(b) Using the code below, describe what is plotted in Figure 4. Comment on the selection of `window`.

6 marks

```
daycare %>% STL(log(Count) ~ season(window = 21)) %>% autoplot() +
  ggtitle("Number of employees in child day care services in New York City")
```

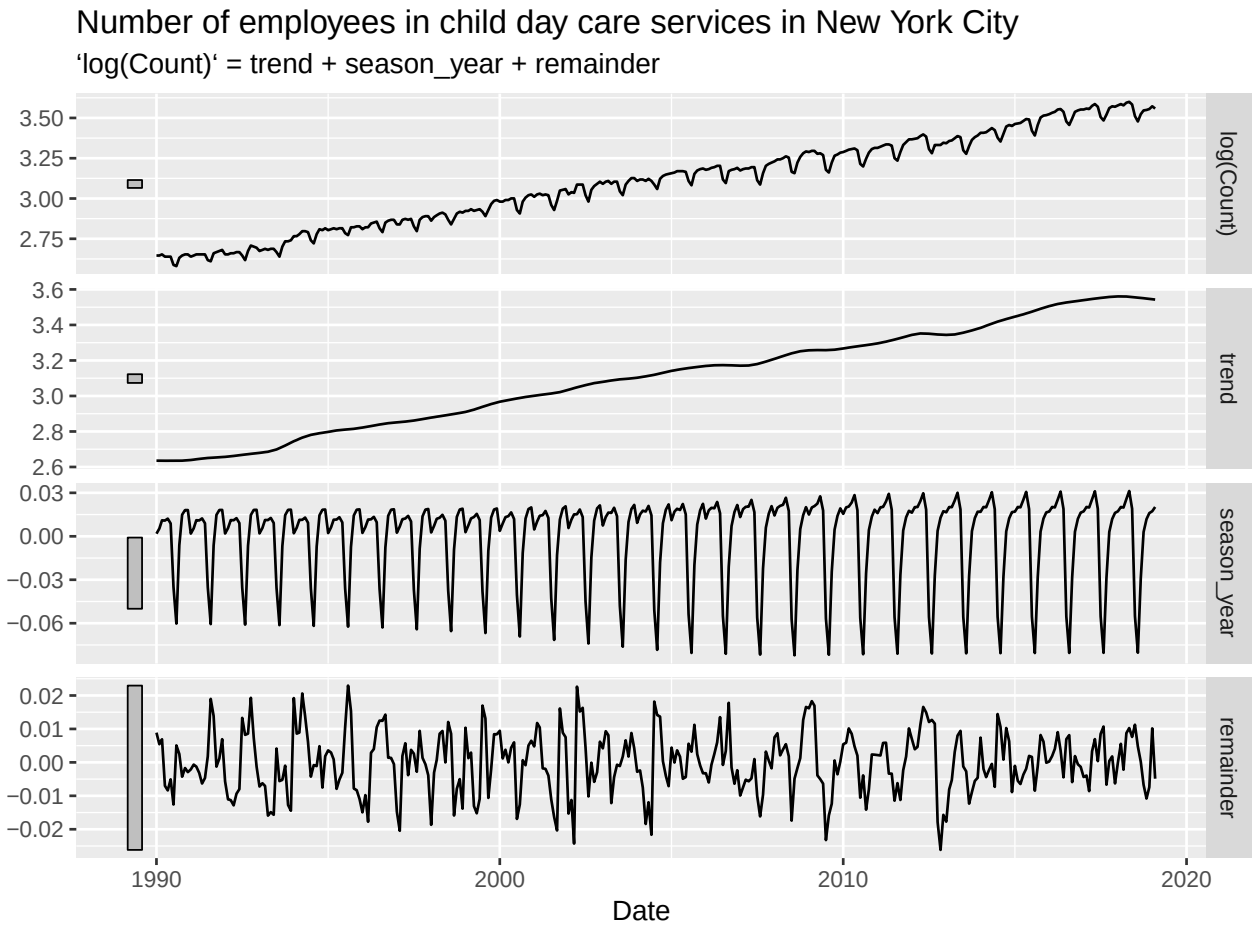

Figure 4:

(c) You are asked to provide forecasts for the next two years for the `daycare` series shown in Figure 1. Consider applying each of the methods and models below. Comment, in a few words each, on whether each one is appropriate for forecasting the data. No marks will be given for simply guessing whether a method or a model is appropriate without justifying your choice.

A. Seasonal naïve method.
B. Drift method plus seasonal dummies.
C. Holt-Winters additive damped trend method.
D. Holt-Winters multiplicative damped trend method.
E. ETS(A,N,M).
F. ETS(M,A_d,M).
G. ARIMA(1,1,4).
H. ARIMA(3,1,2)$(1,1,0)_{12}$.
I. ARIMA(0,1,1)$(2,0,0)_{12}$.
J. Regression model with time and Fourier terms.

10 marks

Total: 20 marks

— END OF QUESTION 2 —