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| **Block** | **R Code** | **Process Code** |
| 1 | #Preliminary data for Fatmeter Calibration  #----------------------------------------------- | comment, purpose of R script |
| 1 | #-----------------------------  # WB Lipid Analysis  #----------------------------- | comment, subsection |
| 2 | #upper anterior measurement(outlier included) Linear model | comment, data included, action of script |
| 2 | #Only fish that had upper anterior measurements were the larger cohort sampled at Garrison | comment, data note |
| 2 | linearAnterior <- lm(ProximateAnalysisData$PSUA~ProximateAnalysisData$Lipid) | lm, create object |
| 2 | summary(linearAnterior) | summary of lm object |
| 2 | linearAnterior | inspect lm object |
| 2 | with(ProximateAnalysisData, plot(PSUA ~ Lipid, las = 1)) | scatterplot of variables in lm, using with() |
| 2 | abline(linearAnterior) | add lm line to plot |
| 2 | plot(linearAnterior) | diagnostic plot |
| 3 | #Exponential function | comment |
| 3 | expAnterior <- lm(log(ProximateAnalysisData$PSUA)~ProximateAnalysisData$Lipid) | lm, create object |
| 3 | summary(expAnterior) | summary of lm object |
| 3 | expAnterior | inspect lm object |
| 3 | with(ProximateAnalysisData, plot(log(PSUA) ~ Lipid, las = 1)) | scatterplot of variables in lm, using with() |
| 4 | #Upper posterior measurement (outlier included) | comment |
| 4 | #Only fish that had upper posterior measurements were the larger cohort sampled at Garrison | comment |
| 4 | linearposterior <- lm(ProximateAnalysisData$PSUP ~ ProximateAnalysisData$Lipid) | lm, create new object |
| 4 | summary(linearposterior) | summary of lm object |
| 4 | linearposterior | inspect lm object |
| 4 | with(ProximateAnalysisData, plot(PSUP ~ Lipid, las = 1)) | scatterplot of variables in lm, using with() |
| 4 | plot(posterior) | diagnostic plot, reference to non-existent variable |
| 5 | #Exponential posterior measurement (outlier included) | comment |
| 5 | expPosterior <- lm(log(ProximateAnalysisData$PSUP) ~ ProximateAnalysisData$Lipid) | lm, create new object |
| 5 | summary(expPosterior) | summary of lm object |
| 5 | expPosterior | inspect lm object |
| 5 | with(ProximateAnalysisData, plot(log(PSUP) ~ Lipid), las = 1) | scatterplot of variables in lm, using with() |
| 5 | plot(expPosterior) | diagnostic plot |
| 6 | #Anterior measuremnet with OUTLIER REMOVED exponential | comment |
| 6 | expAnterior2 <- lm(log(ProximateAnalysisDataOutlier$PSUA) ~ ProximateAnalysisDataOutlier$Lipid) | lm, create new object |
| 6 | summary(expAnterior2) | summary of lm object |
| 6 | expAnterior2 | inspect lm object |
| 6 | with(ProximateAnalysisDataOutlier, plot(log(PSUA) ~ Lipid), las = 1, xlab = "Whole-body Lipid Content (%)", ylab = "UA Fatmeter Reading") | scatterplot of variables in lm, changing axis labels, using with() |
| 6 | abline(expAnterior2) | add lm line to plot |
| 6 | plot(anterior2) | diagnostic plot, reference non-existent variable |
| 6 | anterior2 | inspect non-existent variable |
| 7 | #Posterior measuremnet with OUTLIER REMOVED | comment |
| 7 | expPosterior2 <- lm(log(ProximateAnalysisDataOutlier$PSUP) ~ ProximateAnalysisDataOutlier$Lipid) | lm, create new object |
| 7 | summary(expPosterior2) | summary of lm object |
| 7 | with(ProximateAnalysisDataOutlier, plot(log(PSUP) ~ Lipid, las = 1)) | scatterplot of variables in lm, using with() |
| 7 | abline(expPosterior2) | add lm line to plot |
| 7 | plot(posterior2) | diagnostic plot, reference non-existent variable |
| 7 | posterior2 | inspect non-existent variable |
| 8 | #CI | comment |
| 8 | qt(.975,9) | function calculation |
| 9 | #upper Middle measurements only (Including outlier) | comment |
| 9 | expMiddle <- lm(ProximateAnalysisData$PSUM ~ log(ProximateAnalysisData$Lipid)) | lm, create new object |
| 9 | summary(expMiddle) | summary of lm object |
| 9 | with(ProximateAnalysisData, plot(PSUM ~ log(Lipid), las = 1, xlab = "Whole-body Lipid Content (%)", ylab = "UM Fatmeter Reading")) | scatterplot of variables in lm, using with(), change axis labels |
| 9 | plot(middle) | diagnostic plot, reference to non-existent variable |
| 9 | middle | inspect non-existent variable |
| 10 | #---------------------------------  #Energy analysis of data  #--------------------------------- | subheading comment |
| 10 | #Means and sd of data | comment |
| 10 | mean(ProximateAnalysisData$Energy) | data summary (mean) |
| 10 | sd(ProximateAnalysisData$Energy) | data summary (sd) |
| 11 | #Anterior energy measurement (outlier included) | comment |
| 11 | expAnteriorE <- lm(log(ProximateAnalysisData$PSUA)~ProximateAnalysisData$Energy) | lm, create new object |
| 11 | summary(expAnteriorE) | summary of lm object |
| 11 | with(ProximateAnalysisData, plot(log(PSUA) ~ Energy, las = 1)) | scatterplot of variables in lm, using with() |
| 11 | plot(anteriorE) | diagnostic plot, reference to non-existent variable |
| 12 | #Posterior energy measurement (outlier included) | comment |
| 12 | expPosteriorE <- lm(log(ProximateAnalysisData$PSUP) ~ ProximateAnalysisData$Energy) | lm, create new object |
| 12 | summary(expPosteriorE) | summary of lm object |
| 12 | expPosteriorE | inspect lm object |
| 12 | with(ProximateAnalysisData, plot(PSUP ~ Energy, las = 1)) | scatterplot of variables in lm, using with() |
| 12 | plot(posteriorE) | diagnostic plot, reference to non-existent variable |
| 13 | #OUTLIER REMOVED anterior Energy | comment |
| 13 | expAnterior2E <- lm(log(ProximateAnalysisDataOutlier$PSUA) ~ ProximateAnalysisDataOutlier$Energy) | lm, create new object |
| 13 | summary(expAnterior2E) | summary of lm object |
| 13 | expAnterior2E | inspect lm object |
| 13 | with(ProximateAnalysisDataOutlier, plot(log(PSUA) ~ Energy, las = 1)) | scatterplot of variables in lm, using with() |
| 13 | abline(expAnterior2E) | add lm line to plot |
| 13 | plot(anterior2E) | diagnostic plot, reference to non-existent variable |
| 14 | #Posterior energy (outlier removed) | comment |
| 14 | expPosterior2E <- lm(log(ProximateAnalysisDataOutlier$PSUP) ~ ProximateAnalysisDataOutlier$Energy) | lm, create new object |
| 14 | summary(expPosterior2E) | summary of lm object |
| 14 | with(ProximateAnalysisDataOutlier, plot(log(PSUP) ~ Energy, las = 1)) | scatterplot of variables in lm, using with() |
| 14 | abline(expPosterior2E) | add lm line to plot |
| 14 | plot(posterior2E) | diagnostic plot, reference to non-existent variable |
| 14 | posterior2E | inspect non-existent variable |
| 15 | #CI | comment |
| 15 | qt(.975,9) | function calculation, redundant, previously calculated |
| 16 | #Middle Data (outlier removed) | comment |
| 16 | expMiddle2E <- lm(log(ProximateAnalysisDataOutlier$PSUM) ~ ProximateAnalysisDataOutlier$Energy) | lm, create new object |
| 16 | summary(expMiddle2E) | summary of lm object |
| 16 | expMiddle2E | inspect lm object |
| 16 | with(ProximateAnalysisDataOutlier, plot(PSUM ~ log(Energy), las = 1)) | scatterplot of variables in lm, using with() |
| 16 | plot(middle2E) | diagnostic plot, reference to non-existent variable |