The Abstract Factory is an object creational design pattern that set up from the Factory Method. This approach allows the encapsulation of the creations that belongs to one family and provides interfaces to return one of the related families [1]. As Saurav shown [2], the software design need the probabilities of efficiency, reusability and robustness. Here we give the explanation of basic concept and several advantages of the Abstract Factory.

The Abstract Factory means that different factories have different families of products, and clients can see these products directly from the factories instead of directly see all of the products.

Firstly, it is good for clients to read. To achieve this, we need to give different interfaces for the products, where we can define the basic properties of these products by instantiate different products. Then, we can create several factories to produce these products in different types. For the client sever, clients can select the products from the interfaces of the factories. This can increase the efficiency of the clients to choose what they want and all dependent by clients [1].

Secondly, as all the products are encapsulated by abstract classes, the new products can be added to one factory easily. Also, if some other factories are open, the initial code can be reused as well. Such an code can be reused easily because of its structure. For example, the TV have the parameters of input voltage, power and the volume, all of the probabilities can be rewritten easily for air conditioner and do not need to write these parameters again.

Thirdly, as the interfaces of products and factories are separated and only called by others, the code can be easily to read by software designers. If some variants appear, it can be introduced instead of breaking the existing codes [2]. Designers only need to change some of the classes instead all of them. At the same time, the high cohesion and low coupling way of coding also decreases the difficulty of maintaining part of the code.

All of the properties above make the codes robust and flexible.