

# Omnichannel Customer Journey Analytics

From Clicks to Conversions

A holistic SQL-based framework to map campaigns, channels, and customer behaviour into actionable revenue insights

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# Problem: The Multi- Channel Challenge

Today's customers navigate complex paths to purchase, touching multiple channels before converting.

## Scattered Data

Ad metrics, customer insights, and financials live in separate systems

## Siloed Reporting

Traditional reports miss the complete customer story

## Blind Optimisation

Marketing spend decisions lack end-to-end visibility



# The Cost of Fragmentation

## Inefficient Spend

Without full journey visibility, budgets flow to vanity metrics rather than revenue-driving channels

## Missed Opportunities

Drop-off points remain invisible, preventing targeted interventions that could recover conversions

## Strategic Missteps

Campaign decisions based on incomplete data lead to suboptimal customer acquisition and retention

# Objective: Unified Journey Analytics

Build an integrated analytical framework that connects every customer touchpoint into a single, actionable view.



## SQL-Based Foundation

Robust data architecture connecting all customer interaction points



## Complete Funnel View

From impressions to final purchase, track every step of the journey



## Multi-Dimensional Insights

Campaign, channel, device, and geographic performance in one view

# What's Inside? Multi-Dimensional Analysis

## Campaign Performance

Revenue attribution by campaign type, creative, and messaging strategy

## Device Behaviour

Journey patterns across mobile, tablet, and desktop experiences

## Channel Effectiveness

Conversion rates across paid search, social, email, and organic channels

## Geographic Insights

City-level performance to inform localisation and targeting strategies

# SESSIONS TABLE

7 • `select * from sessions;`

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	session_id	customer_id	start_time	end_time	session_month	device_type	channel_source	campaign_id	page_views
▶	S300000	C103934	11/9/2023 13:04	11/9/2023 13:29	11	mobile	Facebook Ads	CAM2003	6
	S300001	C102390	12/8/2023 18:32	12/8/2023 20:34	12	desktop	Referral	CAM2014	5
	S300002	C103857	12/14/2023 12:51	12/14/2023 15:41	12	mobile	Email	CAM2033	6
	S300003	C103174	5/25/2023 02:09	5/25/2023 05:56	5	desktop	Facebook Ads	CAM2048	1
	S300004	C103651	2/23/2023 03:59	2/23/2023 05:07	2	desktop	Organic	CAM2056	2
	S300005	C101853	10/26/2023 03:00	10/26/2023 05:25	10	mobile	Google Ads	CAM2007	4
	S300006	C100702	5/14/2023 12:22	5/14/2023 15:49	5	desktop	Email	CAM2069	5
	S300007	C101863	1/24/2023 16:24	1/24/2023 20:00	1	tablet	Referral	CAM2049	4
	S300008	C104386	12/3/2023 16:02	12/3/2023 20:02	12	tablet	Facebook Ads	CAM2060	5
	S300009	C103901	8/18/2023 04:38	8/18/2023 04:59	8	tablet	Google Ads	CAM2050	6
	S300010	C104113	11/18/2023 12:32	11/18/2023 16:23	11	tablet	Email	CAM2066	4
	S300011	C101207	10/3/2023 21:40	10/4/2023 00:54	10	mobile	Facebook Ads	CAM2057	6
	S300012	C101735	4/24/2023 07:26	4/24/2023 07:59	4	desktop	Google Ads	CAM2005	6
	S300013	C103566	9/1/2023 12:04	9/1/2023 15:35	9	mobile	Email	CAM2080	5
	S300014	C102112	8/22/2023 01:35	8/22/2023 05:29	8	mobile	Google Ads	CAM2093	2
	S300015	C103179	6/4/2023 07:37	6/4/2023 09:59	6	desktop	Email	CAM2041	2
	S300016	C103753	8/11/2023 04:59	8/11/2023 08:21	8	tablet	Email	CAM2089	4
	S300017	C104280	2/13/2023 16:45	2/13/2023 18:32	2	mobile	Email	CAM2019	3
	S300018	C104816	10/22/2023 12:35	10/22/2023 13:01	10	tablet	Google Ads	CAM2013	2
	S300019	C102343	12/8/2023 19:27	12/8/2023 20:56	12	desktop	Referral	CAM2052	6
	S300020	C103977	8/25/2023 11:56	8/25/2023 13:58	8	mobile	Organic	CAM2004	3
	S300021	C103301	6/18/2023 17:43	6/18/2023 20:22	6	tablet	Referral	CAM2077	4
	S300022	C100317	10/13/2023 04:49	10/13/2023 08:37	10	tablet	Facebook Ads	CAM2042	2
	S300023	C100403	12/24/2023 14:48	12/24/2023 15:57	12	mobile	Organic	CAM2047	3
	S300024	C102482	7/29/2023 21:27	7/29/2023 22:39	7	tablet	Google Ads	CAM2062	4
	S300025	C101867	8/29/2023 16:51	8/29/2023 18:08	8	desktop	Organic	CAM2095	2
	S300026	C102207	10/30/2023 08:47	10/30/2023 11:22	10	mobile	Facebook Ads	CAM2082	4
	S300027	C103618	5/17/2023 08:41	5/17/2023 12:35	5	tablet	Referral	CAM2052	6
	S300028	C104231	9/1/2023 14:51	9/1/2023 18:22	9	tablet	Facebook Ads	CAM2007	5
	S300029	C100537	9/14/2023 12:37	9/14/2023 15:39	9	desktop	Facebook Ads	CAM2064	4
	S300030	C104294	1/12/2023 05:48	1/12/2023 06:33	1	mobile	Google Ads	CAM2024	3
	S300031	C102043	2/19/2023 03:39	2/19/2023 05:36	2	desktop	Facebook Ads	CAM2006	4
	S300032	C102244	11/16/2023 19:38	11/16/2023 21:37	11	desktop	Google Ads	CAM2064	3

# TRANSACTIONS TABLE

7 • `select * from transactions;`

8

	transaction_id	customer_id	session_id	transaction_date	transaction_month	payment_method	amount	currency	product_category	discount_applied
▶	T400000	C101452	S304390	7/3/2023 09:44	7	UPI	2343.21	INR	Sports	0
	T400001	C104420	S300626	4/11/2023 12:05	4	Net Banking	9844.47	INR	Home	0
	T400002	C103265	S301841	10/3/2023 05:02	10	PayPal	11432.55	INR	Home	0
	T400003	C101065	S302683	11/3/2023 23:42	11	UPI	5784.92	INR	Fashion	0
	T400004	C102076	S301502	6/28/2023 03:54	6	UPI	2692.31	INR	Home	0
	T400005	C102601	S301097	11/2/2023 15:34	11	PayPal	30827.45	INR	Electronics	1
	T400006	C101997	S300151	6/17/2023 23:18	6	Net Banking	3221.02	INR	Sports	0
	T400007	C103443	S302604	11/1/2023 01:35	11	Credit Card	2607.79	INR	Home	0
	T400008	C101770	S304122	7/20/2023 19:25	7	Net Banking	2058.46	INR	Beauty	0
	T400009	C100264	S304998	12/8/2023 14:39	12	Net Banking	1360.43	INR	Beauty	1
	T400010	C103924	S300204	8/18/2023 10:54	8	PayPal	23316.14	INR	Electronics	0
	T400011	C100780	S302668	11/10/2023 08:13	11	UPI	931.82	INR	Fashion	1
	T400012	C102545	S301523	10/31/2023 09:02	10	PayPal	14516.96	INR	Sports	0
	T400013	C100409	S300576	11/15/2023 17:52	11	UPI	787.66	INR	Fashion	0
	T400014	C103021	S301760	7/15/2023 08:42	7	PayPal	3684.45	INR	Home	1
	T400015	C100731	S300501	1/4/2023 04:53	1	UPI	920.97	INR	Beauty	0
	T400016	C100726	S302594	8/15/2023 09:26	8	UPI	42755.08	INR	Electronics	0
	T400017	C101206	S304990	8/27/2023 11:57	8	UPI	6941.83	INR	Sports	1
	T400018	C103767	S302144	10/4/2023 02:58	10	Credit Card	5406.23	INR	Fashion	0
	T400019	C100295	S304719	4/17/2023 21:57	4	UPI	10513.03	INR	Sports	0
	T400020	C103714	S303697	5/21/2023 23:15	5	Credit Card	2036.74	INR	Sports	1
	T400021	C102409	S300140	3/11/2023 00:21	3	UPI	6496.97	INR	Sports	1
	T400022	C102544	S303025	12/16/2023 04:02	12	Net Banking	2756.19	INR	Fashion	0
	T400023	C101096	S304286	9/10/2023 01:16	9	Credit Card	4779.63	INR	Home	0
	T400024	C101406	S304892	3/8/2023 09:05	3	UPI	1358.92	INR	Beauty	0
	T400025	C100896	S300727	9/20/2023 05:24	9	PayPal	2379.96	INR	Sports	0
	T400026	C102163	S303620	11/5/2023 18:50	11	PayPal	976.06	INR	Sports	0
	T400027	C102695	S303981	9/5/2023 21:48	9	PayPal	22947.89	INR	Electronics	0
	T400028	C100526	S303446	2/2/2023 12:34	2	Credit Card	8259.13	INR	Sports	0
	T400029	C103154	S300939	4/18/2023 23:19	4	PayPal	30210.77	INR	Electronics	0
	T400030	C102166	S301621	7/17/2023 03:18	7	UPI	27223.67	INR	Electronics	1
	T400031	C104211	S300190	4/6/2023 14:34	4	UPI	2623.63	INR	Fashion	0
	T400032	C104452	S304443	12/28/2023 19:45	12	PayPal	8577.65	INR	Sports	0

# ADS TABLE

7 • select \* from ads;

8

	campaign_id	campaign_name	ad_group	campaign_date	campaign_month	platform	impressions	clicks	ad_spend	cpc	ctr
▶	CAM2000	Holiday Deals Pro	Home	1/22/2023	1	Instagram	220189	8455	13020.7	1.54	0.0384
	CAM2001	New Arrivals 2023	Beauty	10/2/2023	10	Facebook	300812	7520	2406.4	0.32	0.025
	CAM2002	Back to School Offer	Sports	5/15/2023	5	Programmatic	305092	9763	4002.83	0.41	0.032
	CAM2003	Home Refresh Series	Fashion	5/25/2023	5	Facebook	85214	3213	2216.97	0.69	0.0377
	CAM2004	Weekend Offer 2023	Beauty	5/11/2023	5	YouTube	281532	11965	9452.35	0.79	0.0425
	CAM2005	Weekend Offer Pro	Beauty	4/13/2023	4	Programmatic	433409	34629	85533.63	2.47	0.0799
	CAM2006	Festive Fiesta XL	Sports	7/18/2023	7	Instagram	63266	4505	9325.35	2.07	0.0712
	CAM2007	Clearance Sale XL	Home	3/6/2023	3	Instagram	26786	1894	4015.28	2.12	0.0707
	CAM2008	New Arrivals Series	Beauty	12/14/2023	12	Programmatic	212815	17600	30800	1.75	0.0827
	CAM2009	Summer Specials Offer	Luxury	7/17/2023	7	Google	364039	19221	17106.69	0.89	0.0528
	CAM2010	Clearance Sale 2023	Fashion	1/18/2023	1	YouTube	317008	26946	49311.18	1.83	0.085
	CAM2011	End of Season XL	Fashion	3/11/2023	3	Google	313077	23168	54213.12	2.34	0.074
	CAM2012	Gadget Gala XL	Fashion	5/5/2023	5	Facebook	434861	27918	60861.24	2.18	0.0642
	CAM2013	Student Offer Series	Electronics	11/17/2023	11	Google	41880	4745	5931.25	1.25	0.1133
	CAM2014	Fitness Frenzy Series	Beauty	7/14/2023	7	Google	452791	6384	11682.72	1.83	0.0141
	CAM2015	New Arrivals Offer	Home	1/18/2023	1	YouTube	286206	30510	54307.8	1.78	0.1066
	CAM2016	Festive Fiesta XL	Electronics	10/28/2023	10	Instagram	211796	16986	13079.22	0.77	0.0802
	CAM2017	Mega Discount 2023	Home	6/27/2023	6	Google	79457	9106	22309.7	2.45	0.1146
	CAM2018	End of Season Offer	Electronics	8/7/2023	8	Instagram	468698	18232	1276.24	0.07	0.0389
	CAM2019	Beauty Bash Offer	Sports	5/24/2023	5	Programmatic	250365	28767	71629.83	2.49	0.1149
	CAM2020	Luxury Edit Offer	Luxury	12/16/2023	12	Programmatic	112889	12576	30433.92	2.42	0.1114
	CAM2021	Flash Sale Offer	Beauty	12/29/2023	12	YouTube	362531	33643	50464.5	1.5	0.0928
	CAM2022	Back to School Offer	Home	5/15/2023	5	Google	296371	32186	63728.28	1.98	0.1086
	CAM2023	Mega Discount 2023	Luxury	5/27/2023	5	Instagram	302117	31330	24750.7	0.79	0.1037
	CAM2024	Summer Specials Offer	Home	4/3/2023	4	YouTube	402595	38367	40669.02	1.06	0.0953
	CAM2025	Luxury Edit 2023	Fashion	10/4/2023	10	Instagram	82684	3721	2679.12	0.72	0.045
	CAM2026	Festive Fiesta 2023	Fashion	12/15/2023	12	Programmatic	178548	20140	22154	1.1	0.1128
	CAM2027	Student Offer Series	Sports	10/18/2023	10	Google	294765	21695	16054.3	0.74	0.0736
	CAM2028	Fitness Frenzy 2023	Home	2/21/2023	2	YouTube	332266	4253	3359.87	0.79	0.0128
	CAM2029	Festive Fiesta Pro	Home	1/25/2023	1	YouTube	175142	11682	15186.6	1.3	0.0667
	CAM2030	Winter Warmers Offer	Electronics	4/12/2023	4	Instagram	114756	7126	11900.42	1.67	0.0621
	CAM2031	Midnight Madness Series	Electronics	6/25/2023	6	Instagram	217473	10112	14257.92	1.41	0.0465

# CUSTOMERS TABLE

7 • `select * from customers;`

8

	customer_id	name	age_band	gender	location	device_type	signup_date	signup_month	channel_source
▶	C100000	User_0	25-34	Male	Kolkata	mobile	9/6/2023 07:53	9	Organic
	C100001	User_1	55+	Female	Bengaluru	mobile	2/13/2023 05:40	2	Referral
	C100002	User_2	35-44	Female	Mumbai	mobile	1/10/2023 17:07	1	Email
	C100003	User_3	25-34	Male	Hyderabad	mobile	10/15/2023 23:45	10	Google Ads
	C100004	User_4	18-24	Female	Chennai	mobile	4/17/2023 19:27	4	Organic
	C100005	User_5	18-24	Male	Delhi	mobile	4/6/2023 02:33	4	Google Ads
	C100006	User_6	18-24	Female	Delhi	mobile	3/28/2023 16:28	3	Organic
	C100007	User_7	45-54	Female	Delhi	mobile	2/24/2023 04:35	2	Google Ads
	C100008	User_8	35-44	Male	Kolkata	desktop	10/14/2023 00:24	10	Email
	C100009	User_9	35-44	Male	Chennai	desktop	2/9/2023 19:19	2	Organic
	C100010	User_10	18-24	Male	Pune	tablet	9/20/2023 19:17	9	Referral
	C100011	User_11	55+	Female	Chennai	desktop	10/15/2023 15:31	10	Email
	C100012	User_12	45-54	Female	Pune	mobile	12/13/2023 11:42	12	Google Ads
	C100013	User_13	18-24	Female	Delhi	desktop	7/31/2023 19:11	7	Organic
	C100014	User_14	18-24	Male	Bengaluru	mobile	2/3/2023 18:19	2	Referral
	C100015	User_15	18-24	Male	Bengaluru	desktop	8/18/2023 07:47	8	Organic
	C100016	User_16	25-34	Male	Pune	mobile	6/13/2023 20:35	6	Organic
	C100017	User_17	25-34	Male	Delhi	desktop	1/13/2023 08:14	1	Facebook Ads
	C100018	User_18	25-34	Female	Chennai	mobile	1/12/2023 13:43	1	Organic
	C100019	User_19	25-34	Female	Bengaluru	mobile	2/6/2023 09:18	2	Facebook Ads
	C100020	User_20	35-44	Female	Pune	mobile	3/26/2023 21:51	3	Organic
	C100021	User_21	18-24	Male	Chennai	mobile	4/1/2023 08:33	4	Google Ads
	C100022	User_22	25-34	Other	Delhi	tablet	7/16/2023 06:15	7	Google Ads
	C100023	User_23	25-34	Female	Mumbai	mobile	8/22/2023 19:13	8	Google Ads
	C100024	User_24	25-34	Other	Delhi	mobile	1/11/2023 07:19	1	Google Ads
	C100025	User_25	35-44	Female	Kolkata	desktop	8/6/2023 23:10	8	Organic
	C100026	User_26	18-24	Male	Delhi	mobile	3/19/2023 05:18	3	Google Ads
	C100027	User_27	25-34	Male	Chennai	mobile	10/6/2023 01:47	10	Google Ads
	C100028	User_28	25-34	Female	Chennai	mobile	9/10/2023 09:21	9	Organic
	C100029	User_29	18-24	Male	Hyderabad	mobile	9/30/2023 08:49	9	Organic

# FUNNEL DIRTY TABLE

result Grid | Filter Rows:  | Export: | Wrap Cell Content: | Fetch rows:

i>funnel_event_id	session_id	stage	timestamp	funnel_month	status	device_type
F500000	S300081	Impression	6/9/2023 04:12	6	completed	mobble
F500001	S300160	Add to Cart	5/23/2023 19:57	5	completed	_ mobile
F500002	S302105	click	7/27/2023 12:05	7	completed	tablet
F500003	S304058	Click	12/13/2023 16:23	12	completed	mobile
F500004	S303125	add to cart	7/4/2023 09:13	7	completed	tablet
F500005	S304564	Checkout	9/13/2023 23:53	9	completed	desktop
F500006	S303683	Purchase	2/12/2023 20:08	2	completed	mobble
F500007	S301860	add to cart	7/28/2023 01:36	7	completed	laptop
F500008	S303678	Click	11/9/2023 02:30	11	completed	desktop
F500009	S303879	Impression	5/8/2023 15:20	5	completed	mobile
F500010	S304157	Purchase	10/15/2023 11:36	10	dropped	desktop
F500011	S302096	Impression	11/11/2023 23:38	11	completed	tablet
F500012	S301221	Checkout	10/29/2023 23:05	10	completed	tablet
F500013	S301529	Checkout	8/19/2023 09:31	8	completed	mobile
F500014	S301036	Add to Cart	10/8/2023 17:14	10	completed	mobile
F500015	S301921	add to cart	4/27/2023 15:11	4	completed	mobble
F500016	S301445	Checkout	5/25/2023 09:36	5	completed	laptop
F500017	S300009	impression	8/18/2023 04:54	8	completed	_ mobile
F500018	S304180	Add to C...	11/1/2023 07:47	11	completed	mobble
F500019	S300384	purchase	6/8/2023 02:42	6	completed	laptop
F500020	S300196	Checkout	11/24/2023 18:23	11	completed	laptop
F500021	S302189	click	2/17/2023 09:10	2	completed	laptop
F500022	S301699	click	5/15/2023 00:15	5	completed	desktop
F500023	S303792	add to cart	12/21/2023 04:00	12	completed	desktop
F500024	S300943	Purchase	12/29/2023 01:01	12	completed	mobile
F500025	S301970	Impression	12/1/2023 03:09	12	completed	desktop
F500026	S301873	Checkout	11/22/2023 10:04	11	dropped	tablet
F500027	S304884	Checkout	8/17/2023 01:20	8	completed	mobile
F500028	S300157	Purchase	10/18/2023 06:40	10	completed	mobile
F500029	S302839	Impression	8/2/2023 18:56	8	completed	Laptop

```
-- disable safe updates
set sql_safe_updates = 0;

-- data cleaning

-- fix device_type typos
update funnel
set device_type = 'mobile'
where trim(lower(device_type)) in ('mobble', 'mobile_', 'mobile', '_mobile', '__ mobile');

-- trim and lower ensures that there are no leading and trailing spaces and it updates in lower case.

update funnel
set device_type = 'laptop'
where trim(lower(device_type)) in ('laptopo', 'laptop_', 'laptop');

-- fixing stage typos
set sql_safe_updates = 0;
update funnel
set stage = lower(trim(stage));

-- fix status typos
update funnel
set status = 'completed'
where trim(lower(status)) in ('completed__', 'complete');
```

# FUNNEL DIRTY TABLE

result Grid | Filter Rows:  Export: Wrap Cell Content:  Fetch rows:

funnel_event_id	session_id	stage	timestamp	funnel_month	status	device_type
F500000	S300081	Impression	6/9/2023 04:12	6	completed	mobble
F500001	S300160	Add to Cart	5/23/2023 19:57	5	completed	_mobile
F500002	S302105	click	7/27/2023 12:05	7	completed	tablet
F500003	S304058	Click	12/13/2023 16:23	12	completed	mobile
F500004	S303125	add to cart	7/4/2023 09:13	7	completed	tablet
F500005	S304564	Checkout	9/13/2023 23:53	9	completed	desktop
F500006	S303683	Purchase	2/12/2023 20:08	2	completed	mobble
F500007	S301860	add to cart	7/28/2023 01:36	7	completed	laptop
F500008	S303678	Click	11/9/2023 02:30	11	completed	desktop
F500009	S303879	Impression	5/8/2023 15:20	5	completed	mobile
F500010	S304157	Purchase	10/15/2023 11:36	10	dropped	desktop
F500011	S302096	Impression	11/11/2023 23:38	11	completed	tablet
F500012	S301221	Checkout	10/29/2023 23:05	10	completed	tablet
F500013	S301529	Checkout	8/19/2023 09:31	8	completed	mobile
F500014	S301036	Add to Cart	10/8/2023 17:14	10	completed	mobile
F500015	S301921	add to cart	4/27/2023 15:11	4	completed	mobble
F500016	S301445	Checkout	5/25/2023 09:36	5	completed	laptop
F500017	S300009	impression	8/18/2023 04:54	8	completed	_mobile
F500018	S304180	Add to C...	11/1/2023 07:47	11	completed	mobble
F500019	S300384	purchase	6/8/2023 02:42	6	completed	laptop
F500020	S300196	Checkout	11/24/2023 18:23	11	completed	laptop
F500021	S302189	click	2/17/2023 09:10	2	completed	laptop
F500022	S301699	click	5/15/2023 00:15	5	completed	desktop
F500023	S303792	add to cart	12/21/2023 04:00	12	completed	desktop
F500024	S300943	Purchase	12/29/2023 01:01	12	completed	mobile
F500025	S301970	Impression	12/1/2023 03:09	12	completed	desktop
F500026	S301873	Checkout	11/22/2023 10:04	11	dropped	tablet
F500027	S304884	Checkout	8/17/2023 01:20	8	completed	mobile
F500028	S300157	Purchase	10/18/2023 06:40	10	completed	mobile
F500029	S302839	Impression	8/2/2023 18:56	8	completed	Laptop

```

update funnel
set device_type = 'laptop'
where trim(lower(device_type)) in ('laptopo', 'laptop__', 'laptop');

-- fixing stage typos
set sql_safe_updates = 0;
update funnel
set stage = lower(trim(stage));

-- fix status typos
update funnel
set status = 'completed'
where trim(lower(status)) in ('completed__', 'complete');

update funnel
set status = 'dropped'
where trim(lower(status)) in ('droped', 'dropped__', 'dropped');

-- replacing null if any
update funnel
set device_type = 'unknown'
where device_type is null;

update funnel
set status = 'unknown'
where status is null;

```

# FUNNEL PROCESSED TABLE

7 • `select * from funnel;`

8

funnel_event_id	session_id	stage	time_stamp	funnel_month	status	device_type	customer_id
F500000	S300081	impression	6/9/2023 04:12	6	completed	mobile	C102932
F500001	S300160	add to cart	5/23/2023 19:57	5	completed	mobile	C104571
F500002	S302105	click	7/27/2023 12:05	7	completed	tablet	C102569
F500003	S304058	click	12/13/2023 16:23	12	completed	mobile	C104231
F500004	S303125	add to cart	7/4/2023 09:13	7	completed	tablet	C101115
F500005	S304564	checkout	9/13/2023 23:53	9	completed	desktop	C100846
F500006	S303683	purchase	2/12/2023 20:08	2	completed	mobile	C100481
F500007	S301860	add to cart	7/28/2023 01:36	7	completed	laptop	C102603
F500008	S303678	click	11/9/2023 02:30	11	completed	desktop	C100303
F500009	S303879	impression	5/8/2023 15:20	5	completed	mobile	C102765
F500010	S304157	purchase	10/15/2023 11:36	10	dropped	desktop	C104757
F500011	S302096	impression	11/11/2023 23:38	11	completed	tablet	C100480
F500012	S301221	checkout	10/29/2023 23:05	10	completed	tablet	C103032
F500013	S301529	checkout	8/19/2023 09:31	8	completed	mobile	C103821
F500014	S301036	add to cart	10/8/2023 17:14	10	completed	mobile	C104527
F500015	S301921	add to cart	4/27/2023 15:11	4	completed	mobile	C100843
F500016	S301445	checkout	5/25/2023 09:36	5	completed	laptop	C101762
F500017	S300009	impression	8/18/2023 04:54	8	completed	mobile	C103901
F500018	S304180	add to cart	11/1/2023 07:47	11	completed	mobile	C102329
F500019	S300384	purchase	6/8/2023 02:42	6	completed	laptop	C101395
F500020	S300196	checkout	11/24/2023 18:23	11	completed	laptop	C102157
F500021	S302189	click	2/17/2023 09:10	2	completed	laptop	C100866
F500022	S301699	click	5/15/2023 00:15	5	completed	desktop	C102700
F500023	S303792	add to cart	12/21/2023 04:00	12	completed	desktop	C100163
F500024	S300943	purchase	12/29/2023 01:01	12	completed	mobile	C103332
F500025	S301970	impression	12/1/2023 03:09	12	completed	desktop	C103440
F500026	S301873	checkout	11/22/2023 10:04	11	dropped	tablet	C100910
F500027	S304884	checkout	8/17/2023 01:20	8	completed	mobile	C100377
F500028	S300157	purchase	10/18/2023 06:40	10	completed	mobile	C103475
F500029	S302839	impression	8/2/2023 18:56	8	completed	laptop	C100758

Adding a column (Foreign Key)

`alter table funnel`

`add column customer_id varchar(50);`

`set sql_safe_updates = 0; -- allows updates without where or limit`

`update funnel f`

`join sessions s`

`on f.session_id = s.session_id`

`set f.customer_id = s.customer_id;`

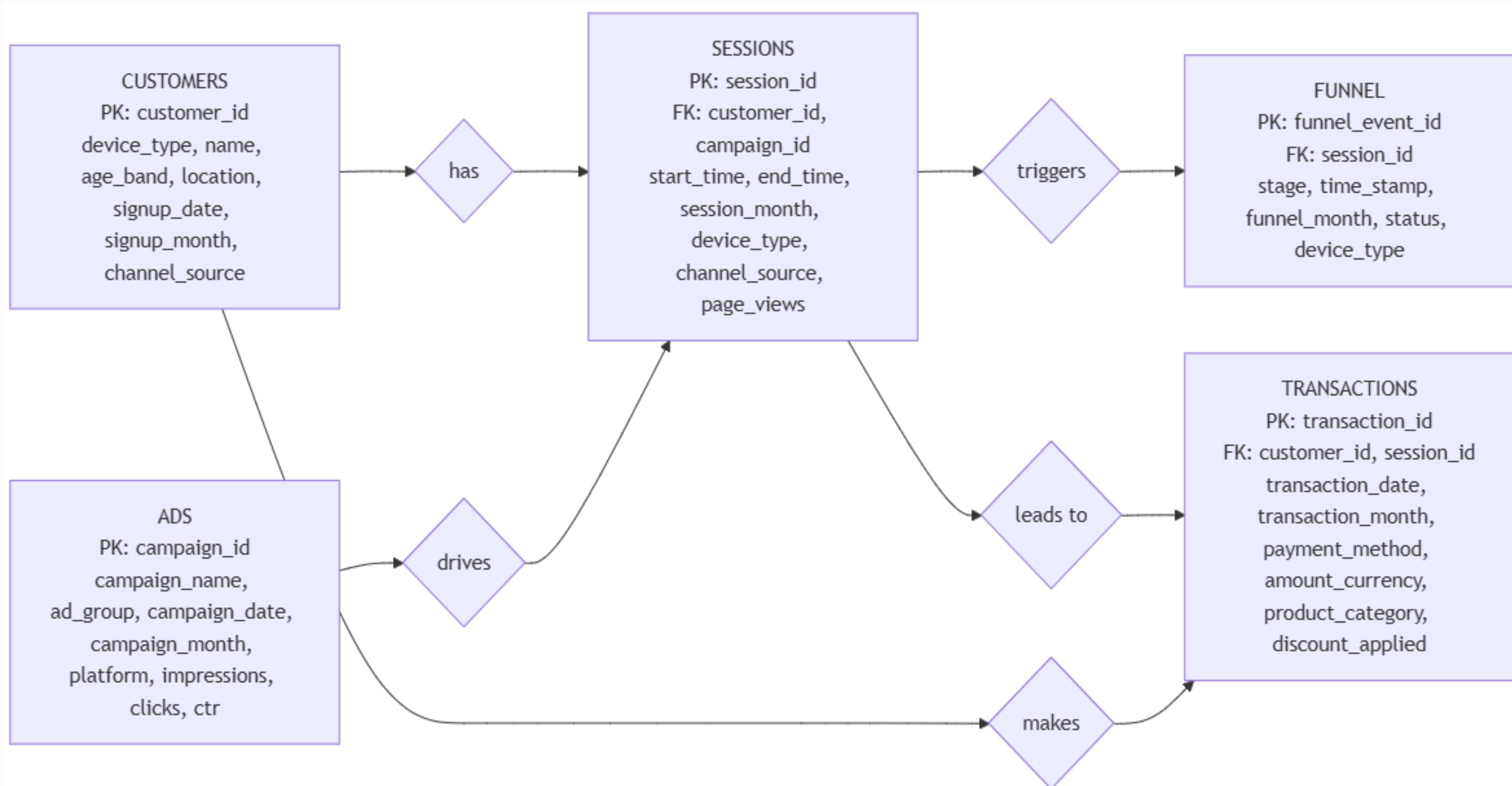
`set sql_safe_updates = 1; -- doesnt allow update without where or limit`

`select f.funnel_event_id, f.stage, f.timestamp, f.device_type, f.customer_id, f.funnel_month, f.session_id`

`from funnel f`

`join sessions s on f.session_id = s.session_id;`

# Entity Relational Diagram



- select

```

    a.campaign_name,
    a.platform,
    s.channel_source,
    c.device_type,
    c.age_band,
    f.stage as funnel_stage,
    f.status as funnel_status,
    count(c.customer_id) as total_customers,
    round(sum(t.amount),2) as total_revenue,
    count(distinct case when f.status='completed' and f.stage='purchase' then f.customer_id else 0 end) / count(distinct f.customer_id)*100
    as conversion_rate
from customers c
join sessions s on c.customer_id = s.customer_id
join funnel f on s.session_id = f.session_id
join transactions t on t.session_id = s.session_id
join ads a on s.campaign_id = a.campaign_id
group by a.campaign_name, a.platform, s.channel_source, c.device_type, c.age_band, f.stage, f.status
order by total_revenue desc, conversion_rate desc
limit 10;

```

Which Campaign and channel brought the highest highest funnel completion?  
 Which age and device segment converted the most?  
 Are there segments generating revenue but dropping early in the funnel?

Result Grid									
campaign_name	platform	channel_source	device_type	age_band	funnel_stage	funnel_status	total_customers	total_revenue	conversion_rate
Weekend Offer 2023	Instagram	Referral	mobile	35-44	checkout	completed	5	130766.91	50.0000
Flash Sale Offer	YouTube	Google Ads	mobile	25-34	add to cart	completed	4	124006.18	100.0000
Summer Specials Offer	YouTube	Facebook Ads	mobile	35-44	click	dropped	6	112323.58	100.0000
Gadget Gala Pro	YouTube	Email	desktop	25-34	purchase	completed	4	108125.2	100.0000
Clearance Sale 2023	Programmatic	Google Ads	mobile	45-54	impression	completed	2	99472.76	100.0000
Luxury Edit 2023	Instagram	Google Ads	mobile	25-34	purchase	completed	4	89693.04	100.0000
Summer Specials Offer	Google	Email	desktop	25-34	impression	completed	4	89675.75	100.0000
Clearance Sale 2023	YouTube	Google Ads	mobile	35-44	checkout	completed	3	89662.23	100.0000
Luxury Edit Offer	Programmatic	Email	mobile	18-24	impression	completed	4	87340.94	100.0000
Limited Edition Drop Offer	Programmatic	Referral	mobile	35-44	purchase	completed	2	83289.78	100.0000

## Insight:

Mobile stood out by completing the most funnel events, while desktop, although smaller in volume, delivered the highest conversion rate (100%). Interestingly, Instagram and YouTube programmatic drove the highest revenue, mainly powered by Google Ads and Emails, showing how devices and ad channels complement each other.

- **select**

```
f.device_type,  
t.payment_method,  
a.campaign_name,  
s.channel_source,  
sum(case when f.status='dropped' and f.stage in ('purchase', "checkout") then 1 else 0 end) as drop_count,  
sum(case when f.status='dropped' and f.stage in ("checkout", "purchase") then t.amount else 0 end) as revenue_loss  
  
from funnel f  
join sessions s on f.session_id = s.session_id  
join transactions t on t.session_id = s.session_id  
join ads a on s.campaign_id = a.campaign_id  
group by f.device_type, t.payment_method, a.campaign_name, s.channel_source  
order by revenue_loss desc, drop_count desc  
  
limit 10;
```

Which payment method causes highest drop on each device?  
How much revenue is potentially lost due to device/ payment method?

## Insight:

Result Grid					
Filter Rows: <input type="button" value="Filter"/>					
Export: <input type="button" value="CSV"/> Wrap Cell Content: <input type="checkbox"/> Fetch rows: <input type="button" value="Fetch"/>					
device_type	payment_method	campaign_name	channel_source	drop_count	revenue_loss
laptop	PayPal	Back to School Offer	Email	1	65018.82
mobile	Credit Card	Midnight Madness Series	Referral	2	50083.78
desktop	Credit Card	Student Offer XL	Referral	1	45466.63
mobile	UPI	Winter Warmers Offer	Google Ads	2	43244.47
mobile	UPI	Luxury Edit Series	Facebook Ads	2	32947.84
mobile	UPI	End of Season 2023	Facebook Ads	1	31520.93
mobile	UPI	Mega Discount Pro	Facebook Ads	1	31482.69
tablet	UPI	New Arrivals 2023	Organic	1	30441.04
mobile	PayPal	Clearance Sale XL	Referral	1	30210.77
tablet	UPI	Beauty Bash Series	Referral	1	28307.4

Despite these strong conversions, PayPal on laptops caused the largest revenue losses, especially during the “Back to School” campaign. Credit card and UPI also recorded high drops, signaling that payment friction is undermining campaign success at critical stages.

- select

```
a.platform,  
s.channel_source,  
c.device_type,  
c.age_band,  
sum(case when f.stage='purchase' and f.status='completed' then 1 else 0 end) as total_purchases,  
sum(case when f.stage='add to cart' then 1 else 0 end) as total_add_to_cart,  
sum(case when f.stage='purchase' and f.status='completed' then 1 else 0 end) / sum(case when f.stage='add to cart' then 1 else 0 end) as conversion_rate  
  
from customers c  
join sessions s on c.customer_id = s.customer_id  
join funnel f on s.session_id = f.session_id  
join ads a on s.campaign_id = a.campaign_id  
group by a.platform, s.channel_source, c.device_type, c.age_band  
order by conversion_rate desc, total_purchases desc  
limit 5;
```

Result Grid						
platform	channel_source	device_type	age_band	total_purchases	total_add_to_cart	conversion_rate
Programmatic	Google Ads	mobile	25-34	5	1	5.0000
YouTube	Referral	desktop	18-24	5	2	2.5000
Programmatic	Facebook Ads	mobile	18-24	7	3	2.3333
Google	Google Ads	mobile	25-34	4	2	2.0000
YouTube	Google Ads	mobile	45-54	4	2	2.0000

Which Platform , channel, age combination converts best?  
Mobile or desktop performing better?

## Insight:

Conversion rates peaked among 25–34 and 18–24 age bands from Google Ads and Referral platforms. Even though Facebook Ads didn't give the highest conversion rate, it brought in the most purchases on mobile for the 18–34 group – showing that younger demographics prefer mobile- heavy channels even if efficiency is lower.

Which ads/platform are converting traffic into purchases effectively?

- **select**

```

a.campaign_name,
a.ad_group,
a.platform,
sum(a.impressions) as total_impressions,
sum(a.clicks) as total_clicks,
round(avg(a ctr),10) as avg_ctr,
round(sum(t.amount),3) as total_revenue,
sum(case when f.status='completed' and f.stage='purchase' then 1 else 0 end) / sum(a.clicks)*100 as conversion_rate
from ads a
join sessions s on a.campaign_id = s.campaign_id
join funnel f on s.session_id = f.session_id
join transactions t on t.session_id = s.session_id
group by a.campaign_name, a.ad_group, a.platform
order by total_revenue desc, conversion_rate desc
limit 10;

```

Result Grid							
campaign_name	ad_group	platform	total_impressions	total_clicks	avg_ctr	total_revenue	conversion_rate
Luxury Edit 2023	Beauty	YouTube	1280510	123690	0.0966	477526.38	0.0065
Beauty Bash Series	Fashion	Programmatic	9664600	741268	0.0767	421250.18	0.0001
Midnight Madness Pro	Beauty	Instagram	16212325	1444883	0.0729266667	387243.14	0.0011
Clearance Sale 2023	Beauty	Programmatic	5878124	524916	0.0893	375498.07	0.0004
Midnight Madness Series	Electronics	Instagram	7176609	333696	0.0465	372767.73	0.0015
Gadget Gala Pro	Fashion	YouTube	4591193	498604	0.1086	331819.2	0.0016
Back to School Offer	Sports	Programmatic	6101840	195260	0.032	321426.3	0.0020
Clearance Sale XL	Home	Instagram	991082	70078	0.0707	317763.66	0.0043
Flash Sale Series	Electronics	Google	5674401	170235	0.03	310537.56	0.0041
Luxury Edit 2023	Fashion	Instagram	2563204	115351	0.045	304821.51	0.0087

## Insight:

In Beauty, Luxury Edit 2023 on YouTube brought in the most revenue, while the “Midnight Madness Pro” campaign via programmatic had the highest impressions but not CTR. Beauty dominated in impressions, clicks, and CTR, but Fashion stood out with the highest conversion rate despite very low clicks – proving that fewer, better-targeted Fashion campaigns were more efficient.

Which location + age group has most highest funnel funnel drop offs?  
Which segment contribute most to revenue?

- **select**

```

count(c.customer_id) as total_customers,
c.location,
c.age_band,
f.stage as funnel_stage,
sum(case when f.status='completed' and f.stage='purchase' then t.amount else 0 end) as revenue,
sum(case when f.status='dropped' then 1 else 0 end) as drop_offs
from customers c
join sessions s on c.customer_id = s.customer_id
join funnel f on s.session_id = f.session_id
join transactions t on t.session_id = s.session_id
group by c.location, c.age_band, f.stage
order by revenue desc, drop_offs desc
limit 5;

```

	total_customers	location	age_band	funnel_stage	revenue	drop_offs
▶	25	Hyderabad	25-34	purchase	281639.39999999997	2
	20	Delhi	35-44	purchase	259120.43999999997	2
	20	Chennai	18-24	purchase	192216.03999999998	0
	17	Hyderabad	45-54	purchase	188478.24000000002	3
	16	Mumbai	35-44	purchase	176221.81	1

## Insight:

Hyderabad generated the most purchases and revenue, mainly from the 25–34 age band, but it also saw the highest drop-offs (especially 45–54 age group). Delhi matched Hyderabad in drop-offs but lagged slightly in revenue. Chennai, however, had zero drop-offs yet moderate revenue, suggesting it's an untapped growth potential city.

Which age group, category, channel, device drives most repeat purchases?

```
▶ select
  c.age_band,
  t.product_category,
  s.channel_source,
  c.device_type,
  count(t.transaction_id) as repeat_purchases,
  round(sum(t.amount),3) as total_revenue
from customers c
join sessions s on c.customer_id = s.customer_id
join transactions t on t.session_id = s.session_id
group by c.age_band, t.product_category, s.channel_source, c.device_type
order by total_revenue desc, repeat_purchases desc
limit 10;
```

age_band	product_category	channel_source	device_type	repeat_purchases	total_revenue
25-34	Electronics	Referral	mobile	52	1344170.04
25-34	Electronics	Email	mobile	47	1262132.1
25-34	Electronics	Google Ads	mobile	51	1208923.96
25-34	Electronics	Organic	mobile	40	1122965.35
25-34	Electronics	Facebook Ads	mobile	41	1059245.77
18-24	Electronics	Email	mobile	37	1010635.55
18-24	Electronics	Organic	mobile	42	990317.44
35-44	Electronics	Referral	mobile	37	958395.42
35-44	Electronics	Facebook Ads	mobile	36	865796.07
18-24	Electronics	Referral	mobile	32	825724.86

## Insight:

Mobile drove the highest repeat purchases in Electronics, fueled by referral traffic from the 25–34 group.

Which age group, category, channel, device drives least repeat purchases?

```
select
    c.age_band,
    t.product_category,
    s.channel_source,
    c.device_type,
    count(t.transaction_id) as repeat_purchases,
    sum(t.amount) as total_revenue
from customers c
join sessions s on c.customer_id = s.customer_id
join transactions t on t.session_id = s.session_id
group by c.age_band, t.product_category, s.channel_source, c.device_type
order by total_revenue asc, repeat_purchases asc
limit 10;
```

Result Grid						
	age_band	product_category	channel_source	device_type	repeat_purchases	total_revenue
▶	18-24	Fashion	Email	tablet	1	513.76
	45-54	Fashion	Google Ads	tablet	1	603.22
	18-24	Fashion	Facebook Ads	tablet	1	672.36
	18-24	Beauty	Email	tablet	1	1219.74
	35-44	Fashion	Facebook Ads	tablet	1	1430.77
	25-34	Beauty	Facebook Ads	tablet	1	1497.26
	18-24	Beauty	Organic	tablet	2	1701.17
	35-44	Fashion	Email	tablet	1	1907.83
	55+	Fashion	Email	desktop	1	1909.4
	35-44	Beauty	Email	tablet	1	1919.88

## Insight:

Tablets showed the lowest repeat purchases, largely in Fashion, driven by email and Facebook ads targeting 18–34 users. This highlights device-category mismatches that limit retention.

Which channel, device, age has most retained customers?

- **select**

```
c.signup_month,  
s.channel_source,  
c.device_type,  
c.age_band,  
count(distinct t.customer_id) as retained_customers,  
t.product_category  
  
from customers c  
join sessions s on c.customer_id = s.customer_id  
join transactions t on t.session_id = s.session_id  
group by c.signup_month, s.channel_source, c.device_type, c.age_band, t.product_category  
order by retained_customers desc  
limit 5;
```

result Grid					
<input type="button" value="Filter Rows:"/> Export: <input type="button" value="grid"/> Wrap Cell Content: <input type="button" value="A"/> Fetch rows: <input type="button" value="grid"/>					
signup_month	channel_source	device_type	age_band	retained_customers	product_category
8	Referral	mobile	25-34	11	Fashion
12	Referral	mobile	25-34	9	Sports
9	Organic	mobile	25-34	9	Sports
6	Google Ads	mobile	25-34	9	Beauty
6	Email	mobile	18-24	9	Beauty

## Insight:

Referral in Fashion drove most retained customers , mostly age group of 25-34. Followed by Sports and Beauty

Did discounts actually increase revenue over time?  
Which platform is most benefitted ?

```
select
    a.campaign_name,
    a.platform,
    round(sum(case when t.discount_applied='1' then t.amount else 0 end),3) as revenue_with_discount,
    round(sum(case when t.discount_applied='0' then t.amount else 0 end),3) as revenue_without_discount,
    count(case when t.discount_applied = 0 then t.transaction_id end ) as transactions_discount_not_applied,
    count(case when t.discount_applied = 1 then t.transaction_id end ) as transactions_discount_applied
from transactions t
join sessions s on t.session_id = s.session_id
join ads a on s.campaign_id = a.campaign_id
group by a.campaign_name, a.platform
order by revenue_with_discount desc
limit 10;
```

## Insight:

Discounts overall didn't drive major uplift: transactions with discounts were fewer than without discounts. The real standout was Instagram, which drove the highest revenue even without discounts, especially through the Midnight Madness Pro campaign. YouTube's Summer Specials campaign, however, drove the highest transaction counts — showing a split: Instagram = high-value, low-volume vs. YouTube = high-volume, mid-value.

Result Grid					
		Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
campaign_name	platform	revenue_with_discount	revenue_without_discount	transactions_discount_not_applied	transactions_discount_applied
Midnight Madness Pro	Instagram	429258.24	852851.59	80	48
Flash Sale 2023	Google	425047.91	552263.96	87	38
Gadget Gala XL	Facebook	356872.44	343982.32	42	23
Flash Sale Offer	YouTube	354770.65	500782.26	71	24
Summer Specials Offer	YouTube	308183.61	786267.37	92	49
Festive Fiesta XL	Instagram	286044.34	961059.72	90	36
Luxury Edit Offer	Programmatic	280905.3	279368.41	38	24
New Arrivals Offer	YouTube	274228.05	269624.5	35	23
Home Refresh Series	Facebook	268071.28	382977.25	62	28
Holiday Deals 2023	Programmatic	262010.03	237791.08	26	23

Which product category has highest abandoned cart and which age group?

- **select**

```
t.payment_method,
c.age_band,
c.device_type,
t.product_category,
s.channel_source,
a.campaign_name,
round(sum(t.amount),2) as lost_revenue,
count(f.funnel_event_id) as abandoned_cart_count

from funnel f
join sessions s on f.session_id = s.session_id
join customers c on s.customer_id = c.customer_id
join transactions t on t.session_id = s.session_id
join ads a on s.campaign_id = a.campaign_id
where f.stage='add to cart' and f.status='dropped'
group by c.age_band, c.device_type, s.channel_source, a.campaign_name, t.payment_method,t.product_category
order by lost_revenue desc
limit 10;
```

payment_method	age_band	device_type	product_category	channel_source	campaign_name	lost_revenue	abandoned_cart_count
Net Banking	55+	desktop	Electronics	Email	Flash Sale 2023	48368.83	1
Net Banking	18-24	mobile	Electronics	Facebook Ads	Weekend Offer Pro	32546.17	1
PayPal	25-34	mobile	Electronics	Organic	Student Offer XL	25755.28	1
UPI	35-44	tablet	Electronics	Referral	Back to School Offer	25751.97	1
Net Banking	35-44	mobile	Electronics	Email	Summer Specials Offer	18109.11	1
PayPal	25-34	mobile	Home	Referral	Festive Fiesta XL	16616.37	1
Credit Card	35-44	mobile	Sports	Referral	Summer Specials XL	13565.83	1
Credit Card	18-24	mobile	Home	Referral	Midnight Madness Series	13565.37	1
PayPal	45-54	mobile	Electronics	Organic	Clearance Sale Series	13426.72	1
Credit Card	35-44	mobile	Home	Email	Midnight Madness Pro	12777.75	1

## Insight:

Electronics had the highest abandoned cart losses, mainly on mobile with referral traffic from the 25–34 group, followed by 18–24. The root issue appears to be net banking and credit card failures on mobile, creating direct leakage in the funnel.

Which month recorded highest revenue overall?  
And how discounts affect revenue?

```

select
    t.transaction_month,
    round(sum(t.amount),2) as total_revenue,
    round(sum(case when t.discount_applied = '1' then t.amount else 0 end),2) as revenue_with_discount,
    round(sum(case when t.discount_applied ='0' then t.amount else 0 end),2) as revenue_without_discount,
    count(case when t.discount_applied = 1 then t.transaction_id end) as transactions_with_applied,
    count(case when t.discount_applied = 0 then t.transaction_id end) as transactions_without_discount_applied
from customers c
join sessions s on c.customer_id = s.customer_id
join transactions t on t.session_id = s.session_id
group by t.transaction_month
order by t.transaction_month, total_revenue desc;

```

transaction_month	total_revenue	revenue_with_discount	revenue_without_discount	transactions_with_applied	transactions_without_discount_applied
1	1806132.34	479055.53	1327076.81	59	152
2	2154314.72	634047.31	1520267.41	66	180
3	2702613.8	941481.24	1761132.56	87	179
4	2635345.8	825377.44	1809968.36	105	230
5	2496415.6	746837.14	1749578.46	95	209
6	3757870.66	1393095.97	2364774.69	152	295
7	4483256.37	1436023.66	3047232.71	138	292
8	4760479.77	1559235.22	3201244.55	163	328
9	3499439.76	847361.02	2652078.74	119	324
10	5360411.94	1457998.43	3902413.51	172	422
11	5161544.74	1547727.8	3613816.94	191	415
12	5286971.55	1625718.35	3661253.2	196	431

## Insight:

October recorded the highest revenue overall, while January was the lowest. December was unique: it had the highest transactions (with discounts) but still didn't translate into the highest revenue, confirming that discount-heavy months don't always maximize earnings.

Which Platform performed best with views, impressions, clicks, ctr and at which month?

```

    select
        f.funnel_month as month,
        a.platform,
        round(sum(case when f.stage = 'purchase' and f.status = 'completed' then t.amount else 0 end),2) as total_revenue,
        sum(s.page_views) as total_page_views,
        sum(a.impressions) as total_impressions,
        sum(a.clicks) as total_clicks,
        round(avg(a ctr),4) as avg_ctr
    from funnel f
    join sessions s on f.session_id = s.session_id
    join transactions t on f.customer_id = t.customer_id and f.session_id = t.session_id
    join ads a on s.campaign_id = a.campaign_id
    join customers c on f.customer_id = c.customer_id
    where f.stage = "purchase" and f.status = "completed"
    group by f.funnel_month, a.platform
    order by total_revenue desc, total_impressions desc
    limit 10;

```

Result Grid						
month	platform	total_revenue	total_page_views	total_impressions	total_clicks	avg_ctr
11	Programmatic	241717.5	72	5157834	440370	0.0856
12	Programmatic	181881.82	51	3891593	334658	0.0867
7	Programmatic	160229.82	30	2138720	169314	0.0841
10	YouTube	157646.5	42	2050418	209912	0.1044
3	Instagram	150799.97	53	1656452	137899	0.0673
12	YouTube	125967.32	43	3505758	240264	0.0671
8	Instagram	100176.1	34	1410989	62537	0.0416
10	Instagram	93930.1	22	1218477	43677	0.0378
3	YouTube	92589.01	65	2394058	194813	0.0847
5	YouTube	84760.69	28	811141	76382	0.0958

## Insight:

Programmatic ads performed best in November–December, followed by July, generating strong impressions, clicks, and page views, though CTR remained average. YouTube, on the other hand, had the highest CTR but not the highest revenue or reach, showing that click quality doesn't always mean revenue impact.

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# Recommendations:

- Optimize mobile checkout to close the gap with higher-converting desktop
- Resolve PayPal (laptop) and net banking (mobile) failures to save revenue
- Prioritize 25–34 for conversions, 18–24 for volume
- Push Fashion for sales, keep Beauty for awareness
- Reduce drop-offs in Hyderabad/Delhi, scale campaigns in Chennai
- Retain Electronics mobile buyers, boost repeat in Fashion (tablet users)
- Leverage July peaks, focus on referral + 25–34 engagement
- Rely on Instagram-led campaigns, reduce over-discounting
- Tackle abandoned carts in Electronics (mobile + referrals)
- Improve Programmatic CTR to sales, double down on Instagram & YouTube
- Maximize October, cut weak January/December discount losses
- Invest more in Instagram, YouTube, Programmatic; test weaker channels

# THANK YOU!