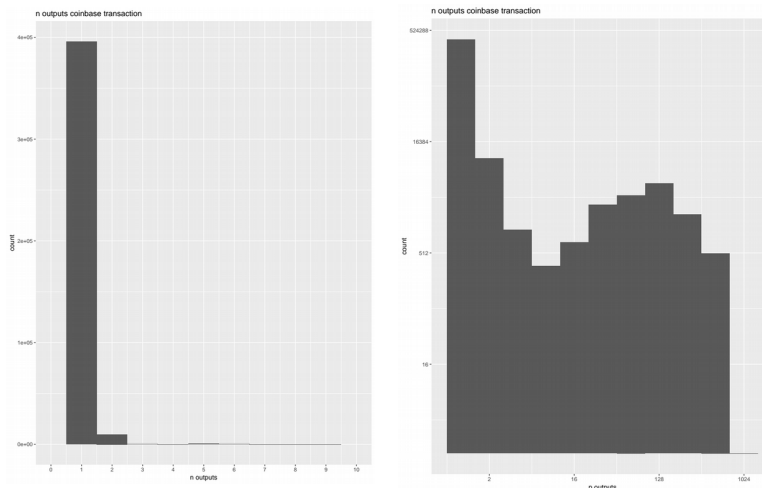


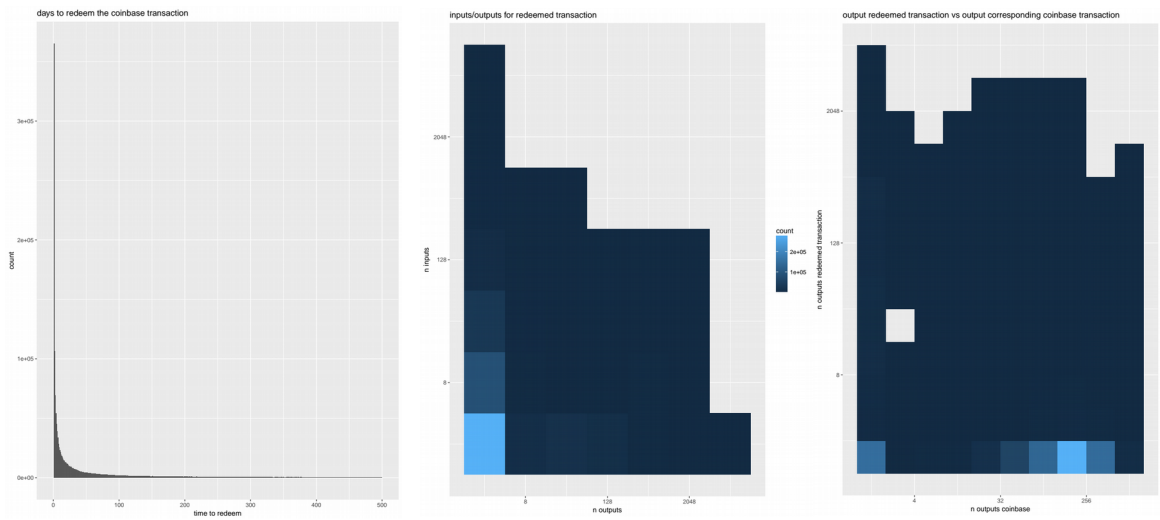
# Status Report July 29

Things I have done so far:

- python scripts (with the corresponding dependencies):
  - ctc-example.py
    - modified code to create a histogram with matplotlib to show the number of outputs of a coinbase transaction (the following plots are the new ones though). It is clearly visible that almost all coinbase transactions are sent to a single address.



- ctc-mining-redemption-stats.py
  - now creates 3 csv files with all the details need for plotting with ggplot2.
  - included the time of the block in the csv file which allowed to calculate the time to redeem.
- looked at the biggest mining pools
  - most of the biggest mining pools tend to payout the rewards to the miners once a day. This leads to the following assumption: The big mining pools mine 20+ blocks per day, but they only payout once. This means that the redeemed transaction has multiple inputs because of the way bitcoin transaction work.
  - Changes in bitcoin addresses of the mining pool seem to be quite rare (somewhere in the range of 6 months).
- R
  - ggplot2: created some basic plots of the *UH-bitcoin-heur\_2s\_420k* and *pickled-bitcoin-redeem\_tx*.
  - most coinbase transactions are redeemed within a day (binwidth=1). The input & outputs of the redeemed transaction are usually below 4.
  - The fact that most redeemed transaction have 4 or less outputs confuses me a bit. For a mining pool it would have to be way more than 4 outputs for a redeemed transactions (considering the huge amount of miners in a mining pool). The third plot below is not really relevant, because on my csv file with the redeemed transactions there are certain coinbase transactions which have a lot of outputs (example below). As a conclusion they are listed more than once if they have different redeemed transactions and this distorts the distribution in the plot.



	A	B	C	D	E	F	G	H	I
1	genesis_block_n	genesis_N_outputs	redeem_block_n	redeem_N_inputs	redeem_N_outputs	genesis_date	redeem_date	genesis_year	time to redeem
819985	278569	434	290354	11		2014-01-04 12:08:59	2014-03-13 08:49:02	2014	67.8611456333333
819986	278569	434	290471	38		2014-01-04 12:08:59	2014-03-14 03:47:24	2014	68.6516782407407
819987	278569	434	290493	110		2014-01-04 12:08:59	2014-03-14 07:09:30	2014	68.792025462963
819988	278569	434	291301	78		2014-01-04 12:08:59	2014-03-19 11:02:26	2014	73.9537847222222
819989	278569	434	291438	43		2014-01-04 12:08:59	2014-03-20 05:51:16	2014	74.7376967592593
819990	278569	434	291448	585		2014-01-04 12:08:59	2014-03-20 07:07:46	2014	74.7908217592593
819991	278569	434	291448	585		2014-01-04 12:08:59	2014-03-20 07:07:46	2014	74.7908217592593
819992	278569	434	292210	144		2014-01-04 12:08:59	2014-03-24 10:44:18	2014	78.94113021296296
819993	278569	434	292440	32		2014-01-04 12:08:59	2014-03-25 10:01:44	2014	80.2866319444444
819994	278569	434	292452	55		2014-01-04 12:08:59	2014-03-25 21:08:15	2014	80.3744907407407
819995	278569	434	292716	55		2014-01-04 12:08:59	2014-03-27 12:46:58	2014	82.0357173148148
819996	278569	434	292817	46		2014-01-04 12:08:59	2014-03-28 00:48:29	2014	82.5274355555556
819997	278569	434	292851	32		2014-01-04 12:08:59	2014-03-28 06:09:16	2014	82.7501467592593
819998	278569	434	294870	64		2014-01-04 12:08:59	2014-04-08 02:16:55	2014	84.588845525926
819999	278569	434	295056	246		2014-01-04 12:08:59	2014-04-10 06:12:07	2014	85.7521759259259
820000	278569	434	295065	195		2014-01-04 12:08:59	2014-04-10 07:47:12	2014	85.8102601651365
820001	278569	434	295138	35		2014-01-04 12:08:59	2014-04-10 17:09:27	2014	86.2086574074074
820002	278569	434	295176	148		2014-01-04 12:08:59	2014-04-11 01:14:13	2014	86.5453009259259
820003	278569	434	295363	80		2014-01-04 12:08:59	2014-04-12 04:17:04	2014	87.6722808925926
820004	278569	434	295629	114		2014-01-04 12:08:59	2014-04-13 15:02:55	2014	89.120787037037
820005	278569	434	295700	120		2014-01-04 12:08:59	2014-04-14 01:24:08	2014	89.5521875
820006	278569	434	296003	64		2014-01-04 12:08:59	2014-04-15 14:41:48	2014	101.1061229651365
820007	278569	434	296636	6		2014-01-04 12:08:59	2014-04-19 12:41:41	2014	105.022708333333
820008	278569	434	296791	23		2014-01-04 12:08:59	2014-04-20 09:58:42	2014	105.90952462963
820009	278569	434	296959	92		2014-01-04 12:08:59	2014-04-21 09:43:46	2014	106.899155092593
820010	278569	434	298076	13		2014-01-04 12:08:59	2014-04-28 03:56:18	2014	113.657858796296
820011	278569	434	298185	106		2014-01-04 12:08:59	2014-05-05 07:57:15	2014	120.825185185185
820012	278569	434	299309	9		2014-01-04 12:08:59	2014-05-06 05:54:07	2014	121.739675925926
820013	278569	434	299452	410		2014-01-04 12:08:59	2014-05-06 22:37:53	2014	122.438736111111
820014	278569	434	299480	187		2014-01-04 12:08:59	2014-05-07 02:13:07	2014	122.586203703704
820015	278569	434	299480	190		2014-01-04 12:08:59	2014-05-07 02:13:07	2014	122.586203703704
820016	278569	434	299483	144		2014-01-04 12:08:59	2014-05-07 02:50:25	2014	122.612166481481
820017	278569	434	299484	204		2014-01-04 12:08:59	2014-05-07 03:06:18	2014	122.623136574074
820018	278569	434	299485	183		2014-01-04 12:08:59	2014-05-07 03:03:00	2014	122.620944807407
820019	278569	434	299486	124		2014-01-04 12:08:59	2014-05-07 03:38:00	2014	122.643176174074
820020	278569	434	299487	110		2014-01-04 12:08:59	2014-05-07 03:28:38	2014	122.639645833333
820021	278569	434	299887	158		2014-01-04 12:08:59	2014-05-09 15:08:47	2014	125.124661111111
820022	278569	434	299888	91		2014-01-04 12:08:59	2014-05-09 15:03:03	2014	125.12087962963
820023	278569	434	300390	191		2014-01-04 12:08:59	2014-05-12 16:12:09	2014	128.168865740741
820024	278569	434	300390	191		2014-01-04 12:08:59	2014-05-12 16:12:09	2014	128.168865740741
820025	278569	434	300775	30		2014-01-04 12:08:59	2014-05-15 00:59:56	2014	130.535381944444
820026	278569	434	301246	89		2014-01-04 12:08:59	2014-05-17 15:45:24	2014	133.150289351852
820027	278569	434	301891	56		2014-01-04 12:08:59	2014-05-21 11:44:58	2014	136.883321759259
820028	278569	434	302361	131		2014-01-04 12:08:59	2014-05-24 05:52:46	2014	139.738738425926
820029	278569	434	302681	115		2014-01-04 12:08:59	2014-05-26 07:06:48	2014	141.790150462963
820030	278569	434	304273	29		2014-01-04 12:08:59	2014-06-04 23:34:46	2014	151.476238425926
820031	278569	434	304665	2		2014-01-04 12:08:59	2014-06-07 15:14:38	2014	154.128923611111
820032	278569	434	305027	128		2014-01-04 12:08:59	2014-06-10 01:33:00	2014	156.558344907407
820033	278569	434	305062	416		2014-01-04 12:08:59	2014-06-10 06:31:21	2014	156.765532407407

- LaTeX
  - downloaded textstudio and the uzh latex template in order to write my thesis (not sure if it's mandatory but I think it will be a nicer read)
  - downloaded and tested JabRef as a bib tool for textstudio.