



## CONTRIBUTION: MASTERCODE



- INPUTS PROVIDED (Attached zip has the following datasets):
  - **Articles - Master of items with name and item code for each stores**
  - **Stores - Store identifier and name**
  - **Article Hierarchy – Categorization**
  - **Customers - Customer name, telephone number by store**
  - **Bills - 3 months' bills by store**
- PROGRAMMING LANGUAGE USED:
  - **Python**
- CORE MECHANISM USED IN CODE:
  - **Pandas**
- PLATFORM USED FOR CODE:
  - **Windows (Platform Independent)**
  - **Jupyter notebook**
- CODE DESCRIPTION:
  - **In the "Retail guru" problem statement, I used Pandas module for analyzing and processing the data.**
  - **From the pandas module the dataset should be concatenated, sorted and merged as per flow of the program.**
  - **As per the problem statement. I find out the monthly one time large baskets.**
  - **And my results should be separate csv files for each month, so Totally 3 months**
  - **The output of the Problem statement should be the maximum amount of product that people bought in every month.**

## PROBLEM STATEMENT OUTPUT:

### 1.Sorted:

customer	store_id	sale_date	quantity	bill_no	article_ba	selling_pr	tax	discount	cost_price	article_id	Count	current_s	cost_price	name
381	4	01-06-18	1	628671	J13353-94	4.165	0.52	0	3.111	13353	1	4.9	3.913361	jolly rancher green apple lollipops rs.5
381	4	01-06-18	1	628671	K6054-427	4.1225	0.52	0	3.23323	6054	1	4.9	4.218608	kurkure puffcorn yummy cheese rs.5
381	4	02-06-18	2	629316	K23264-73	21.25	3.81	0	17.53584	23264	1	25	20.60603	kwaliti walls mango zap 57g
381	4	02-06-18	3	629315	K23264-73	21.25	3.8133	0	17.53584	23264	1	25	20.60603	kwaliti walls mango zap 57g
381	4	03-05-18	1	614764	M7066-16	51.9435	6.54	0	37.485	7066	1	65	44.91436	mambalam iyers tomato thokku 200g
381	4	03-05-18	1	615017	V16796-19	32.725	4.12	0	23.8	16796	1	38.4	28.0299	venkateswara potato chips 100gm
381	4	03-05-18	1	615020	M7095-74	51.9435	6.54	0	35.58525	7095	1	64.99	44.105	mambalam iyers gongura leaf rice mix 200g
381	4	03-06-18	1	629940	A17032-38	24.99	3.16	0	19.8696	17032	1	29.4	27.79951	act ii classic salted 90g
381	4	03-06-18	1	629940	A8086-865	24.99	3.16	0	19.86943	8086	1	29.4	26.96185	act ii southern spice 70g
381	4	03-06-18	1	629940	A9274-241	24.99	3.16	0	20.6975	9274	1	29.4	27.43814	act ii tandoori tadka 70g
381	4	03-06-18	1	629940	A9278-870	24.99	3.16	0	19.86986	9278	1	29.4	27.71516	act ii butter delite 70g
381	4	03-06-18	1	629940	B11083-61	11.475	0.64	0	7.8931	11083	1	13.5	9.673471	barley rice 250g
381	4	03-06-18	1	629940	B218-5132	56.066	3.14	0	49.589	218	1	66	57.6451	bru green label roast & ground coffee 200g
381	4	03-06-18	1	629940	G6361-545	212.415	38.12	0	162.843	6361	1	249.9	195.2029	godrej hit kills hidden cockroaches 625ml
381	4	03-06-18	1	629940	P23301-10	7.429	0.42	0	4.121055	23301	1	8.2	5.232453	pattai 20gm
381	4	03-06-18	1	629940	P4553-381	14.6625	0	0	10.625	4553	1	17.25	12.95011	pori 250gm
381	4	03-06-18	1	630217	R20497-53	81.6255	14.64	0	60.77075	20497	1	96.1	77.92717	rexona underarm odour protection powder dry roll on 50g
381	4	04-06-18	1	630519	P10491-68	16.15	0	0	15.8525	10491	1	19	18.33682	ponlait milk 500ml (green)
381	4	04-06-18	1	630519	S4780-557	140.25	7.86	0	117.7293	4780	1	197.4	165.0024	sugar 5kg
381	4	05-04-18	1	601684	K23264-34	21.25	3.82	0	17.53584	23264	1	25	20.60603	kwaliti walls mango zap 57g
381	4	05-05-18	1	615955	B218-9652	56.066	3.14	0	49.589	218	1	66	57.6451	bru green label roast & ground coffee 200g
381	4	05-05-18	1	615955	B11080-32	4.9215	0	0	2.55	11080	1	5	2.476512	black salt b 100g

### 2. 04<sup>TH</sup> MONTH LARGE BASKET:

sale_date	customer	store_id	quantity	bill_no	article_ba	selling_pr	tax	discount	cost_price	article_id	Count	current_selling	name	count
06-04-18	381	4	1	630519	P10491-68	16.15	0	0	15.8525	10491	1	19	ponlait milk 500ml (green)	2
06-04-18	381	4	1	630519	S4780-557	140.25	7.86	0	117.7293	4780	1	197.4	sugar 5kg	2
20-04-18	381	4	1	608833	K17892-73	80.75	14.5	0	66.623	17892	1	95	kwaliti walls creamy delight vanilla 700ml	2
24-04-18	381	4	1	610432	V16796-63	32.725	4.12	0	23.8	16796	1	38.4	venkateswara potato chips 100gm	2
05-04-18	383	4	1	615189	S14598-16	28.9	0	0	25.2875	14598	1	34	spencers special long loaf bread 500g	2
13-04-18	383	4	2	605207	B1994-709	15.3	2.75	0	10.34416	1994	1	18	britannia treat jim jam creme biscuits rs.20	2
13-04-18	383	4	1	605263	C1846-195	8.245	1.04	0	6.61793	1846	1	9.7	cheetos cheese balls rs.10	2
18-04-18	383	4	2	607589	B14530-93	11.475	2.06	0	7.6228	14530	1	14.4	britannia marie gold biscuits rs.15	2
18-04-18	383	4	1	607589	B1979-851	24.48	4.4	0	19.397	1979	1	28.8	britannia treat jim jam creme biscuits rs.25	2
19-04-18	383	4	1	608519	M793-508	19.788	2.5	0	16.54372	793	2	23.28	maggi cheese macaroni paztta 70g	2
19-04-18	383	4	1	608519	P17085-48	11.815	1.48	0	6.375	17085	1	13.9	pasta elbow 200g	2
19-04-18	383	4	1	608146	C8333-664	8.245	1.48	0	6.545	8333	1	9.7	colgate strong teeth toothpaste 23g rs.10	2
19-04-18	383	4	1	608519	P19396-93	20.6125	3.7	0	15.59954	19396	1	24.3	parle hide&seek choco rolls biscuits 75g	2
19-04-18	383	4	1	608146	C449-6611	51.119	9.18	0	38.4285	449	1	60.2	colgate strong teeth toothpaste 150g	2
21-04-18	383	4	2	609014	P149-914	24.735	4.44	0	18.71862	149	1	29.1	parle hide&seek chocolate chip cookies 120g	2
21-04-18	383	4	2	609362	R18248-48	8.075	1.45	0	5.7715	18248	1	9.7	richeese nabati cheese wafer rs.10	2
21-04-18	383	4	1	609082	M783-102	70.907	8.94	0	59.28393	783	2	83.5	maggi masala noodles 560g	2
23-04-18	383	4	1	609965	I1990-922	314.5	39.64	0	251.3705	1990	1	419.1	indulekha bringha oil 100ml	2
25-04-18	383	4	1	611011	V25271-16	69.258	8.72	0	51	25271	2	75.6	veeba eggless mayonnaise 275g	2
27-04-18	383	4	1	611908	P6478-345	14.0165	2.52	0	8.7465	6478	1	16.5	pepsodent triple clean medium tb	2
16-04-18	388	4	1	606812	B20994-54	12.24	2.2	0	9.70275	20994	1	14.4	britannia milk bikis biscuits rs.15	2
16-04-18	388	4	1	606812	B2013-527	32.64	5.86	0	25.874	2013	1	38.4	britannia milk bikis milky sandwich rs.40	2

### 3. 05<sup>TH</sup> MONTH LARGE BASKET:

sale_date	customer	store_id	quantity	bill_no	article_ba	selling_pr	tax	discount	cost_price	article_id	Count	current_s	name	count
05-05-18	381	4	1	615955	B404-2940	8.16	1.46	0	6.463145	404	1	9.6	britannia 50-50 maska chaska biscuits rs.10	3
15-05-18	382	4	2	620830	R9959-553	81.6255	14.65	0	57.62754	9959	1	96.1	red bull energy drink 250ml	1
25-05-18	382	4	1	625508	E23292-64	31.1355	1.74	0	23.039	23292	1	34.88	elaichi 20gm	1
25-05-18	382	4	1	625508	A4178-626	31.365	0	0	22.1	4178	1	39.78	atta 1kg	1
25-05-18	382	4	5	625508	B2001-118	4.08	0.732	0	3.172795	2001	1	4.8	britannia marie gold biscuits rs.5	1
25-05-18	382	4	5	625508	B406-1948	4.08	0.732	0	3.23153	406	1	4.8	britannia milk bikis biscuits rs.5	1
25-05-18	382	4	4	625508	S1695-649	99.0675	5.55	0	89.8535	1695	1	115.5	svs refined ground oil 1l	1
25-05-18	382	4	3	625508	S4778-638	30.1495	1.6867	0	23.54092	4778	1	39.88	sugar 1kg	1
25-05-18	382	4	1	625508	C3994-222	215.764	12.08	0	174.25	3994	1	253.84	cashew 320 250g	1
25-05-18	382	4	1	625508	C467-1675	16.15	2.9	0	10.18691	467	1	19	colgate kids 2+ gentle soft tb	1
25-05-18	382	4	1	625508	D10273-54	9.945	0.56	0	7.769	10273	1	11.7	dalda vanaspati 100ml rs.13	1
25-05-18	382	4	1	625508	M10853-6	13.804	0	0	10.5995	10853	1	16.6	maida 500g	1
25-05-18	382	4	1	625577	C5102-606	222.615	39.96	0	176.8085	5102	1	261.9	clear complete active care shampoo 375ml	1
25-05-18	382	4	1	625577	I1990-857	356.184	44.9	0	251.3583	1990	1	419.1	indulekha bringha oil 100ml	1
25-05-18	382	4	6	625508	S308-7234	9.792	1.7567	0	7.64082	308	1	11.6	sabena 450g	1
29-05-18	382	4	1	627364	M22979-9	24.99	1.4	0	21.012	22979	1	29.4	milky mist stirred fruit yoghurt blueberry 100g	1
29-05-18	382	4	1	627364	N5034-338	147.5855	26.48	0	118.2945	5034	1	173.7	nestle cerelac wheat apple stage 1 300g	1
29-05-18	382	4	1	627364	C25047-62	79.9425	14.34	0	48.63913	25047	1	94.1	colgate sensitive toothbrush 4pcs	1
29-05-18	382	4	1	627364	C455-6615	65.1355	11.68	0	48.96213	455	1	76.7	colgate spider-man toothpaste 80g	1
29-05-18	382	4	1	627364	G1118-864	28.8575	5.18	0	19.0825	1118	1	34	glucon-d nimbu pani flavour 100g	1
29-05-18	382	4	1	627364	M10080-2	93.296	11.76	0	79.815	10080	2	109.8	milky mist cheese cubes 10 cubes 200g	1
29-05-18	382	4	1	627364	M18145-6	11.662	0	0	10.03	18145	1	11.8	milky mist curd 100g	1

### 4. 06<sup>TH</sup> MONTH LARGE BASKET:

sale_date	customer	store_id	quantity	bill_no	article_ba	selling_pr	tax	discount	cost_price	article_id	current_s	name	count
22-06-18	381	4	1	639225	A4542-287	30.005	0	0	20.5105	4542	35.3	aval lays 500gm	2
21-06-18	382	4	1	639103	M999-688	48.96	8.78	0	38.0205	999	57.6	mysore sandal soap 125g	2
21-06-18	382	4	1	639103	J4735-295	44.0385	0	0	35.9805	4735	54.3	jaggery white 1kg	2
21-06-18	382	4	1	639103	V4080-362	21.0885	1.18	0	13.7105	4080	24.81	vellari vithai 50gm	2
15-06-18	383	4	1	635815	M10495-6	29.75	0	0	27.625	10495	35	modern special bread family pack 600g	2
15-06-18	383	4	3	635815	M793-568	19.788	2.4933	0	16.54398	793	23.28	maggi cheese macaroni pazzta 70g	2
15-06-18	383	4	1	635768	M2196-18	19.788	2.5	0	16.54398	2196	23.3	maggi tomato twist pazzta 64g	2
20-06-18	383	4	1	638685	M6105-74	169.15	30.36	0	299.8772	6105	193.1	mugi ultra liquid detergent 1l	2
21-06-18	383	4	10	638970	B1994-824	15.3	2.746	0	10.3462	1994	18	britannia treat jim jam creme biscuits rs.20	2
21-06-18	383	4	4	638970	P149-9955	24.735	4.44	0	18.5232	149	29.1	parle hide&seek chocolate chip cookies 120g	2
21-06-18	383	4	2	638970	P996-9960	20.655	3.71	0	15.46295	996	24.3	parle hide&seek fab orange biscuits 100g	2
21-06-18	383	4	2	638970	P148-7591	20.6125	3.7	0	15.60031	148	24.3	parle hide&seek fab chocolate biscuits 100g	2
23-06-18	383	4	2	639949	P21543-85	9.996	0	0	6.8	21543	11.76	patanjali iodized namak 1kg	2
04-06-18	385	4	2	602107	P10491-11	16.15	0	0	15.8525	10491	19	ponlait milk 500ml (green)	10
15-06-18	388	4	1	635953	A10510-18	26.35	0	0	22.1	10510	31	auror star idly maavu 1kg	2
15-06-18	388	4	1	635953	K741-1508	8.245	1.04	0	6.617845	741	9.7	kurkure puffcorn 32g	2
15-06-18	388	4	1	635953	P127-4675	32.98	5.92	0	19.873	127	38.8	pepsodent sensitive extra soft tb	2
15-06-18	388	4	1	635953	R24909-88	4.165	0.74	0	2.852685	24909	4.9	richoco nabati chocolate wafer 16g	2
25-06-18	388	4	1	640811	P987-3033	4.165	0.76	0	3.1416	987	4.9	parle parle-g biscuits rs.5	2
04-06-18	391	4	1	602077	C1028-925	73.44	13.18	0	57.885	1028	86.4	cadbury temptations rum raisins chocolate 72g	1
04-06-18	391	4	1	602077	K17966-15	45.9	8.24	0	38.91623	17966	54	kwaliti walls cornetto disc black forest 120ml	1
04-06-18	391	4	1	602077	W1382-17	8.245	1.48	0	5.661	1382	9.7	wrigleys orbit s/f sweet mint chewing gum rs.10	1