Journal: RAC Fuel Factsheet—Outbound

Wednesday 28.8.2019

1. Setup project and repo
2. Initialise packrat with options

- vcs.ignore.src: TRUE
- auto.snapshot:TRUE **todo: check this works!**
- initialisation successful but Warning messages:

```
1: In untar(src, exdir = target, compressed = "gzip") :
  argument 'compressed' is ignored for the internal method
2: In untar(src, compressed = "gzip", list = TRUE) :
  argument 'compressed' is ignored for the internal method
```

3. Started getting an odd error on saving: "no such file or directory" which just happened constantly, not even when saving and usually crashed R. Restart of the machine seemed to help, since the suggestions here didn't seemm to. This is what my makefile looks like graphically at the minute:

4. Install knitr and dependencies to be able to compile Rmds.

5. CHeck packrat.lock, which seems to have not changed, meaning automatic snapshot doesn't work?

6. Try manual snapshot, but get error

```
Error: Unable to retrieve package records for the following packages:
- 'base64enc', 'digest', 'htmltools', 'jsonlite', 'rmarkdown', 'tinytex'```
```

7. Ah, OK, seems these were needed by knitr, so as soon as i ran knit on this journal the packages were installed.

8. Run `packrat::snapshot()` which seems to work fine. all good. Although there is no automatic snapshots it seems.

9. Clean up makefile. I think I'll try building this whole project with make to keep it more managable and easier for RAC to handle as well. **todo: potential portability issue: the command `dot` used in creating the makefile graphic, which is from graphviz. so that would need to be installed. Run "dot -V" from the command prompt to check. but this can be removed from the makefile once porting, since it won't change later anyway**

10. Back to packrat. Seems that I am unnecessarily using the `infer.dependencies=TRUE` default setting, which checks for the versions of all dependent packages. But is it bad? This guy seems to think so. **todo: should i migrate to renv instead? seems packrat is out..**

11. In code/sandbox, walk through the crop.R script. This is pretty straightforward, crops predetermined rectangles from the factsheet and adds a source/date annotation.

12. Walk through main outbound script:

- RDCOMClient package is used to send emails from Outlook in Windows. Won't be able to test that. **todo: Unless I set up a virtual machine..**

Thursday 29.8.2019

1. walk through outbound script:

- `gs_url` works fine, no authentication required. registered googlesheet?
- `gs_read` downloads individual worksheets.
- Missing column names warning messages! **can be fixed in googlesheet**
- `googlesheets` lifecycle is down as **retired** - time to move to googlesheets4? but not on CRAN yet.
- ok, so the unit testing looks like it could be cleaned up using `tinytest`? **todo: read up on other options**

2. `tinytest` or `testthar`

- doesn't stop the script but simply saves the errors.
- unit testing outside package envirnoments e.g. here

3. Logical testing

- includes manually input numbers for max price, duty rates.. **what if these change?**

4. error/typo : (?/barrel) instead of (£/barrel)

5. sheet data testing: all or nothing, doesn't specify error.

6. saving to excel (some weird date calculations haha)

Outline of script: 1. download and save data from googlesheet. 2. functions 3. checking data * pump price data: + remove any non-numeric values + check all the cells have legal values + STOP if not. + logical tests * etc. all the worksheets 4. creating custom data frames 5. write to xls file

7. email Ivo:

   The deliverable is a script/repo/package that does the following: 1. downloads the data (this is already OK) 2. does unit testing with reporting e.g. using testthat or tidytest (this is to be completely rewritten) 3. does necessary calculations (this is already OK) 4. create a list of edits (this is to be completely rewritten) 5. sends them to the designers and archives them (this is already OK)

   So it's point 4 that I'm just not completely clear on. You want the edits to be passed on in a more user friendly format, not the current excel spreadsheet? This is what you mean by "email text and attached tables of data etc"? And do you want to use the numbering of the elements you sent in the attached pdf? The idea being presumably to make Nick's life easier?

8. OK, what the heck, try a new repo with `renv` instead of `packrat`...

9. Still not clear on packrat - is the infer.dependencies setting really necessary? it means it fetches sources for dozens of packages in addition to the ones I use. I think.

10. OK, first i'll set ignored directories in packrat options to ignore most everything.

Friday 30.8.2019

1. OK, there was a bug in renv, solved wiht this issue but now it seems to work.

2. restart repo and reinitialise. This time before committing remove Bhavin's password...

3. Actually had to reinitialise renv, because it has to happen after cloning the repo from github, that way it has a `.gitignore` file for renv to amend.

4. Now commit

Modnay 6.1.2020

1. OK, not sure what was going on before, i'll remove the packrat folder and initialise renv.
2. This again didn't go completely smoothly and required a sequence of install.package (not successfully), remove.package, re-initialise renv before stopped giving a knitr error. Seems ok now. But it is not.
3. Could it be that i had an old version of renv? i mean i clearly did. but i also know i'd already checked it before. but i guess that was checked inside a renv project? so that means it was updated there, but not globally? I really need to get a handle on package management in R. OK, reinstalled renv, reinitialised package, hopefully it works now.
4. Now figure out what i have already done here.
5. OK, so outbound is before crop presumably, i have the order wrong in the sandbox.
6. OK, start cleaning up the 01-outbound code.

Tuesday 7.1.2020

1. clean through read and assign data code. consistency, readability.
2. Data import works, but there are warning messages about missing column names being filled in X1 etc.
3. So many calculations are being made in the google sheet already. SO there are intermediate results there, as well as non-tidy tables and cells that are used to produce outputs to then import into R. But some are imported several times over. e.g. maxmin and lastweek.
4. I don't like this stuff happening in the google sheet. I'd much rather just import the raw data and manupulate it programatically in R as opposed to using googlesheet formulas.
5. For example the fuel price over time ten year maximums are not actually calculated in the googlesheet but are fixed. Maybe that's OK now, but what if the prices are surpassed? Who will know to manually fix that? Or what happens in 2022, when the maximum is no longer within the past ten years?
6. "sensechecks" e.g. oil max min seem to work like this: (i) the raw data is in the gs. (ii) the max and min are caclulated in the gs. (iii) the data is imported into R. (iv) the max and min. are imported into R. (v) the max and min are calculated from the data imported in R. (vi) the calculated and imported max and min are compared.
7. Some of the chacking seems to be duplicating work and then comparing to itself. I'm not sure how that contributes much. Like e.g. oil max min seems to work like this: (i) the raw data is in the gs. (ii) the max and min are caclulated in the gs. (iii) the data is imported into R. (iv) the max and min. are imported into R. (v) the max and min are calculated again in R from the data imported in R. (vi) the calculated and imported max and min are compared.

Why would you do this? What kind of error is this anticipating? In the case of an error, which calculation wins out? I would just do the calculation in R.

8. OK, the facsheet seems to have 77 fields, some are single values, others multiple ones e.g. time series. A tidy way of outputting this is a sinlge numbered long table, with a field ID number, description and values, plus an index variable for fields with multiple values.
9. What are we checking? Sanity checks. OK. But i'm not writing tests to check my code. or the googlesheet code.
10. OK, so let's just import the raw tables that are necessary for all the other calculations. That means:

- `pump.prices` which is the last years worth of petrol and diesel prices.
- `oil.prices`, same for oil
- `basil`, which is some other raw data we need

- `taxes`, which lists duty and VAT levels
- `eu.compare` which lists the pump price ranking of all eu countries

All the other variables etc. we will calculate in the script, not import them from the googlesheet.

11. The fuel prediciton is not derived in the sheet, but somewhere else i gather. But i also don't see it on the factsheets, so i'm ignoring it for now.
12. OK, so only the raw data gets imported, now figure out the testing
13. Have a look at the unit testing and look at tinytest and testthat to decide what if anything is approopriate.
14. So there are four functions in the script:

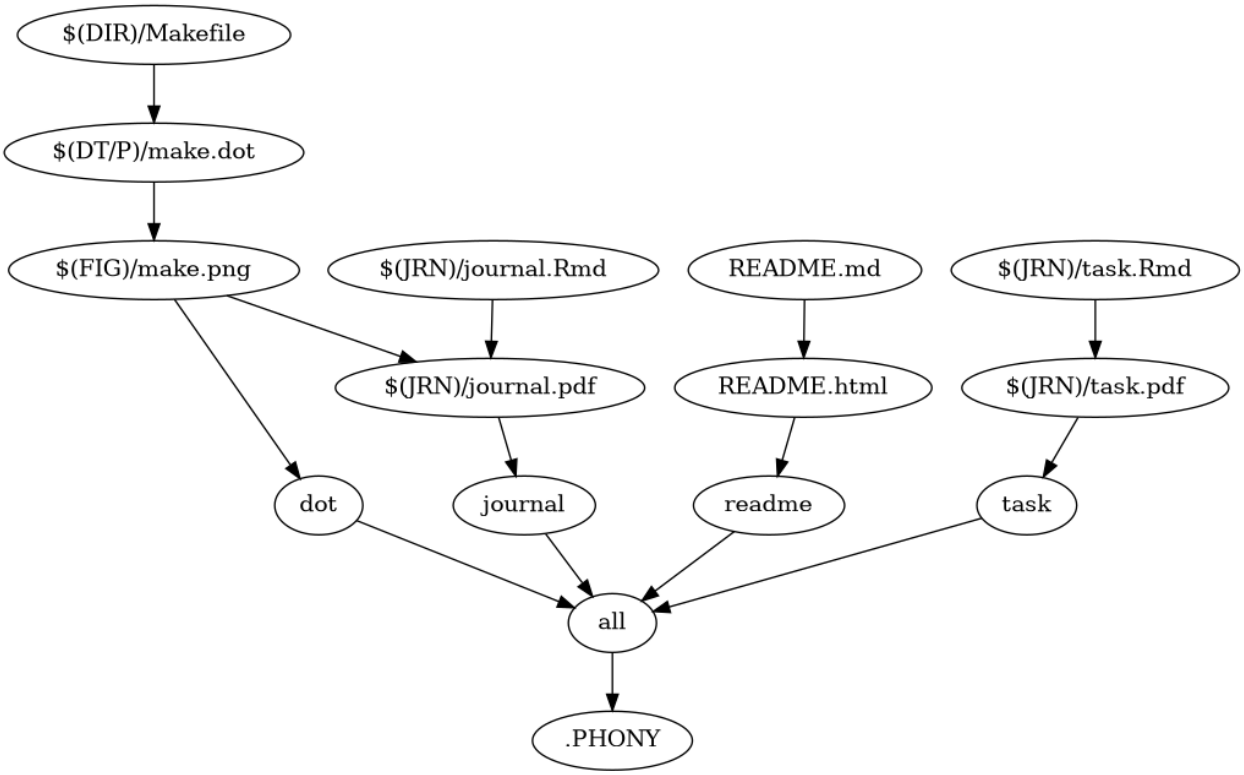
- `error check` is checking if there are any NAs in the cells.
- `sheet check` then just aggregates several error checks to see if they were all OK.
- `gg.convert` removes any remnnants from the google sheet and makes sure there are only numbers and NAs left. This one could be useful.
- `date.check` checks if the if the date is yesterday.

15. OK, so now I've got just the one function `Fun.gs.clean` that replaces any googlesheet errors (which all start with a hash #) with an `NA`. Tested it on the weekly fule worksheet, which currenlty has those errors for whatever reason. Wokrs a treat.
16. Other checks:

- are petrol and diesel more than 10p apart? - would you really want to stop, or just get a warning?
- check the petrol and diesel prices are lower than their all time highs. so what if they are, what do you want to do? are these sanity checks or should sth be done?
- duty rates are correct. if they are what you say they are. why are you importing them then? what if they actually change, why would you want the code to stop if they do?
- checking date, checking week before is really week before. but this is again r code checking googlesheet code, which is silly.
- then there is another fuel price check, repeating the lower than max check. and adding a higher than 90 check. again. what if it happens. why is this being checked.
- also check the weekly difference isn't larger than 5p. otherwise stop. these should all be warnings for sure.
-

17. OK, so it seems that looking up prices for the previous week means looking 7 days back, but if that doesn't exist, then 6 days. Is that always OK? Anyway, means I have to treat dates as dates, not characters.
18. OK, now i'm ghaving trouble becuase the clena function is changing everythign to character vectors instead of keeping them numeric if they started out that way.

Appendix - make file


$(DIR)/Makefile
$(DT/P)/make.dot
$(FIG)/make.png
$(JRN)/journal.Rmd
README.md
$(JRN)/task.Rmd
$(JRN)/journal.pdf
README.html
$(JRN)/task.pdf
dot
journal
readme
task
all
.PHONY