

Using Python to improve the efficiency on generating report for the program team and the accounting team

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Background of this project

A non-for-profit organization operates programs for intellectual developmental disability patients. Every week the fiscal team receives the remittance data from Medicaid, and the team needs to analyze the data, and reports it to the bookkeeping team and the program operation team. Before using Python, the accounting team needs to spend about one hour to organize and analyze the data using Excel. Also, the report generated by Excel has limited insight to the program operation team to improve the billing process. In order to improve the efficiency and optimize the usage of remittance data, the accounting team decides to use Python script to generate remittance report.

To start, please enter the csv file name below.

Please enter the csv file name, and end with `[.csv]:121619.csv`

The following table shows the column names and their data types. However, not all the columns would be used by the accounting team for analyzing the remittance.

```
Out[235]: remit_filename      object
sequence_no      int64
batch_no         int64
remit_number     int64
invoice          int64
line_no          int64
account          float64
first_name       object
last_name        object
mi               object
patient_name     object
reference_no      int64
check_no         int64
company_code     float64
payor_id         float64
insurance_id      object
remit_code        object
remit_code_desc   object
remit_status      object
transaction_date  object
transaction_type  int64
amount           float64
tot_charge_paid   float64
tot_charge_deny   float64
tot_charge_pend   int64
claim_paid        int64
claim_deny        int64
claim_pend        int64
amount_paid       float64
amount_adj        float64
approved_amount   int64
coinsurance_amount int64
coinsurance_code  float64
deductible_amount int64
posted            object
proc_code         int64
date_of_service   object
date_of_service_thru object
provider_id       float64
locator_code      float64
medicaid_specialty_code float64
remit_receipt_date object
remit_posting_date object
claim_processor   object
remark_code        object
remark_code_desc   object
provider_code     float64
provider_name     float64
remark_code_2     float64
remark_code_3     float64
remark_code_4     float64
remark_code_5     float64
remark_code_all    object
office_location   float64
inv_line          object
remit_set_number   int64
```

check_amount	float64
tot_charge_adj	int64
auto_xover_payor	float64
auto_xover_payor_id	float64
date_of_service_yyyymm	int64
location_class	float64
service_name	float64
service_class	float64
pos_code	float64
accept_assignment	object
adjustment_amount	float64
adjustment_reason	float64
adjustment_ref_no	float64
adjustment_amount_2	float64
adjustment_reason_2	float64
adjustment_ref_no_2	float64
adjustment_amount_3	float64
adjustment_reason_3	float64
adjustment_ref_no_3	float64
adjustment_amount_4	float64
adjustment_reason_4	float64
adjustment_ref_no_4	float64
adjustment_amount_5	float64
adjustment_reason_5	float64
adjustment_ref_no_5	float64
adjustment_amount_6	float64
adjustment_reason_6	float64
adjustment_ref_no_6	float64
grpamt	float64
adj_group_code	object
group_reason_code	object
authorization_number	float64
ssno	float64
pat_responsibility_amount	int64
is_first_line	int64
dtype:	object

WEEKLY REMITTANCE REPORT - TO EXECUTIVES AND PROGRAM DIRECTORS

This section gives basic information of the weekly remittance summary of different programs, by showing the amounts that were claimed, paid, and denied, with denial percentage. It also shows the list of clients that were not fully paid, with corresponding claim adjustment reason codes (the remit codes) and the remark codes. The billing specialist can contact the insurance company and rebill the clients based on their codes.

BASIC INFO

12/16/2019 12:08:41 PM was the remit posting time.
Total line read is 3639

Total payment will be received of the week is \$ 2729211.27
Total denial amount is \$ 125835.92
Total claimed amount is \$ 2855047.19

PAYMENT ANALYSIS

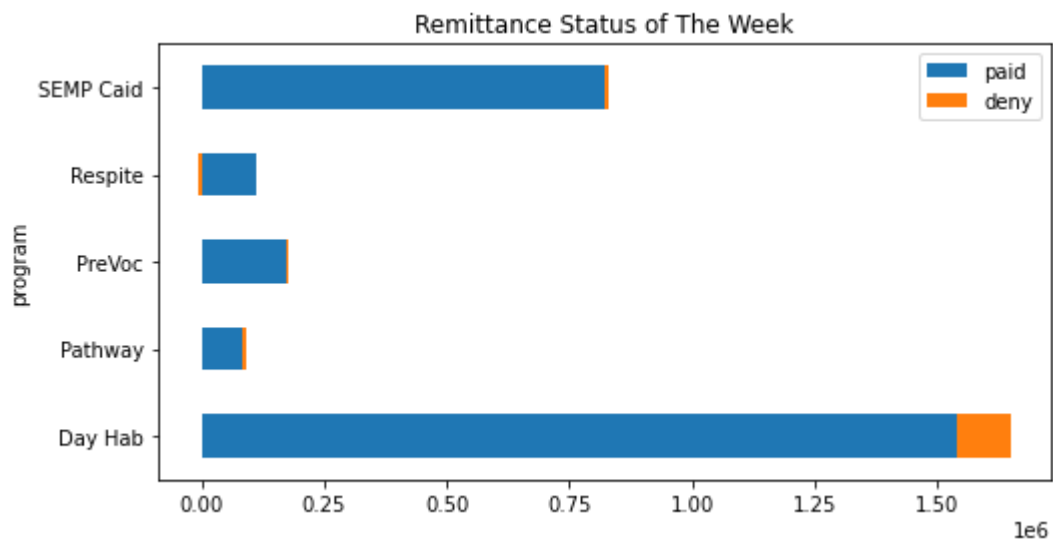
1.Summary

	claimed	paid	deny
program			
Day Hab	1648989.88	1539771.74	109218.14
Pathway	92020.60	83760.55	8260.06
PreVoc	178259.45	174179.96	4079.49
Respite	103995.33	110275.69	-6280.36
SEMP Caidd	831781.92	821223.34	10558.58

2.Detail

program	month	claimed	paid	deny	paid %
Day Hab	201901	15656.22	0.00	15656.22	0.00
	201902	14314.26	0.00	14314.26	0.00
	201903	11630.34	0.00	11630.34	0.00
	201904	18152.29	0.00	18152.29	0.00
	201905	14521.84	0.00	14521.84	0.00
	201909	7260.92	0.00	7260.92	0.00
	201910	1561100.71	1533418.44	27682.27	98.23
	201911	6252.20	6252.20	0.00	100.00

Out[239]: Text(0.5, 1.0, 'Remittance Status of The Week')



CLIENT ANALYSIS

Client that were denied (by programs):

			claimed	paid	deny	paid %
name	program	month				
A**m	Pathway	201910	10068.68	8561.06	1507.62	85.03
	PreVoc	201909	3941.63	0.00	3941.63	0.00
	Pathway	201909	4037.20	0.00	4037.20	0.00
	Day Hab	201909	4538.07	0.00	4538.07	0.00
Ahm*d	PreVoc	201910	3265.11	3127.25	137.86	95.78
B*kk*r	Day Hab	201903	11630.34	0.00	11630.34	0.00
		201902	14314.26	0.00	14314.26	0.00
		201905	14521.84	0.00	14521.84	0.00
		201901	15656.22	0.00	15656.22	0.00
		201904	18152.29	0.00	18152.29	0.00
B*ss**	Day Hab	201909	2722.84	0.00	2722.84	0.00
D****	SEMP Caidd	201910	1070.38	0.00	1070.38	0.00
Edm**d	SEMP Caidd	201910	2675.94	0.00	2675.94	0.00
	Day Hab	201910	7714.75	0.00	7714.75	0.00
F*tt*r	Pathway	201910	8852.80	8182.74	670.05	92.43
Gr*ss	Pathway	201910	8771.53	8268.99	502.54	94.27
H** *	Pathway	201910	7304.74	6456.34	848.40	87.14

REMARK AND REMIT CODE REPORT

1. REMARK CODE BY PROGRAMS:

			claimed	paid	deny
program	remark #	name			
Day Hab	MA39	Edm**d	7714.75	0.0	7714.75
	N30	B*kk*r	74274.95	0.0	74274.95
		Mck**ghtA*r**	19967.52	0.0	19967.52
PreVoc	N30	Ahm*d	137.86	0.0	137.86
SEMP Caidd	MA39	Edm**d	2675.94	0.0	2675.94
	N30	D****	1070.38	0.0	1070.38

2. REMIT CODE BY PROGRAMS:

			claimed	paid	deny
program	remit #	name			
Day Hab	16	Edm**d	7714.75	0.00	7714.75
	200	A**m	4538.07	0.00	4538.07
		B*ss**	2722.84	0.00	2722.84
	96	Mck**ghtA*r**	19967.52	0.00	19967.52
	B1	B*kk*r	74274.95	0.00	74274.95
Pathway	200	A**m	4037.20	0.00	4037.20
	15	A**	5004.00	2716.00	1507.00

References

Claim Adjustment Reason Codes:

B1 Non-covered visits.

15 Payment adjusted because the submitted authorization number is missing

16 Claim/service lacks information which is needed for adjudication.

24 Payment for charges adjusted. Charges are covered under a capitation agreement/managed care plan.

29 The time limit for filing has expired.

45 Charges exceed your contracted/ legislated fee arrangement.

96 Non-covered charge(s).

97 Payment is included in the allowance for another service/procedure.

200 no description found

Remark Codes:

MA39 Missing/incomplete/invalid gender.

M49 Missing/incomplete/invalid value code(s) or amount(s).

M62 Missing/incomplete/invalid treatment authorization code.

M86 Service denied because payment already made for same/similar procedure within set time frame.

N216 Patient is not enrolled in this portion of our benefit package.

N30 Patient ineligible for this service.

N340 Missing/incomplete/invalid subscriber birth date.

PAYMENTS SUMMARY BY DATE OF SERVICES

Showing payment summary by date of service? (yes/no): yes

program	date	paid
Day Hab	10/1/2019	67163.58
	10/10/2019	64440.84
	10/11/2019	78054.96
	10/14/2019	52641.65
	10/15/2019	59448.98
	10/16/2019	64440.74
	10/17/2019	64440.88
	10/18/2019	71701.80
	10/2/2019	69432.60
	10/21/2019	83046.91
	10/22/2019	54457.17
	10/23/2019	59448.84
	10/24/2019	52641.94
	10/25/2019	91669.28
	10/28/2019	78962.62
	10/29/2019	52541.22

PAYMENTS SUMMARY BY NAME THEN DATE OF SERVICES

Showing payment summary by name then date of service? (yes/no): yes

program	name	date	paid
Day Hab	A****	10/1/2019	907.61
		10/10/2019	1815.23
		10/11/2019	907.61
		10/15/2019	907.61
		10/16/2019	907.61
		10/17/2019	1815.23
		10/2/2019	1815.23
		10/21/2019	1815.23
		10/22/2019	907.61
		10/23/2019	907.61
		10/24/2019	1815.23
		10/25/2019	1815.23
		10/28/2019	1815.23
		10/3/2019	907.61
		10/30/2019	907.61
		10/31/2019	1815.23

WEEKLY REMITTANCE REPORT - TO ACCOUNTING AND BOOKKEEPING TEAM

This section gives basic information of the weekly remittance summary of different programs, by showing the amounts that were claimed, paid, and denied, with denial percentage. Since some of the programs have different cost centers, the fiscal team need to allocate the payments into different cost centers before sending the report to the bookkeeping team. On the report, the fiscals need to write down the descriptions for the bookkeepers to post on the general ledger system.

BASIC INFO

Total payment will be received of the week is \$ 2729211.27

PREVIEW DETAILS

		claimed	paid	deny	paid %
program	month				
Day Hab	201910	1561100.71	1533418.44	27682.27	98.23
	201911	6353.30	6353.30	0.00	100.00
Pathway	201910	87983.41	83760.55	4222.86	95.20
PreVoc	201910	174317.82	174179.96	137.86	99.92
Respite	201907	695.62	737.63	-42.01	106.04
	201908	2702.22	2865.41	-163.19	106.04
	201909	1257.47	1333.41	-75.94	106.04
	201910	2862.75	3035.63	-172.88	106.04
	201911	96477.27	102303.61	-5826.34	106.04
SEMP Caia	201910	825805.66	821223.34	4582.32	99.45

The preview details section shows the remittance payment received at this week. According to the billing circle, when some programs receive big payments at a certain month, the programs would need to allocate the payments to different cost centers. In this remittance, we received the Medicaid payments from 5 programs: Day Hab, Pathway, PreVoc, Respite, and SEMP(Caid). Among these programs, Day Hab, Pathway, and SEMP have multiple cost centers. Therefore, in the Python script below, we enable an option for payment allocation for these 3 programs. The payment allocation amount depends on the estimated revenue given by the program operation staff, and the revenue is booked before we received the actual payment.

NOTICE TO BOOKKEEPING TEAM

Payment allocation for monthly billing needed? (yes/no): yes

	program	fy	month	cc	description	paid
0	Day Hab	20	201910	Multi	Day Hab 20 P6 201910	1533418.44
1	Day Hab	20	201911	Multi	Day Hab 20 P6 201911	6353.30
2	Pathway	20	201910	Multi	Pathway 20 P6 201910	83760.55
3	PreVoc	20	201910	54022	PreVoc 20 P6 201910	174179.96
4	Respite	20	201907	54538	Respite 20 P6 201907	737.63
5	Respite	20	201908	54538	Respite 20 P6 201908	2865.41
6	Respite	20	201909	54538	Respite 20 P6 201909	1333.41
7	Respite	20	201910	54538	Respite 20 P6 201910	3035.63
8	Respite	20	201911	54538	Respite 20 P6 201911	102303.61
9	SEMP Caidd	20	201910	Multi	SEMP Caidd 20 P6 201910	821223.34

Allocation for day hab? (yes/no): yes

What is the month for this payment? yyyyymm: 201910

Payment allocates to 54007: 100000

Payment allocates to 54533: 200000

Payment allocates to 54534: 300000

Payment allocates to 54536: 400000

Payment allocates to 54535 (Default cost center): 533418.44

DayHab payments other than 201910 's billing should be posted under 54535 (if there are any).

Allocation for SEMP? (yes/no): yes

What is the month for this payment? yyyyymm: 201910

Payment allocates to 54532: 500000

Payment allocates to 54302 (Default cost center): 321223.34

SEMP payments other than 201910 's billing should be posted under 54302 (if there are any).

Allocation for Pathway? (yes/no): yes

What is the month for this payment? yyyyymm: 201910

Payment allocates to 54541: 60000

Payment allocates to 54539 (Default cost center): 23760.55

Pathway payments other than 201910 's billing should be posted under 54539 (if there are any).

The bookkeeping team would post the allocated payment to corresponding cost center with correct month and description. For those says "Multi" cost centers, the bookkeeper needs to read the notice below the table.

