’s movement by blinking eyes. Or maybe HyeonChang can watch some webtoon by blinking his eyes. If HyeonChang’s eyes are facing down smartphone screen goes down. HyeonChang can even comment in SNS or webtoon by eye-tracking technology. 30 years ago, HyeonChang should use their own hands. It is onerous thing before. But HyeonChang can enjoy their leisure more easier by using eye-tracking technology.



**Eye tracking**

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With the development of eye tracking technology, users can now extend their leisure time to sleep. This is not only a matter of showing a scene or sounding at bedtime, but it will contribute greatly to solving the lack of spare time of modern people who are busy with watching a webtoon or a movie that they want.

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