VERY BRIEF INTRODUCTION TO STATISTICAL MODELLING IN R

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FIRST CLASS IS MONDAY JAN 24, 2005. YOU NEED TO SIGN UP FOR ONE OF THE SLOTS 10-11 am, 11-12 noon, 12 noon- 1pm.
Catam users: To start R:
Open a Command Prompt window from the start button
type

```
X:\catam\r
```

You should now have the special R window on your screen.
Note that R can also be started from the Windows Start Menu

```
 Start->All Programs->PWF Programs->Teaching Packages->Catam->R
 demo(graphics)  # for a demonstration of R graphics
# this course is not actually about fancy graphics, but this makes
# a colourful way to start
data()          # to find out the datasets available in R
x = rnorm(100)  # to generate a random sample of 100
# observations from N(0,1)
?rnorm          # 'help' for this function
x # to display x on the screen
round(x,3) # easier on the eye
summary(x) ; mean(x) # useful functions
hist(x)         # for a histogram of x
ls()            # to see our current R 'objects'
y = x[1:15]     # to pick out the first 15 elements of x
summary(y)
?t.test # to find out about the t.test
t.test(y) # a 2-sided test, of mu(y) = 0
t.test(y, alt="less") # can you see what you are doing here?
t.test(y, alt="greater") # can you see what you are doing here?
z = rnorm(15) + .5
```

```
t.test(y,z, paired=F, var.equal=T)
# the 2-sample t-test (ie 2 independent samples)
?cars # nice antique data!
speed = cars[,1] # to define speed as 1st column
dist  = cars[,2] # to define distance as 2nd column
plot(speed, dist)
first.lm = lm(dist~ speed) # to create a 'linear model' object
# this fits the model: dist = a + b speed
summary(first.lm) # to see the regression results
abline(first.lm)  # to put the fitted line on the graph
help.start() # shows excellent, but perhaps overwhelming, online help
q()       # to come out of the R-session
Answer 'yes' to '.... save workspace image?'
dir       # to see what you have in your directory
type .Rhistory # to see your last R-session commands
```