SwimmeR version 0.7.2 is now available from CRAN. This new version contains some new features, plus a few changes to make it more user-friendly. Let me show you what I've been working on.

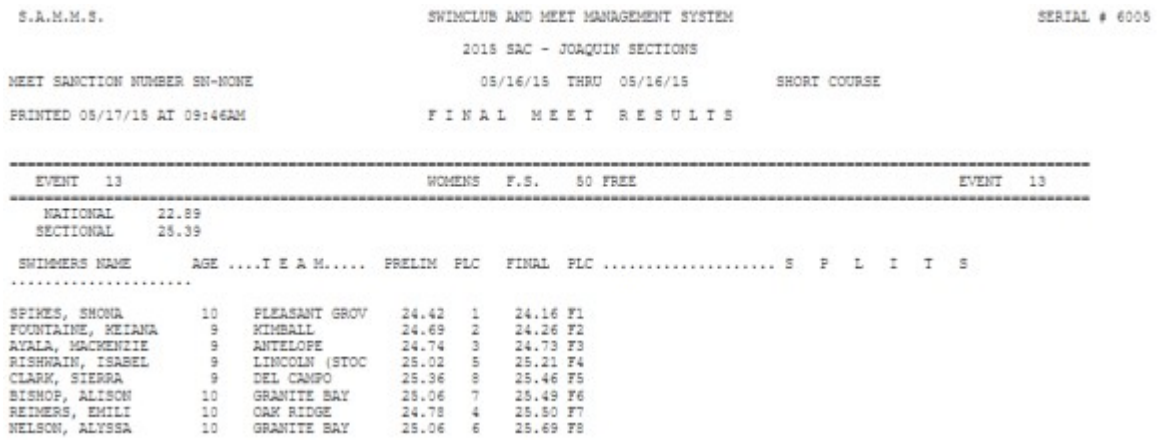
```
library(SwimmeR)
library(dplyr)
library(stringr)
library(flextable)
library(rbenchmark)

flextable_style <- function(x) {
  x %>%
    flextable() %>%
    bold(part = "header") %>% # bold header
    bg(bg = "#D3D3D3", part = "header") %>% # puts gray background
behind the header row
    align_nottext_col(align = "center", header = TRUE, footer = TRUE)
%>% # center alignment
    autofit()
}
```

New Features

- SwimmeR can now parse S.A.M.M.S. style results. S.A.M.M.S., which stands for Swimclub And Meet Management System, was an *ahem* swim club and meet management system that predated Hy-Tek's Meet and Team Manager. It seems to have been most popular in California, where it's still used by USA Swimming clubs and high schools into the present day.

S.A.M.M.S. meets look like this:



```
 S.A.M.M.S.                          SWIMCLUB AND MEET MANAGEMENT SYSTEM                          SERIAL # 6005

                                        2015 SAC - JOAQUIN SECTIONS

MEET SANCTION NUMBER SN-NONE              05/16/15  THRU  05/16/15        SHORT COURSE

PRINTED 05/17/15 AT 09:46AM               F I N A L   M E E T   R E S U L T S

================================================================================================================
  EVENT  13                               WOMENS   F.S.    50 FREE                                  EVENT  13
================================================================================================================
    NATIONAL     22.89
   SECTIONAL     25.39

 SWIMMERS NAME       AGE ....T E A M.....  PRELIM  PLC   FINAL  PLC ..................... S   P   L   I   T   S
.....................

SPIKES, SHONA         10    PLEASANT GROV   24.42   1    24.16 F1
FOUNTAINE, MEIANA      9    KIMBALL         24.69   2    24.26 F2
AYALA, MACKENZIE       9    ANTELOPE        24.74   3    24.73 F3
RISHWAIN, ISABEL       9    LINCOLN (STOC   25.02   5    25.21 F4
CLARK, SIERRA          9    DEL CAMPO       25.36   8    25.46 F5
BISHOP, ALISON        10    GRANITE BAY     25.06   7    25.49 F6
REIMERS, EMILI        10    OAK RIDGE       24.78   4    25.50 F7
NELSON, ALYSSA        10    GRANITE BAY     25.06   6    25.69 F8
```

Parsing them is a simple matter for you `SwimmeR` users – it's exactly the same as parsing Hy-Tek style results. The only differences come in with respect to `relay_swimmers` and `splits`. Same `read_results`, same `swim_parse`. S.A.M.M.S. results that I've seen don't include relay swimmers, so of course `SwimmeR` doesn't collect them. Splits are also rarely seen in S.A.M.M.S. results and at this moment are also not collected by `SwimmeR`, although they may be in a future release.

```
df <-
  swim_parse(
    read_results(
      "http://www.pacswim.org/userfiles/meets/documents/1629/1119bac.htm"
    )
  )

df %>%
  head(5) %>%
  flextable_style()
```

Place	Name	Age	Team	Finals_Time	DQ	Event
1	LADOMIRAK, ALEGRIA	8	PC PALO ALTO STANFORD	16.11	0	EVENT 73 FEMALE 8&UN 25 FREE
2	DIEHN, EVA	8	PC BULL DOG SWIM CLUB	16.36	0	EVENT 73 FEMALE 8&UN 25 FREE
3	HILL, NAOMI	8	PC PALO ALTO STANFORD	16.50	0	EVENT 73 FEMALE 8&UN 25 FREE
4	HOUTZER, AMELIA	8	PC PALO ALTO STANFORD	16.88	0	EVENT 73 FEMALE 8&UN 25 FREE
5	CHANG, KAYLA	8	PC BURLINGAME AQUATIC	17.55	0	EVENT 73 FEMALE 8&UN 25 FREE

On a personal level working with these S.A.M.M.S. results was very encouraging, because they have all kinds of weird bugs and cut corners that make me feel better about `SwimmeR`. For example some S.A.M.M.S. results list a place order for finals swims, as “F1”, “F2”, etc. But S.A.M.M.S. can’t handle more than two characters in that field, so if someone comes in 10th they just get “F”.

SWIMMERS NAME	AGE	....T E A M.....	PRELIM	PLC	FINAL	PLC
OLIVA, NICOLE	18	PC PEAK SWIMMING	1:53.97	2	1:50.54	F1
HARTMAN, BAILEY	14	PC CROW CANYON C	1:51.03	1	1:50.90	F2
UEKI, YUINA	20	** OSAKA UNIVERS	1:54.06	3	1:52.10	F3
TSUJIUCHI, KAHO	20	** OSAKA UNIVERS	1:55.59	7	1:53.02	F4
MATSUMOTO, NAMI	19	** OSAKA UNIVERS	1:54.18	4	1:53.28	F5
WINTER, TENAYA	15	PC UN (PC)	1:56.98	12	1:54.40	F6
KELLY, KYLA	16	PC UN (PC)	1:54.91	5	1:55.33	F7
BALBUENA, LUNA	15	PC PEAK SWIMMING	1:56.97	11	1:59.31	F8
O'CONNELL, MADISON	13	PC CROW CANYON C	1:55.90	8	2:01.50	F9
GRINBERG, ANNA	17	PC BURLINGAME AQ	1:55.11	6	2:33.93	F

Just “F”

S.A.M.M.S. also doesn’t know what to make of diving, and records diving results like swimming results, so “347.56” is written as “3:47.56” (`swim_parse` corrects this). S.A.M.M.S. also orders diving results backwards with the lowest (i.e. fastest) score/time listed first.

EVENT 45 WOMENS F.S. 1 DIVING EVENT 45

NATIONAL
SECTIONAL

SWIMMERS NAME	AGE	....T E A M.....	PRELIM	PLC	FINAL	PLC	..... S	P	L	I	T	S
TIENSUWAN, TIPPARAT	10	GRACE DAVIS			1:80.30	16						
PENA, MADISON	10	VINTAGE			2:11.45	15						
STONE, CASSIDY	9	BUHACH COLONY			2:21.35	14						
YO, KATARINA	10	ST. FRANCIS			2:23.55	13						
DAVENPORT, TYLER	9	ST. MARYS			2:46.60	12						
ANIXTER, NATALIE	9	DEL ORO			2:56.55	11						
OAKS, ELANA	10	OAK RIDGE			2:58.40	10						
WILSON, MOLLY	9	ST. FRANCIS			2:88.50	9						
ARBAUGH, ALEXA	9	NEVADA UNION			2:85.40	8						
UMEDA, SARAH	9	CARMONT			2:90.05	7						
HOBBS, LAUREN	10	FOLSOM			3:01.05	6						
VANCE, JELLY	10	GRANITE BAY			3:10.50	5						
GARCIA, TAYLOR	10	GRANITE BAY			3:20.60	4						
RAVERA, MADDIE	9	RIO AMERICANO			3:37.00	3						
STOUT, MELIA	9	GRANITE BAY			3:42.50	2						
MARRIOTT, LAUREN	10	PONDEROSA			3:45.90	1						

Maybe divers don’t mind being upside down?

S.A.M.M.S. was a commercial product. `SwimmeR` might have its issues sometimes, but at least it’s free!

- Under the hood changes to speed up `swim_parse`. We can test this with `benchmark` from the `rbenchmark` package because I’ve left the old `swim_parse` function in `SwimmeR`, renamed `swim_parse_old`. It’s not exported though so to actually access it you’ll need to call it as `SwimmeR:::swim_parse_old`.

```
benchmark("new" = {
  swim_parse(
    read_results(
      "http://www.pacswim.org/userfiles/meets/documents/1547/nvst-results.htm"
    )
  )
},
```

```
"old" = {
  SwimmeR:::swim_parse_old(
    read_results(
      "http://www.pacswim.org/userfiles/meets/documents/1547/nvst-results.htm"
    )
  )
},
replications = 5) %>%
  flextable_style()
```

test	replications	elapsed	relative	user.self	sys.self
new	5	33.62	1.000	30.67	0.06
old	5	76.72	2.282	74.16	0.09

As you can see, from the `relative` column above, the new version of `swim_parse` is a little over twice as fast as the old version (on my computer at least). You're all very welcome.

- Kinder and gentler all around. There have been several changes to make `swim_parse` more user friendly. First is decreased reliance on the `typo` and `replacement` arguments. They're still present, and still work, but they're hopefully now much less necessary.

By way of example in this meet there's a young man named "DU Fayet DE LA Tour, Vin", as seen here:

`swim_parse_old` struggles with this, and gets his name wrong.

```
df_old <-
  SwimmeR:::swim_parse_old(
    read_results(
      "http://www.pacswim.org/userfiles/meets/documents/1547/nvst-results.htm"
    )
  )

df_old %>%
  filter(str_detect(Name, "DU Fayet DE LA Tour") == TRUE) %>%
  select(-Points,-DQ,-Exhibition) %>%
  flextable_style()
```

Place	Name	Age	Team	Prelims_Time	Finals_Time	Event
13	DU Fayet DE LA Tour	14	NBA-PC	1:02.09	1:00.08	Boys 13-14 100 Yard Freestyle
12	DU Fayet DE LA Tour	14	NBA-PC	1:20.75	1:09.03	Boys 13-14 100 Yard Backstroke
14	DU Fayet DE LA Tour	14	NBA-PC	1:16.16	1:10.01	Boys 13-14 100 Yard Butterfly

Place	Name	Age	Team	Prelims_Time	Finals_Time	Event
16	DU Fayet DE LA Tour 14	NBA-PC		2:50.00	2:35.25	Boys 13-14 200 Yard IM

We can fix the problem in a hacky, and non-intuitive kind of way using `typo` and `replacement`, plus some after the parse changes. It works, but it's not terribly easy.

```
df_old_tr <-
  SwimmeR:::swim_parse_old(
    read_results(
      "http://www.pacswim.org/userfiles/meets/documents/1547/nvst-results.htm"
    ),
    typo = ", Vin ",
    replacement = " Vin  "
  ) %>%
  mutate(Name = str_replace(Name, " Vin", ", Vin"))

df_old_tr %>%
  filter(str_detect(Name, "DU Fayet DE LA Tour") == TRUE) %>%
  select(-Points, -DQ, -Exhibition) %>%
  flextable_style()
```

Place	Name	Age	Team	Prelims_Time	Finals_Time	Event
13	DU Fayet DE LA Tour, Vin	14	NBA-PC	1:02.09	1:00.08	Boys 13-14 100 Yard Freestyle
12	DU Fayet DE LA Tour, Vin	14	NBA-PC	1:20.75	1:09.03	Boys 13-14 100 Yard Backstroke
14	DU Fayet DE LA Tour, Vin	14	NBA-PC	1:16.16	1:10.01	Boys 13-14 100 Yard Butterfly
16	DU Fayet DE LA Tour, Vin	14	NBA-PC	2:50.00	2:35.25	Boys 13-14 200 Yard IM

Compare that to the much simpler approach available in swimmeR version 0.7.2. – no need for `typo` & `replacement`, and no need to after-parse fixes to Vin's name.

```
df_new <-
  swim_parse(
    read_results(
      "http://www.pacswim.org/userfiles/meets/documents/1547/nvst-results.htm"
    )
  )

df_new %>%
  filter(str_detect(Name, "DU Fayet DE LA Tour") == TRUE) %>%
```

```
  select(-Points,-DQ,-Exhibition) %>%
  flextable_style()
```

Place	Name	Age	Team	Prelims_Time	Finals_Time	Event
13	DU Fayet DE LA Tour, Vin	14	NBA-PC	1:02.09	1:00.08	Boys 13-14 100 Yard Freestyle
12	DU Fayet DE LA Tour, Vin	14	NBA-PC	1:20.75	1:09.03	Boys 13-14 100 Yard Backstroke
14	DU Fayet DE LA Tour, Vin	14	NBA-PC	1:16.16	1:10.01	Boys 13-14 100 Yard Butterfly
16	DU Fayet DE LA Tour, Vin	14	NBA-PC	2:50.00	2:35.25	Boys 13-14 200 Yard IM

This is not a promise that there will be no need for `typo` and `replacement`. Sometimes there really are typos that need replacing. Things should be easier now though.

Second – event names were also an issue in older versions of `SwimmeR`. If `swim_parse` didn't find any event names it liked it would throw an error and return nothing. Now, in `swimmeR` version 0.7.2 the event name definitions are much broader, and failing to find any event names will not result in an error.

These results, from the 2019 Australian Nationals won't read in previous version of `SwimmeR` because the events are named with "Metre" rather than "Meter". Now though, with `SwimmeR` version 0.7.2 we can see the Campbell sisters doing their thing.

```
df_aus <-
  swim_parse(
    read_results(
      "https://www.swimming.org.au/sites/default/files/assets/documents/full%20results_0.pdf
"
    )
  )

df_aus %>%
  head(2) %>%
  flextable_style()
```

Place	Name	Age	Team	Prelims_Time	Finals_Time	Points	DQ	Exhibition	Event
1	CAMPBELL, CATE	27	KNOX PYMBLE	24.33	24.05	953	0	0	Women 50 LC Metre Freestyle
2	CAMPBELL, BRONTE	25	KNOX PYMBLE	24.60	24.17	939	0	0	Women 50 LC Metre Freestyle

- Modifications to `swim_parse` to begin to handle older style Hy-Tek results, like these from 2002. Issues with inconstant treatment of splits within the results themselves remain, so let the user beware. These older results are still an active area of development.

```
df_2002 <-
  swim_parse(
    read_results(
      "https://cdn.swimswam.com/wp-content/uploads/2018/08/2002-Division-I-NCAA-Championships-Men-results1.pdf"
    )
  )

df_2002 %>%
  filter(str_detect(Event, "100 Yard BUTTERFLY")) %>%
  head(3) %>%
  flextable_style()
```

Place	Name	Age	Team	Prelims_Time	Finals_Time	Points	DQ	Exhibition	Event
1	CROCKER, IAN	SO	TEXAS	45.70	45.44	NA	0	0	Event 9 MEN's 100 Yard BUTTERFLY
2	MARSHALL, PETER	SO	STANFORD	46.39	46.48	NA	0	0	Event 9 MEN's 100 Yard BUTTERFLY
3	SCHOEMAN, ROLAND	SR	ARIZONA	46.57	46.50	NA	0	0	Event 9 MEN's 100 Yard BUTTERFLY

- Bug fixes, always bug fixes.

In Closing

Please do download the newest version of `SwimmeR` from wherever you get your packages....