Findings DSML group project:

Task 2

a) Seasonal pattern

* Hourly Demand:
  + As one can see looking at the hourly demand it varies greatly during the day. There are two peaks at 8 am and 5 pm where demand is the greatest. This could be explained by the use of the bikes as transportation from and to the workplace, since the usual working hours are roughly from 8 am to 5 pm. Between midnight and 5 am demand is the lowest which makes sense since there are fewer people on the streets during the night. After that, demand rises to its peak at 8 am and the dropping sharply. It remains at relativly constant level until 4 pm when it rises again and peaks at 5 pm to an all-day-high. After that peak, it begins to fall steadily. Notable is also that during the peaks the variance in demand is the highest which could be explained by the fact that the peaks probably do not occur during the weekend.
  + A reason for the strong use of the bikes for transportation to work could be traffic. As bikes make it possible to avoid jammed streets and packed subways, they could be a more comfortable way to get to work than cars and public transportation.
* Daily demand:
  + The results of the demand per weekday support the thesis from the hourly demand which is that the bikes are often used to get to work and from work home. This becomes visible as there is a greater demand from Mondays to Fridays when everyone has to go to work than during the weekend. During the workdays the demands remains at a relatively constant level before dropping a little bit at Saturdays and Sundays. The lowest demand is on Sunday which is probably due to many people staying at home on Sunday’s and rest.
* Monthly demand:
  + When looking at the demand per month, it is obvious that the demand is the highest from June to November. During that time the demand remains at a relatively constant level. There is a smaller decline from October to November before dropping significantly in December. The lowest values are reached in January and February which are followed by a jump in March and a continuous rise until June. This can be explained by the temperatures. As it gets colder peoble tend to not take the bike so that demand is the lowest during the coldest months. There could also be snow from December and March which is also likely to have a negative effect on demand.
  + It is striking that there is no outstanding peak in demand when looking at it on a monthly basis. As already said it remains pretty steadily during the warmer month.