server.R

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library(shiny)  
library(forecast)  
library(fma)  
#data(airpass, package="fma")  
#DData<-data.frame(Time=seq(1,144),airpass)  
shinyServer(function(input,output,session){  
 MyData <- reactive({  
 if(input$RD1==2){  
 inFile<- df1  
 }  
 })  
 Col<-reactive({input$Col})  
 Start<-reactive({input$Start})  
 End<-reactive({input$End})  
 Fre<-reactive({input$freq})  
 Hstar<-reactive({input$Starth})  
 Hend<-reactive({input$Endh})  
 output$summary<-renderPrint({  
 summary(MyData()[,Col()])  
 })  
 output$table<-renderDataTable({  
 MyData()  
 })  
 output$PlotG<-renderPlot({  
 if(is.null(MyData())!=T){  
 plot(MyData()[,Col()],ylab="Observations")+lines(MyData()[,Col()])  
 }  
 })  
 output$Plot1<-renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 if(input$F2==1){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),level = input$CI)  
 plot(forecast1,xlab="Time",ylab="Observations")  
 lines(forecast1$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 if(input$F2==2){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),initial = "simple",level = input$CI,alpha = input$AlphaS)  
 plot(forecast1,xlab="Time",ylab="Observations")  
 lines(forecast1$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 })  
 output$Plot2<-renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
 if(input$F2==1){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),level = input$CI)  
 barplot(accuracy(forecast1,OutsampleTs),legend=rownames(accuracy(forecast1,OutsampleTs)),main="Accuracy Test",beside=TRUE, col=c("red","blue"))  
 }  
 if(input$F2==2){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),initial = "simple",level = input$CI,alpha = input$AlphaS)  
 barplot(accuracy(forecast1,OutsampleTs),legend=rownames(accuracy(forecast1,OutsampleTs)),main="Accuracy Test",beside=TRUE, col=c("red","blue"))  
 }  
 })  
 output$accu1 <-renderTable({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
 if(input$F2==1){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),level = input$CI)  
 }  
 if(input$F2==2){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),initial = "simple",level = input$CI,alpha = input$AlphaS)  
 }  
 data.frame(Item=c('In Sample Error','Out Sample Error'),accuracy(forecast1,OutsampleTs))  
   
   
 })  
   
 output$out1 <-renderTable({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
 if(input$F2==1){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),level = input$CI)  
 forecast\_out1 <- forecast1$lower  
 }  
 if(input$F2==2){  
 forecast1<-ses(InsampleTs,h=length(OutsampleTs),initial = "simple",level = input$CI,alpha = input$AlphaS)  
 forecast\_out1 <- forecast1$lower  
 }  
 (data.frame(Y = as.character(as.matrix(forecast\_out1)), date = as.character(as.Date(forecast\_out1))))  
 })  
   
 output$Plot3<-renderPlot({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
 if(input$F4==1){  
 forecast<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1)  
 plot(forecast,xlab="Time",ylab="Observations")  
 lines(forecast$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 if(input$F4==2){  
 forecast<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1,initial = "simple",alpha = input$AlphaL,beta = input$BetaL)  
 plot(forecast,xlab="Time",ylab="Observations")  
 lines(forecast$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
   
 })  
 output$Plot4<-renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 if(input$F4==1){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1)  
 barplot(accuracy(forecast2,OutsampleTs),legend=rownames(accuracy(forecast2,OutsampleTs)),main="Accuracy Test",beside=TRUE, col=c("red","blue"))  
 }  
 if(input$F4==2){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1,initial = "simple",alpha = input$AlphaL,beta = input$BetaL)  
 barplot(accuracy(forecast2,OutsampleTs),legend=rownames(accuracy(forecast2,OutsampleTs)),main="Accuracy Test",beside=TRUE, col=c("red","blue"))  
 }  
 })  
   
   
   
 output$accu2 <- renderTable({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 if(input$F4==1){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1)  
   
 }  
 if(input$F4==2){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1,initial = "simple",alpha = input$AlphaL,beta = input$BetaL)  
 }  
   
 data.frame(Item=c('In Sample Error','Out Sample Error'),accuracy(forecast2,OutsampleTs))  
   
   
   
 })  
   
   
 output$out2 <- renderTable({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 if(input$F4==1){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1)  
 forecast\_out2 <- forecast2$lower  
   
 }  
 if(input$F4==2){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1,initial = "simple",alpha = input$AlphaL,beta = input$BetaL)  
 forecast\_out2 <- forecast2$lower  
 }  
 (data.frame(Y = as.character(as.matrix(forecast\_out2)), date = as.character(as.Date(forecast\_out2))))  
   
   
 })  
   
 output$Plot5<-renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
 if(input$F6==1){  
 if(input$AM==1){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2)  
 print(forecast3$lower)  
 plot(forecast3)  
 lines(forecast3$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 if(input$AM==2){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,"multiplicative")  
 plot(forecast3)  
 lines(forecast3$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 }  
 if(input$F6==2){  
 if(input$AM==1){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,initial = "simple",alpha = input$AlphaH,beta = input$BetaH,gamma = input$GammaH)  
 plot(forecast3)  
 lines(forecast3$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 if(input$AM==2){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,"multiplicative",initial = "simple",alpha = input$AlphaH,beta = input$BetaH,gamma = input$GammaH)  
 plot(forecast3)  
 lines(forecast3$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
 }  
 }  
   
 })  
   
 output$out3 <- renderTable({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 if(input$F4==1){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1)  
 forecast\_out3 <- forecast2$lower  
   
 }  
 if(input$F4==2){  
 forecast2<-holt(InsampleTs,h=length(OutsampleTs),level = input$CI1,initial = "simple",alpha = input$AlphaL,beta = input$BetaL)  
   
 forecast\_out3 <- forecast2$lower  
 }  
  
 (data.frame(Y = as.character(as.matrix(forecast\_out3)), date = as.character(as.Date(forecast\_out3))))  
 })  
   
 output$Plot6<-renderPlot({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
   
 if(input$F6==1){  
 if(input$AM==1){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2)  
 barplot(accuracy(forecast3,OutsampleTs),legend=rownames(accuracy(forecast3,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
 }  
 if(input$AM==2){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,"multiplicative")  
 barplot(accuracy(forecast3,OutsampleTs),legend=rownames(accuracy(forecast3,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
 }  
 }  
 if(input$F6==2){  
 if(input$AM==1){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,initial = "simple",alpha = input$AlphaH,beta = input$BetaH,gamma = input$GammaH)  
 barplot(accuracy(forecast3,OutsampleTs),legend=rownames(accuracy(forecast3,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
 }  
 if(input$AM==2){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,"multiplicative",initial = "simple",alpha = input$AlphaH,beta = input$BetaH,gamma = input$GammaH)  
 barplot(accuracy(forecast3,OutsampleTs),legend=rownames(accuracy(forecast3,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
 }  
 }  
 })  
 output$accu3 <- renderTable({  
   
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
   
   
 if(input$F6==1){  
 if(input$AM==1){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2)  
   
 }  
 if(input$AM==2){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,"multiplicative")  
 }  
 }  
 if(input$F6==2){  
 if(input$AM==1){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,initial = "simple",alpha = input$AlphaH,beta = input$BetaH,gamma = input$GammaH)  
 }  
 if(input$AM==2){  
 forecast3<-hw(InsampleTs,h=length(OutsampleTs),level = input$CI2,"multiplicative",initial = "simple",alpha = input$AlphaH,beta = input$BetaH,gamma = input$GammaH)  
 }  
 }  
 data.frame(Item=c('In Sample Error','Out Sample Error'),accuracy(forecast3,OutsampleTs))  
   
 })  
   
   
 output$Plot7<-renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 Endpoint<-time(InsampleTs)[length(time(InsampleTs))]  
 if(input$Trans==2){  
 InsampleTs<-log(InsampleTs)  
 }  
 if(input$Trans==3){  
 InsampleTs<-InsampleTs^0.5  
 }  
 x<-time(InsampleTs)  
 New<-data.frame(x=seq(Endpoint,Endpoint+(1/Fre())\*length(OutsampleTs),by=1/Fre()))  
 reg<-lm(InsampleTs~x)  
 pred<-predict(reg,New,interval = "prediction",level=input$CI3)  
 if(input$Trans==2){  
 plot(exp(InsampleTs),xlim=c(Start(),ceiling(Endpoint+(1/Fre())\*length(OutsampleTs))),ylim=c(floor(min(exp(InsampleTs))),ceiling(exp(max(pred[,3])))))+points(New$x,exp(pred[,1]),pch=1)  
 lines(New$x,exp(pred[,2]),lty=2,col="red")  
 lines(New$x,exp(pred[,3]),lty=2,col="red")  
 points(x,exp(reg$fitted.values),col="blue")  
   
 }  
 if(input$Trans==3){  
 plot(InsampleTs^2,xlim=c(Start(),ceiling(Endpoint+(1/Fre())\*length(OutsampleTs))),ylim=c(floor(min((InsampleTs)^2)),ceiling(max(pred[,3])^2)))+points(New$x,(pred[,1])^2,pch=1)  
 lines(New$x,(pred[,2])^2,lty=2,col="red")  
 lines(New$x,(pred[,3])^2,lty=2,col="red")  
 points(x,reg$fitted.values^2,col="blue")  
 }  
 if(input$Trans==1){  
 plot(InsampleTs,xlim=c(Start(),ceiling(Endpoint+(1/Fre())\*length(OutsampleTs))),ylim=c(floor(min(InsampleTs)),ceiling(max(pred[,3]))))+points(New$x,pred[,1],pch=1)  
 lines(New$x,pred[,2],lty=2,col="red")  
 lines(New$x,pred[,3],lty=2,col="red")  
 abline(reg$coefficients,col="blue")  
 }  
 })  
 output$plot8<-renderPlot({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 Endpoint<-time(InsampleTs)[length(time(InsampleTs))]  
 if(input$Trans==2){  
 InsampleTs<-log(InsampleTs)  
 }  
 if(input$Trans==3){  
 InsampleTs<-InsampleTs^0.5  
 }  
 x<-time(InsampleTs)  
 New<-data.frame(x=seq(Endpoint,Endpoint+(1/Fre())\*length(OutsampleTs),by=1/Fre()))  
 reg<-lm(InsampleTs~x)  
 pred<-predict(reg,New,interval = "prediction",level=input$CI3)  
 if(input$Trans==2){  
 FR<-exp(pred[,1])  
 barplot(accuracy(FR,OutsampleTs),main="Outsample Accuracy of Forecasting")  
 }  
 if(input$Trans==3){  
 FR<-pred[,1]^2  
 barplot(accuracy(FR,OutsampleTs),main="Outsample Accuracy of Forecasting")  
 }  
 if(input$Trans==1){  
 FR<-pred[,1]  
 barplot(accuracy(FR,OutsampleTs),main="Outsample Accuracy of Forecasting")  
 }  
 })  
 output$accu4 <- renderTable({  
   
   
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 Endpoint<-time(InsampleTs)[length(time(InsampleTs))]  
 if(input$Trans==2){  
 InsampleTs<-log(InsampleTs)  
 }  
 if(input$Trans==3){  
 InsampleTs<-InsampleTs^0.5  
 }  
 x<-time(InsampleTs)  
 New<-data.frame(x=seq(Endpoint,Endpoint+(1/Fre())\*length(OutsampleTs),by=1/Fre()))  
 reg<-lm(InsampleTs~x)  
 pred<-predict(reg,New,interval = "prediction",level=input$CI3)  
 if(input$Trans==2){  
 FR<-exp(pred[,1])  
   
 }  
 if(input$Trans==3){  
 FR<-pred[,1]^2  
   
 }  
 if(input$Trans==1){  
 FR<-pred[,1]  
   
 }  
 data.frame(Item=c('Out Sample Error'),accuracy(FR,OutsampleTs))  
   
 })  
   
   
 output$out4 <- renderTable({  
   
   
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 Endpoint<-time(InsampleTs)[length(time(InsampleTs))]  
 if(input$Trans==2){  
 InsampleTs<-log(InsampleTs)  
 }  
 if(input$Trans==3){  
 InsampleTs<-InsampleTs^0.5  
 }  
 x<-time(InsampleTs)  
 New<-data.frame(x=seq(Endpoint,Endpoint+(1/Fre())\*length(OutsampleTs),by=1/Fre()))  
 reg<-lm(InsampleTs~x)  
 pred<-predict(reg,New,interval = "prediction",level=input$CI3)  
 if(input$Trans==2){  
 FR<-exp(pred[,1])  
 print(FR$lower)  
   
 }  
 if(input$Trans==3){  
 FR<-pred[,1]^2  
 print(FR)  
 }  
 if(input$Trans==1){  
 FR<-pred[,1]  
 print(FR)  
 }  
 data.frame(Predictions = as.character(FR))  
   
   
 })  
   
   
 output$accu6 <- renderTable({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast6<-forecast(auto.arima(InsampleTs),level = input$CI5,h=length(OutsampleTs))  
 data.frame(Item=c('In Sample Error','Out Sample Error'),accuracy(forecast6,OutsampleTs))  
 })  
   
 # output$Plot9<-renderPlot({  
 # TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 # InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 # OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 # forecast5<-forecast(nnetar(InsampleTs,level = input$CI4,h=length(OutsampleTs)))  
 # plot(forecast5)  
 # lines(forecast5$fit,col="red",lty=2)  
 # lines(OutsampleTs,col="green",lty=2)  
 #   
 # })  
 # output$Plot10<-renderPlot({  
 # TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 # InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 # OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 # forecast5<-forecast(nnetar(InsampleTs,level = input$CI4,h=length(OutsampleTs)))  
 # barplot(accuracy(forecast5,OutsampleTs),legend=rownames(accuracy(forecast5,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
 #   
 # })  
 # output$accu5 <- renderTable({  
 # TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 # InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 # OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 # forecast5<-forecast(nnetar(InsampleTs,level = input$CI4,h=length(OutsampleTs)))  
 # data.frame(Item=c('In Sample Error','Out Sample Error'),accuracy(forecast5,OutsampleTs))  
 # })  
   
 output$Plot11<- renderPlot({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast6<-auto.arima(InsampleTs)  
 plot(forecast(forecast6,level = input$CI5,h=length(OutsampleTs)))  
 lines(fitted(forecast6),col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
   
   
 })  
 output$Plot12 <- renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast6<-forecast(auto.arima(InsampleTs),level = input$CI5,h=length(OutsampleTs))  
 barplot(accuracy(forecast6,OutsampleTs),legend=rownames(accuracy(forecast6,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
   
   
 })  
   
   
 output$out6 <- renderTable({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast6<-forecast(auto.arima(InsampleTs),level = input$CI5,h=length(OutsampleTs))  
 forecast\_out6 <- forecast6$lower  
 (data.frame(Y = as.character(as.matrix(forecast\_out6)), date = as.character(as.Date(forecast\_out6))))  
 })  
   
 ###  
   
 output$Plot0<- renderPlot({  
   
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast0<-naive(InsampleTs,h=length(OutsampleTs))  
 plot(forecast(forecast0,h=length(OutsampleTs)))  
 lines(forecast0$fit,col="red",lty=2)  
 lines(OutsampleTs,col="green",lty=2)  
   
   
 })  
 output$Plot00 <- renderPlot({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast0<-naive(InsampleTs,h=length(OutsampleTs))  
 barplot(accuracy(forecast0,OutsampleTs),legend=rownames(accuracy(forecast0,OutsampleTs)),main="Accuracy",beside=TRUE, col=c("red","blue"))  
   
   
 })  
 output$accu0 <- renderTable({  
 TotalTS<-ts(MyData()[,Col()],start=Start(),frequency = Fre())  
 InsampleTs<-window(TotalTS,start = c(Start(),1),end=c((Hstar()-1),Fre()))  
 OutsampleTs<-window(TotalTS,start=c(Hstar(),1),end = c(Hend(),Fre()))  
 forecast0<-naive(InsampleTs,h=length(OutsampleTs))  
 data.frame(Item=c('In Sample Error','Out Sample Error'),accuracy(forecast0,OutsampleTs))  
 })  
   
   
   
})