**setPVModel**

**Start**

**Get file path of the LongTermPastData**

**long term past data**

**Done!**

**Save following information in .mat files to take over them**

* **trained model parameters for k-menas and ANN**
* **The optimal weight for each algorithm**
* **Error rate calculated at Step B above**

**Calculate error by ensemble forecasting model using validation data**

**Combine two algorithms into one using the weight**

**Define the weight for each algorithm by PSO**

**according to the validation result**

**Perform prediction using validation data**

**Train the models using long term past data**

**1. K-means and Bayesian**

**2. ANN**

**Assort the data to a model training and a validation**

**getPVModel**

**\*Note: “.mat” files are generated in setDemandModel to storing trained model parameters, error for validation data and weights for each model**

**Start**

**Load following files**

**1. shortTermPastData**

**2. ForecastData**

**3. “File name” of Result**

**Done!**

**Done!**

**Create the csv files to store the information;**

**predicted demand, CI boundaries and histograms derived from the probabilistic forecasting**

**Generate 95% confidence Interval (CI) using**

**probabilistic forecast result**

**Make probabilistic forecast by combining these two**

**1. Deterministic forecasting result on Step *C***

**2. Error records generated in setPVModel Step *A***

**Perform forecasting using shortTermPastData and ForecastData**

**1. k-means and Bayesian**

**2. ANN**

**-> combined into one prediction value using weights**

**Yes**

**Check if “.mat” files\* exist?**

**No**

**Error message**