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NBA Top Shot Database

Part 1

Overview

NBA Top Shot is a digital collectable experience that leverages the power of the good ol' internet and the new innovative technology called blockchain to deliver the next generation of the collectables and marketplace experience that was established with trading cards. NBA Top Shot uses blockchain technology to create assets that are guaranteed limited edition and authentic, where users are able to buy "Packs" that contain "Moments," and those Moments are snippets of Sets that amount to a specific number. For example, a user can buy an Early Adopter Pack that Contains 5 total Moments (2 from the Early Adopters set and 3 from the Base Set), a user can continue to buy Early Adopter packs to collect all 10 Early Adopter Moments, or they can purchase these Moments from the Marketplace.

The Goal is to complete as many Sets as possible by purchasing Packs or buying the individual Moments contained in these Packs through the Marketplace, however, certain Packs are sold at a very limited number, and once those packs are sold out the only way to purchase Moments to complete Sets is to buy them in the Marketplace.

In Phase 1, we will be defining the NBA Topshot in terms of the entities and relationships by determining the business rules, providing a data glossary, identifying the questions we would like to answer and demonstrating both a conceptual and logical model of the NBA TopShot database.

Stakeholders

- The NBA
- Investors
- Dapper Labs employees
- NBA Top Shot users
- Potential future businesses that hold collectible IP

The stakeholders included in this project are the investors, the NBA Licensing commission, the employees, users, and other potential leagues that would want to replicate this structure. If this Marketplace and user base can be scaled to a market equivalent to the physical NBA trading card marketplace, we will be able to replicate this model with other potential leagues by licesning their Intellectual Property (IP) to create the biggest online trading marketplace leveraging blockchain technology.

Business Rules

- A user owns none or many Moments
- A User can buy one or more packs
- A User can have one or many showcases
- A User must have a username
- The marketplace contains many Moments
- A Pack contains one or more Moments
- A Moment has only one Edition Number
- A Moment has one Size
- A Moment must have Player Stats
- A User create a Collection
- A user may have one or more Showcases
- A User may purchase one or more Packs
- Packs are limited to a certain quantity
- There are more than one types of Packs

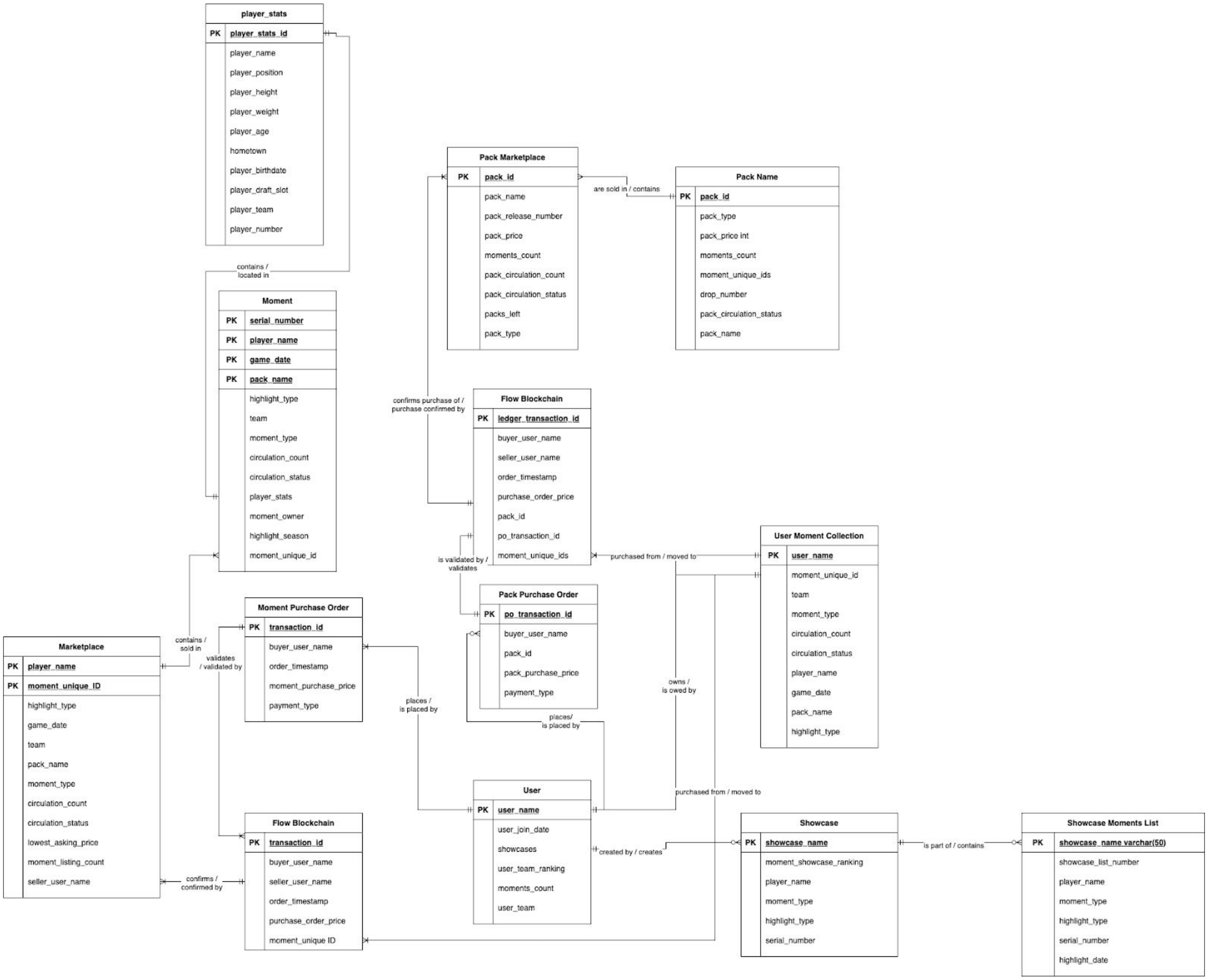
Glossary

1. **User:** A person who can collect, buy, sell, and trade Moments or Packs
2. **Moment:** A digital collectible, in the form of an NBA video highlight minted on the blockchain. There are 4 different types of Moments: Common, Rare, Legendary, and Ultimate. Each Moment has a fixed circulation from 1-2xxx.
3. **Player Stats:** A collection of information about the player featured in the Moment
4. **Edition Number:** Each Moment has an ID number from 1-2xxx, this specific number is called the edition number
5. **Size:** Each Moment has a fixed circulation from 1-2xxx, the amount of circulation per Moment is the Size, the lower the Size of a Moment the rarer the Moment is
6. **Set:** Sets are a collection of Moments that revolve around a certain theme or event surrounding the NBA. Each set has a fixed number of Moments that are sold in Packs
7. **Packs:** Digital collection of a variable amount Moments that can be purchased.
8. **Showcases:** A digital shelf where users can pick certain Moments they would like to share or show off with other users.
9. **Marketplace:** Location where users can buy and sell Moments to each other.
10. **Collection:** A library of Moments currently owned by a User

Data Questions

- What are the most expensive Moments?
- What do the most expensive Moments have in common?
- What is the average selling price for a Moment in the Marketplace?
- What is the average selling price for Moments that have high Edition Numbers?
- What is the average selling price for Moments that have low Edition Numbers?
- What is the most popular Moments, in terms of sale volume, within the past 7 days?

Conceptual Model



	player_stats
PK	**player_stats_id**
	player_name
	player_position
	player_height
	player_weight
	player_age
	hometown
	player_birthdate
	player_draft_slot
	player_team
	player_number

	Pack Marketplace
PK	**pack_id**
	pack_name
	pack_release_number
	pack_price
	moments_count
	pack_circulation_count
	pack_circulation_status
	packs_left
	pack_type

	Pack Name
PK	**pack_id**
	pack_type
	pack_price int
	moments_count
	moment_unique_ids
	drop_number
	pack_circulation_status
	pack_name

	Moment
PK	**serial_number**
PK	**player_name**
PK	**game_date**
PK	**pack_name**
	highlight_type
	team
	moment_type
	circulation_count
	circulation_status
	player_stats
	moment_owner
	highlight_season
	moment_unique_id

	Flow Blockchain
PK	**ledger_transaction_id**
	buyer_user_name
	seller_user_name
	order_timestamp
	purchase_order_price
	pack_id
	po_transaction_id
	moment_unique_ids

	User Moment Collection
PK	**user_name**
	moment_unique_id
	team
	moment_type
	circulation_count
	circulation_status
	player_name
	game_date
	pack_name
	highlight_type

	Pack Purchase Order
PK	**po_transaction_id**
	buyer_user_name
	pack_id
	pack_purchase_price
	payment_type

	Moment Purchase Order
PK	**transaction_id**
	buyer_user_name
	order_timestamp
	moment_purchase_price
	payment_type

	Marketplace
PK	**player_name**
PK	**moment_unique_ID**
	highlight_type
	game_date
	team
	pack_name
	moment_type
	circulation_count
	circulation_status
	lowest_asking_price
	moment_listing_count
	seller_user_name

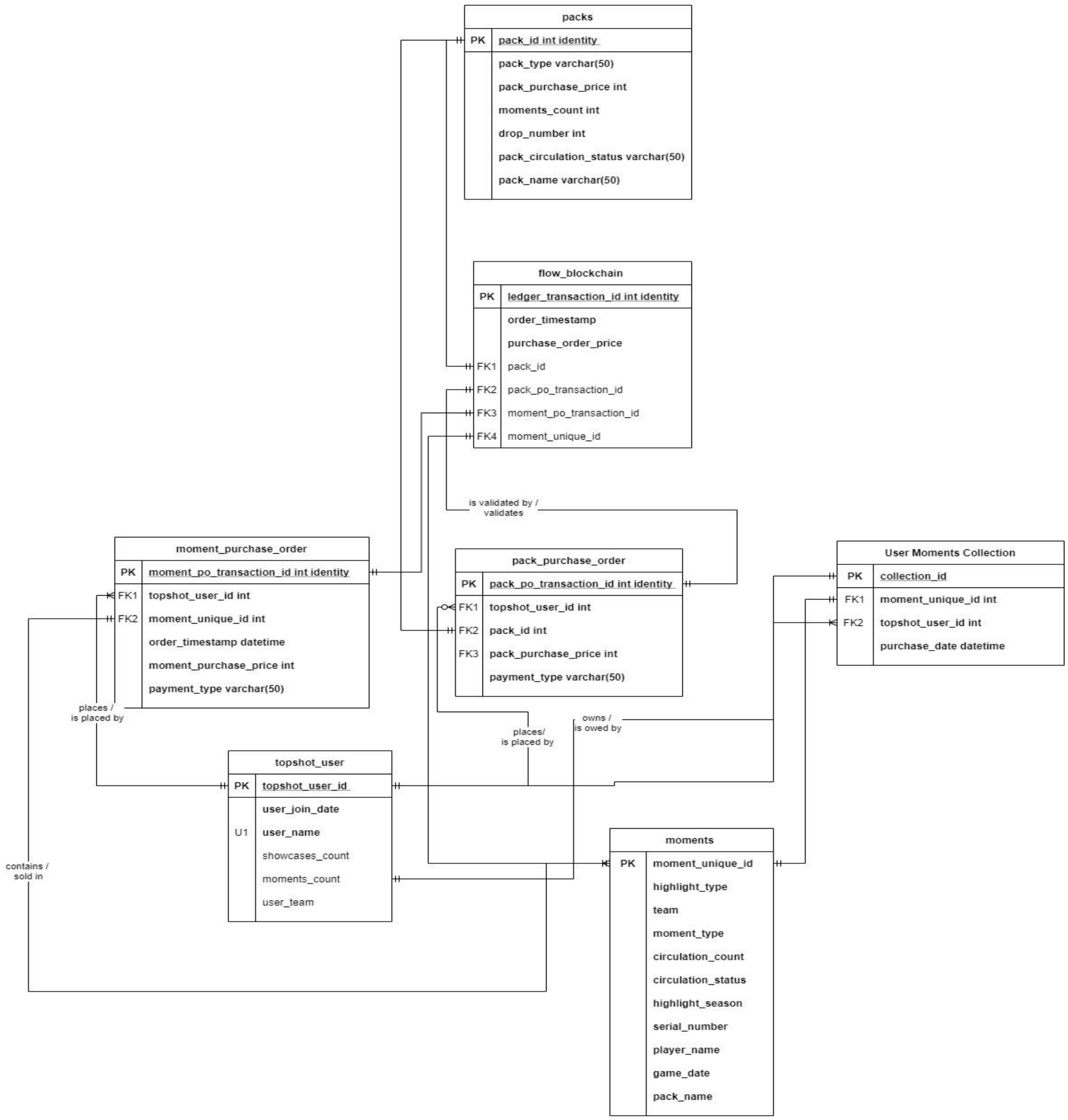
	Flow Blockchain
PK	**transaction_id**
	buyer_user_name
	seller_user_name
	order_timestamp
	purchase_order_price
	moment_unique ID

	User
PK	**user_name**
	user_join_date
	showcases
	user_team_ranking
	moments_count
	user_team

	Showcase
PK	**showcase_name**
	moment_showcase_ranking
	player_name
	moment_type
	highlight_type
	serial_number

	Showcase Moments List
PK	**showcase_name varchar(50)**
	showcase_list_number
	player_name
	moment_type
	highlight_type
	serial_number
	highlight_date

Logical Model



```sql
select 'hello, sql' as greeting


--creating the user table
CREATE TABLE topshot_user(
    --create cols
    topshot_user_id int identity
    , topshot_username varchar(50) NOT NULL
    , user_join_date datetime NOT NULL
    , showcases_count int
    , moments_count int
    , user_team varchar(50)
    --place contraints
    , CONSTRAINT PK_topshot_user PRIMARY KEY (topshot_user_id)
    , CONSTRAINT U1_topshot_user UNIQUE(topshot_username)
)
-- End Creating the User table

--Creating Moments table
CREATE TABLE moments(
    --create cols
    moment_unique_id int identity
    , serial_number int NOT NULL
    , player_name varchar(200) NOT NULL
    , game_date datetime NOT NULL
    , pack_name varchar(100) NOT NULL
    , highlight_type varchar(100) NOT NULL
    , moment_type varchar(100) NOT NULL
    , circulation_count int NOT NULL
    , circulation_status varchar(50) NOT NULL
    , highlight_season varchar(50) NOT NULL
    -- place constraints
    , CONSTRAINT PK_moments PRIMARY KEY(moment_unique_id)
)

--Creating table with User's moments
CREATE TABLE user_moments_collection(
    --creating cols
    collection_id int identity
    , topshot_user_id int NOT NULL
    , moment_unique_id int NOT NULL
    , purchase_date datetime NOT NULL
    --place constraints
    , CONSTRAINT PK_user_moments_collection PRIMARY KEY(collection_id)
    , CONSTRAINT FK1_user_moments_collection FOREIGN KEY(moment_unique_id)
      REFERENCES moments(moment_unique_id)
    , CONSTRAINT FK2_user_moments_collection FOREIGN KEY(topshot_user_id)
      REFERENCES topshot_user(topshot_user_id)
    , CONSTRAINT U1_user_moments_collection UNIQUE(moment_unique_id)
```

```sql
)

DROP TABLE user_moments_collection

--Creating purchase order table for Moments
CREATE TABLE moments_purchase_order(
    moment_po_transaction_id int identity
    , topshot_user_id int NOT NULL
    , moment_unique_id int NOT NULL
    , moment_purchase_price int NOT NULL
    , payment_type varchar(50) NOT NULL
    --place contraints
    , CONSTRAINT PK_moments_purchase_order PRIMARY KEY (moment_po_transaction_id)
    ,  CONSTRAINT FK1_moments_purchase_order FOREIGN KEY(topshot_user_id)
      REFERENCES topshot_user(topshot_user_id)
    ,  CONSTRAINT FK2_moments_purchase_order FOREIGN KEY(moment_unique_id)
      REFERENCES moments(moment_unique_id)
)

--Creating table for Packs
CREATE TABLE packs(
    pack_id int identity
    , pack_type varchar(50) NOT NULL
    , moments_count int NOT NULL
    , drop_number int NOT NULL
    , pack_circulation_status varchar(50)
    , pack_name varchar(50)
    -- place constraints
    CONSTRAINT PK_packs PRIMARY KEY(pack_id)
)

-- Creating table for Packs Purchase Order
CREATE TABLE pack_purchase_order(
    pack_po_transaction_id int identity
    , topshot_user_id int NOT NULL
    , pack_id int NOT NULL
    , pack_purchase_price int NOT NULL
    , payment_type varchar(50) NOT NULL
    --place constraints
    , CONSTRAINT PK_pack_purchase_order PRIMARY KEY (pack_po_transaction_id)
    , CONSTRAINT FK1_pack_purchase_order FOREIGN KEY(topshot_user_id) REFERENCES
      topshot_user(topshot_user_id)
    , CONSTRAINT FK2_pack_purchase_order FOREIGN KEY(pack_id) REFERENCES packs
      (pack_id)
)

--Creating table for Flow blockchain that validates all transactions
CREATE TABLE flow_blockchain(
    ledger_transaction_id int identity
    , order_timestamp datetime NOT NULL
    , pack_id int
    , pack_po_transaction_id int
    , moment_po_transaction_id int
    , moment_unique_id int
    --place constraints
    , CONSTRAINT PK_flow_blockchain PRIMARY KEY(ledger_transaction_id)
    , CONSTRAINT FK1_flow_blockchain FOREIGN KEY(pack_id) REFERENCES packs(pack_id)

    , CONSTRAINT FK2_flow_blockchain FOREIGN KEY(pack_po_transaction_id) REFERENCES
      pack_purchase_order(pack_po_transaction_id)
    , CONSTRAINT FK3_flow_blockchain FOREIGN KEY(moment_po_transaction_id)
      REFERENCES moments_purchase_order(moment_po_transaction_id)
    , CONSTRAINT FK4_flow_blockchain FOREIGN KEY(moment_unique_id) REFERENCES
      moments(moment_unique_id)
)


-- There is a bug in our payment system that need to be resolved,
-- it's only affecting the base set packs so we have to change these from available
   to unavailable.

SELECT * FROM packs

-- We do not have the unavailable pack circulation status so we have to insert that
   into our table first

--adding unavailable status, so we know which packs are not sold out, and available
   for purchase once we fix the bug
UPDATE packs SET pack_circulation_status = 'unavailable' WHERE
  pack_circulation_status = 'available'

  SELECT * FROM packs

  --cool, now our ecommerce platform has marked our available base set cards to
    unavailable,
  --that way once the bug is fixed we can switch the unavails back to avail


  -- insert our users into the topshot_user table
  insert into topshot_user (user_join_date, topshot_username, showcases_count,
    moments_count, user_team)
  values
  ('2020-06-15 02:06:31', 'rbrownsmith0', 6, 1184, null)
  ,('2020-02-06 02:32:01', 'anesbeth1', 6, 54, 'Phoenix Suns')
  ,('2019-08-26 20:40:08', 'tcustance2', null, 1261, 'Milwaukee Bucks')
  , ('2020-11-17 20:10:35', 'glamey3', 10, 903, 'San Antonio Spurs')
  , ('2020-04-04 16:43:18', 'braffels4', null, 293, 'Indiana Pacers')
  , ('2020-08-26 07:04:01', 'lwessing5', 9, 1030, 'Washington Wizards')
```

```sql
, ('2019-09-05 14:18:15', 'anazer6', 2, 974, null)
, ('2019-08-03 20:25:05', 'llawey7', 4, 552, 'Golden State Warriors')
, ('2019-08-26 02:46:36', 'mboswards8', 6, 1234, null)
, ('2019-08-27 09:19:55', 'hhasted9', null, 354, 'Phoenix Suns')
, ('2020-01-27 01:50:29', 'gaugustea', null, 678, 'Oklahoma City Thunder')
, ('2020-10-03 07:46:36', 'cponcefordb', null, 605, 'Portland Trail Blazers')
, ('2020-01-15 14:50:08', 'tsperac', null, 635, 'San Antonio Spurs')
, ('2020-07-16 21:52:48', 'hnandd', 10, 460, 'Phoenix Suns')
, ('2019-07-15 17:54:12', 'tmullingere', 10, 893, 'Los Angeles Lakers')
, ('2020-10-21 04:18:11', 'dhearnef', null, 1093, 'New York Knicks')
, ('2019-10-21 00:41:34', 'murlingg', null, 1006, null)
, ('2020-09-08 10:57:29', 'tskinh', 1, 212, 'Utah Jazz')
, ('2020-08-22 06:19:17', 'ldoughtyi', 3, 789, 'Atlanta Hawks')
, ('2020-09-03 16:17:18', 'cberthomierj', null, 893, 'Utah Jazz')
, ('2020-03-19 12:46:33', 'zvelak', 4, 866, 'Cleveland Cavaliers')
, ('2020-10-15 20:29:09', 'leynaldl', null, 216, 'Los Angeles Clippers')
, ('2019-10-12 19:57:04', 'pbarnwallm', null, 240, 'Dallas Mavericks')

--Let's check our data!

SELECT * FROM topshot_user

--We have users now! Lot's of them have not created showcases, some have not
  selected their favorite team, and one has not purchases any moments!

-- Insert data officially licensed nba highlights into the moments table
insert into moments  (serial_number, player_name , game_date , pack_name ,
  highlight_type , moment_type , circulation_count, circulation_status ,
  highlight_season)
values (39, 'Steven Adams', '07/29/2020', 'base set', 'layup', 'rare', 3326, 'cc',
  '2019-2020')
,(94, 'Paul Millsap', '08/20/2020', 'metallic hold le', 'block', 'common', 3326,
  'cc', '2018-2019')
,(171, 'OG Anunoby', '10/02/2020', 'metallic hold le', 'steal', 'common', 299,
  'le', '2019-2020')
,(8, 'Royce O''Neale', '08/31/2020', 'so fresh', 'steal', 'common', 299, 'cc',
  '2019-2020')
,(90, 'Joe Harris', '10/07/2020', 'so fresh', 'handles', 'rare', 299, 'cc',
  '2019-2020')
,(180, 'Nemanja Bjelica', '10/16/2020', 'metallic hold le', 'handles', 'common',
  275, 'le', '2019-2020')
,(74, 'Miles Bridges', '08/08/2020', 'premium pack', 'handles', 'common', 2343,
  'le', '2019-2020')
,(55, 'Caris LeVert', '07/28/2020', 'metallic hold le', 'handles', 'common', 3326,
  'cc', '2019-2020')
,(242, 'Jonathan Isaac', '08/09/2020', 'base set', 'dunk', 'common', 345, 'cc',
  '2019-2020')
,(6, 'Tyler Herro', '10/16/2020', 'metallic hold le', 'steal', 'common', 3134,
  'le', '2019-2020')
```

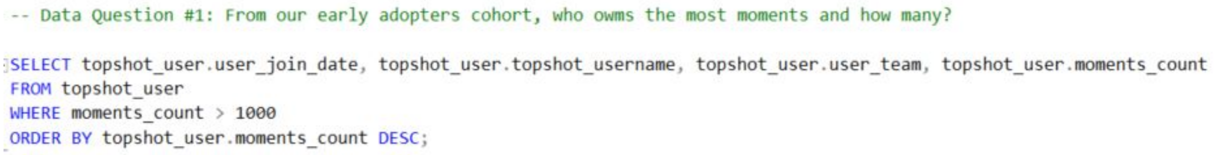
```
,(138, 'Patty Mills', '07/27/2020', 'premium pack', 'layup', 'common', 3134, 'cc',
  '2019-2020')
,(123, 'OG Anunoby', '08/08/2020', 'lace em'' up', 'handles', 'common', 1232, 'cc',
   '2019-2020')
,(79, 'Derrick White', '08/07/2020', 'so fresh', 'steal', 'common', 150, 'cc',
  '2018-2019')
,(12, 'Willie Cauley-Stein', '09/28/2020', 'premium pack', 'assist', 'common',
  3134, 'le', '2019-2020')
,(20, 'Seth Curry', '07/30/2020', 'so fresh', 'dunk', 'common', 3134, 'cc',
  '2019-2020')
,(173, 'Doug McDermott', '10/10/2020', 'lace em'' up', 'block', 'common', 3326,
  'cc', '2018-2019')
,(30, 'Brandon Clarke', '10/02/2020', 'premium pack', 'dunk', 'common', 299, 'le',
  '2019-2020')
,(240, 'John Henson', '09/20/2020', 'base set', 'steal', 'common', 3134, 'le',
  '2018-2019')
,(295, 'Bogdan Bogdanovic', '08/11/2020', 'premium pack', 'dunk', 'common', 3134,
  'cc', '2019-2020')
,(255, 'Patty Mills', '08/21/2020', 'base set', 'steal', 'common', 2343, 'le',
  '2019-2020')
,(238, 'Bojan Bogdanovic', '07/23/2020', 'base set', 'handles', 'rare', 150, 'cc',
  '2019-2020')
,(114, 'Donovan Mitchell', '07/22/2020', 'lace em'' up', 'assist', 'rare', 299,
  'cc', '2019-2020')
,(137, 'Pascal Siakam', '10/09/2020', 'metallic hold le', 'jump shot', 'common',
  3134, 'cc', '2019-2020')
,(46, 'Jae Crowder', '08/07/2020', 'metallic hold le', 'block', 'common', 150,
  'cc', '2019-2020')
,(36, 'Ish Smith', '07/28/2020', 'so fresh', 'dunk', 'common', 1232, 'cc',
  '2018-2019')
,(280, 'P.J. Tucker', '10/12/2020', 'lace em'' up', 'dunk', 'rare', 345, 'le',
  '2019-2020')
,(138, 'RJ Barrett', '10/12/2020', 'metallic hold le', 'layup', 'common', 2343,
  'le', '2019-2020')
,(281, 'Pascal Siakam', '09/15/2020', 'metallic hold le', 'block', 'common', 3134,
  'cc', '2019-2020')
,(249, 'Doug McDermott', '09/24/2020', 'metallic hold le', 'block', 'common', 2432,
   'cc', '2019-2020')
,(121, 'Aron Baynes', '09/03/2020', 'so fresh', 'handles', 'common', 2343, 'cc',
  '2019-2020')
,(79, 'Kenneth Faried', '07/29/2020', 'so fresh', 'jump shot', 'common', 1232,
  'cc', '2019-2020')
,(138, 'Kosta Koufos', '09/27/2020', 'so fresh', 'layup', 'common', 345, 'cc',
  '2019-2020')
,(275, 'Pascal Siakam', '09/09/2020', 'lace em'' up', 'steal', 'rare', 275, 'cc',
  '2019-2020')
,(223, 'Dejounte Murray', '09/11/2020', 'premium pack', 'dunk', 'common', 2432,
  'le', '2019-2020')
,(292, 'Tyler Zeller', '08/26/2020', 'base set', 'assist', 'rare', 2432, 'cc',
  '2019-2020')
,(65, 'Denzel Valentine', '10/08/2020', 'base set', 'assist', 'common', 345, 'cc', 
  '2018-2019')

--Lots of rows, but that's bc we want a large inventory of highlights for users to 
  purchase!

--Now let's insert moments to user's collections that were already purchased from 
  July - November 2020

insert into user_moments_collection (topshot_user_id, moment_unique_id, 
  purchase_date)
values(25, 2953, '8/8/2020')
,(18, 2007, '11/19/2020')
, (4, 2534, '10/30/2020')
,(10, 2505, '7/21/2020')
,(1, 2216, '7/13/2020')
, (1, 2783, '11/24/2020')
,(3, 2385, '11/18/2020')
,(14, 2524, '8/7/2020')
,(6, 2373, '11/29/2020')
,(8, 2155, '11/1/2020')
,(1, 2744, '8/20/2020')
,(6, 2168, '11/5/2020')
,(12, 2204, '7/25/2020')
,(10, 2419, '8/27/2020')
,(12, 2876, '7/18/2020')
,(12, 2737, '8/15/2020')
,(4, 2082, '8/8/2020')
,(3, 2332, '10/3/2020')
,(7, 2063, '8/15/2020')
,(18, 2925, '9/5/2020')
,(18, 2962, '9/14/2020')
,(5, 2681, '7/24/2020')
,(16, 2420, '7/15/2020')
,(1, 2916, '8/5/2020')
,(25, 2150, '7/23/2020')
,(18, 2794, '11/19/2020')
,(18, 2578, '7/20/2020')
,(4, 2675, '8/5/2020')
,(8, 2046, '9/28/2020')
,(14, 2278, '10/9/2020')
,(6, 2686, '10/2/2020')
,(14, 2712, '7/13/2020')
, (12, 2410, '9/29/2020')
,(17, 2395, '7/4/2020')
,(10, 2615, '11/23/2020')
,(15, 2110, '11/13/2020')
,(19, 2283, '11/14/2020')
```

```
,(3, 2209, '7/6/2020')
,(17, 2493, '10/27/2020')
,(11, 2132, '10/15/2020')
,(21, 2343, '8/6/2020')
,(12, 2428, '11/8/2020')
,(4, 2279, '8/25/2020')
,(23, 2223, '11/26/2020')
,(3, 2695, '11/24/2020')
,(7, 2259, '9/15/2020')
,(9, 2598, '9/25/2020')
,(6, 2701, '10/22/2020')
,(18, 2420, '11/11/2020')
,(12, 2681, '11/26/2020')
,(6, 2449, '7/12/2020')
,(10, 2885, '9/30/2020')
,(23, 2299, '11/11/2020')
,(7, 2277, '8/1/2020')
,(24, 2942, '9/30/2020')
,(19, 2353, '8/10/2020')
,(3, 2395, '9/21/2020')
,(12, 2187, '11/28/2020')
,(25, 2383, '8/31/2020')
,(2, 2064, '9/27/2020')
,(11, 2278, '10/31/2020')
,(5, 2130, '9/23/2020')
,(20, 2395, '9/2/2020')
,(23, 2980, '9/4/2020')
,(12, 2207, '8/14/2020')
, (15, 2065, '9/16/2020')
, (5, 2763, '11/2/2020')
, (21, 2085, '11/7/2020')
, (12, 2058, '9/15/2020')
, (23, 2459, '10/25/2020')
, (12, 2360, '11/24/2020')
, (3, 2519, '8/25/2020')
, (6, 2297, '7/18/2020')
, (1, 2269, '10/4/2020')
, (14, 2467, '9/10/2020')
, (13, 2274, '11/27/2020')
, (8, 2211, '10/28/2020')
, (15, 2346, '8/23/2020')
, (9, 2661, '10/2/2020')
, (25, 2846, '9/8/2020')
,(10, 2257, '10/19/2020')
, (14, 2359, '7/6/2020')
, (17, 2568, '9/18/2020')
, (11, 2667, '11/22/2020')
, (2, 2164, '7/18/2020')
, (8, 2298, '10/21/2020')
```

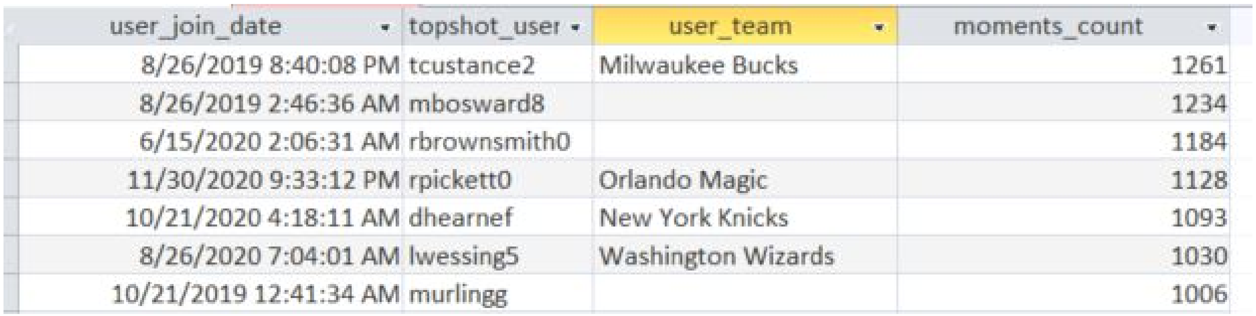
```sql
, (1, 2798, '9/6/2020')
, (13, 2688, '7/30/2020')
, (20, 2537, '9/8/2020')
, (20, 2779, '9/7/2020')
, (19, 2010, '9/23/2020')
, (5, 2707, '10/3/2020')
, (11, 2382, '10/23/2020')
, (10, 2021, '8/1/2020')
, (5, 2690, '10/14/2020')
, (17, 2984, '8/20/2020')
,(8, 2054, '8/3/2020')
,(15, 2314, '10/3/2020')
,(7, 2372, '7/3/2020')
,(21, 2254, '9/24/2020')

SELECT * FROM user_moments_collection

--Now let's insert information about packs available for purchase where users can
  buy their moments
insert into packs (pack_type, pack_purchase_price , moments_count , drop_number ,
  pack_circulation_status , pack_name)
values ('common', '20', '8', 3, 'available', 'base set')
,('rare', '99', '10', 1, 'sold out', 'lace em up')
,('common', '20', '8', 1, 'available', 'base set')
,('rare', '99', '10', 3, 'sold out', 'lace em up')
,('common', '20', '8', 2, 'available', 'base set')
,('rare', '99', '10', 3, 'sold out', 'lace em up')
,('common', '20', '8', 1, 'available', 'base set')
,('common', '20', '8', 1, 'available', 'base set')
,('common', '20', '8', 1, 'available', 'base set')
,('rare', '99', '10', 1, 'sold out', 'lace em up')
,('common', '20', '8', 2, 'available', 'base set')
,('common', '20', '8', 1, 'available', 'base set')
,('common', '20', '8', 3, 'available', 'base set')
,('common', '20', '8', 1, 'available', 'base set')
,('common', '20', '8', 3, 'available', 'base set')
,('common', '20', '8', 2, 'available', 'base set')
,('common', '20', '8', 3, 'available', 'base set')
,('common', '20', '8', 3, 'available', 'base set')
,('common', '20', '8', 3, 'available', 'base set')
, ('common', '20', '8', 2, 'available', 'base set')

--Now that we have our packs for sale, let's add most recent Pack transactions
insert into pack_purchase_order (topshot_user_id, pack_id, payment_type)
values (13, 16, 'debit card')
, (1, 16, 'paypal')
, (17, 15, 'ethereum')
, (4, 10, 'ethereum')
, (5, 9, 'paypal')
, (13, 16, 'credit card')
, (17, 14, 'paypal')
, (1, 7, 'ethereum')

--Now let's add moments that were most recently purchased
insert into moments_purchase_order (topshot_user_id, moment_unique_id,
  moment_purchase_price , payment_type)
values (14, 2591, 1457, 'ethereum')
, (10, 2694, 943, 'debit card')
, (23, 2277, 1987, 'paypal')
, (23, 2865, 2145, 'debit card')
, (23, 2660, 1488, 'ethereum')
, (15, 2899, 2166, 'paypal')
, (11, 2684, 1943, 'credit card')
,(19, 2436, 1972, 'credit card')

-- finally, let's add data to the flow blockchain which validates all our
  transactions
insert into flow_blockchain  (order_timestamp , pack_id, pack_po_transaction_id,
  moment_po_transaction_id, moment_unique_id)
values ('2020-06-09 08:04:02', 9, 7, null, null)
, ('2020-03-12 07:15:13', 18, 4, 101, 2079)
, ('2020-06-26 11:01:18', 20, 2, 102, 2748)
, ('2020-07-24 01:03:28', 4, 3, 105, 2179)
, ('2019-12-05 20:20:28', 15, 1, null, null)
, ('2020-01-22 08:41:14', 2, 6, 107, 2160)
, ('2020-06-05 15:30:05', 19, 3, 104, 2497)
, ('2020-07-18 02:33:49', 2, 1, 107, 2576)
, ('2020-07-14 11:47:55', 16, 8, 104, 2149)
,('2019-12-15 22:47:53', 6, 4, 104, 2764)
, ('2020-07-09 22:57:31', 10, 2, 107, 2554)
, ('2020-07-29 11:35:46', 18, 6, 102, 2581)
, ('2020-11-21 15:19:31', 13, 8, 103, 2202)
, ('2020-08-31 04:04:07', 4, 7, 104, 2236)
, ('2020-06-12 06:11:02', 3, 7, 102, 2430)
, ('2019-12-18 16:00:18', 6, 4, 101, 2133)
, ('2020-01-23 09:10:47', 17, 7, 105, 2825)
, ('2020-08-16 14:53:31', 6, 4, 108, 2092)


--Create view of User and their moments
CREATE VIEW TopShotUserMomentsLibrary
AS
SELECT
     topshot_user.topshot_username AS UserName
     , moments.moment_unique_id as MOMENT
FROM user_moments_collection
INNER JOIN user_moments_collection ON user_moments_collection.topshot_user_id =
  topshot_user.topshot_user_id
```

```sql
GO

-- Data Question #1: From our early adopters cohort, who owms the most moments and how many?

SELECT topshot_user.user_join_date, topshot_user.topshot_username, topshot_user.user_team, topshot_user.moments_count
FROM topshot_user
WHERE moments_count > 1000
ORDER BY topshot_user.moments_count DESC;

-- Data Question #2: From the most recent pack purchase order transactions, what pack was the best selling?

SELECT packs.pack_name, packs.pack_purchase_price, topshot_user.topshot_username
FROM topshot_user
INNER JOIN (packs INNER JOIN pack_purchase_order
ON packs.pack_id = pack_purchase_order.pack_id)
ON topshot_user.topshot_user_id = pack_purchase_order.topshot_user_id;


-- Data Question #3:  From most recent moment order transactions, who spent the most money and how much?
SELECT topshot_user.topshot_username, Count(moments_purchase_order.payment_type) AS  CountOfpayment_type
,Sum(moments_purchase_order.moment_purchase_price) AS SumOfmoment_purchase_price
FROM topshot_user INNER JOIN moments_purchase_order
ON topshot_user.topshot_user_id = moments_purchase_order.topshot_user_id
GROUP BY topshot_user.topshot_username
ORDER BY Count(moments_purchase_order.payment_type);

-- Data Question #4: From our most recent moment purchases, what was the average transaction per moment type by each user?
SELECT topshot_user.topshot_username,
Avg(moments_purchase_order.moment_purchase_price) AS AvgOfmoment_purchase_price, moments.moment_type
FROM moments INNER JOIN (topshot_user INNER JOIN moments_purchase_order
ON topshot_user.topshot_user_id = moments_purchase_order.topshot_user_id)
ON moments.moment_unique_id = moments_purchase_order.moment_unique_id
GROUP BY topshot_user.topshot_username, moments.moment_type
ORDER BY topshot_user.topshot_username;

--Data Question #5: What was the most popular payment type from the most recent transactions?
SELECT Count(moments_purchase_order.moment_po_transaction_id)
AS CountOfmoment_po_transaction_id, moments_purchase_order.payment_type
FROM moments_purchase_order
GROUP BY moments_purchase_order.payment_type;
```

Data Question #1: From our early adopter cohort, who owns the highest amount of Moments?

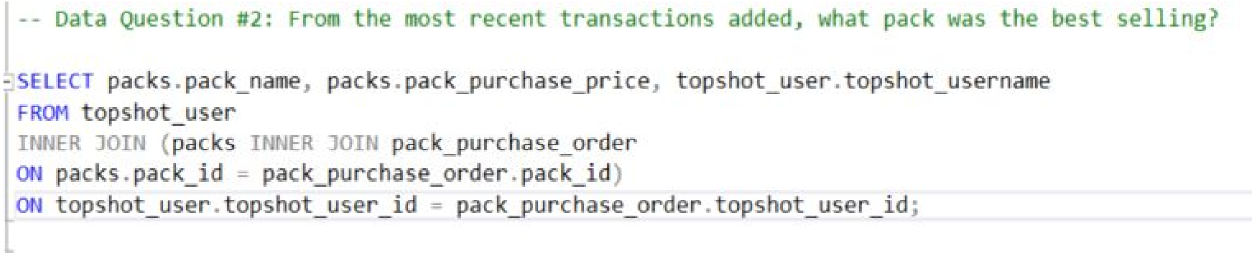


```sql
-- Data Question #1: From our early adopters cohort, who owms the most moments and how many?

SELECT topshot_user.user_join_date, topshot_user.topshot_username, topshot_user.user_team, topshot_user.moments_count
FROM topshot_user
WHERE moments_count > 1000
ORDER BY topshot_user.moments_count DESC;
```

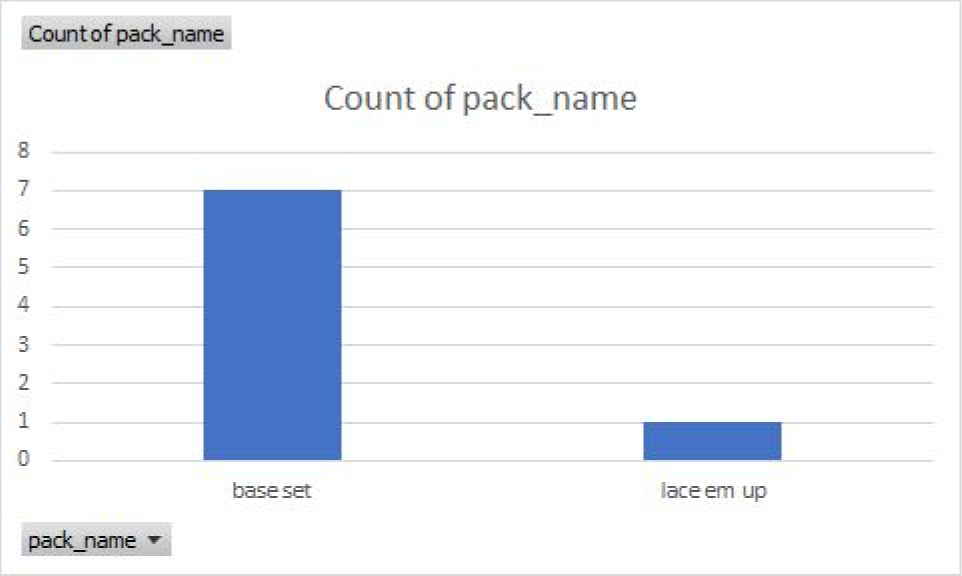


user_join_date	topshot_user	user_team	moments_count
8/26/2019 8:40:08 PM	tcustance2	Milwaukee Bucks	1261
8/26/2019 2:46:36 AM	mbosward8		1234
6/15/2020 2:06:31 AM	rbrownsmith0		1184
11/30/2020 9:33:12 PM	rpickett0	Orlando Magic	1128
10/21/2020 4:18:11 AM	dhearnef	New York Knicks	1093
8/26/2020 7:04:01 AM	lwessing5	Washington Wizards	1030
10/21/2019 12:41:34 AM	murlingg		1006

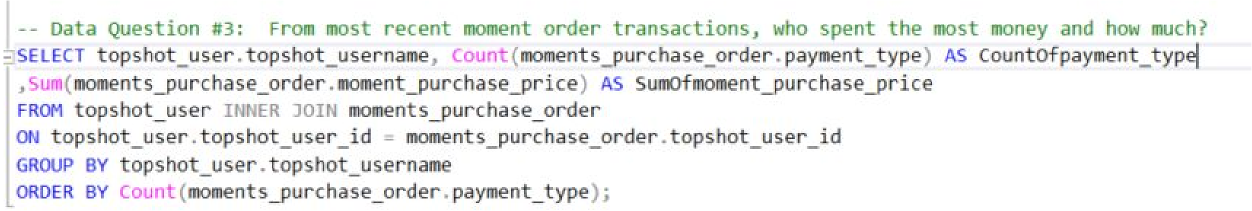
Data Question #2: From the most recent transactions added, what pack was the best selling?



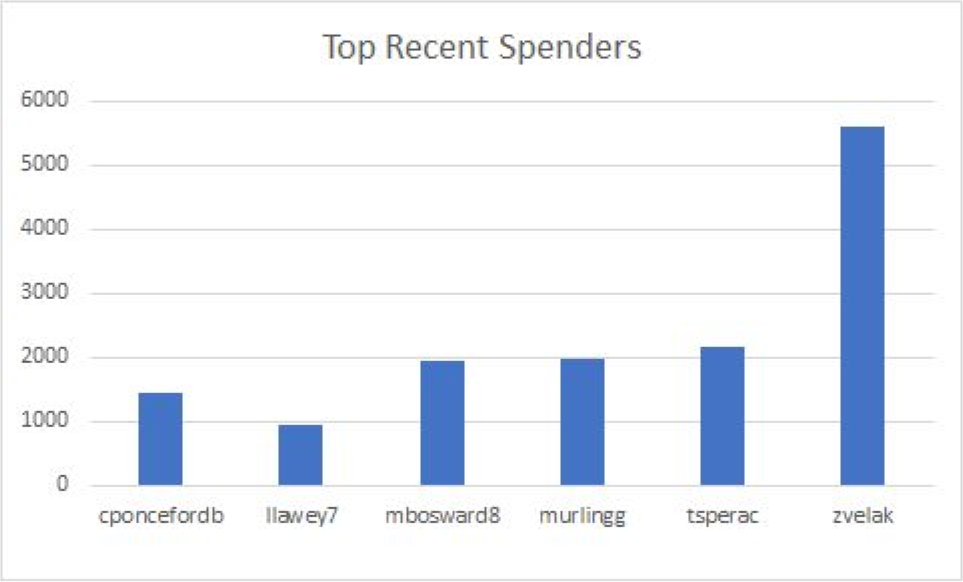
```sql
-- Data Question #2: From the most recent transactions added, what pack was the best selling?

SELECT packs.pack_name, packs.pack_purchase_price, topshot_user.topshot_username
FROM topshot_user
INNER JOIN (packs INNER JOIN pack_purchase_order
ON packs.pack_id = pack_purchase_order.pack_id)
ON topshot_user.topshot_user_id = pack_purchase_order.topshot_user_id;
```



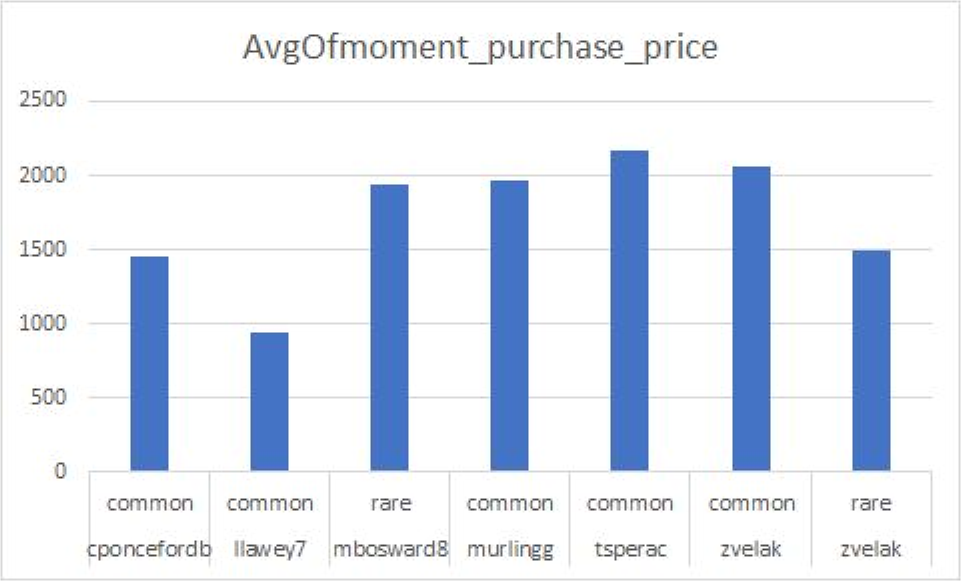
Data Question #3: From the most recent moment order transactions, who spend the most money and how much?



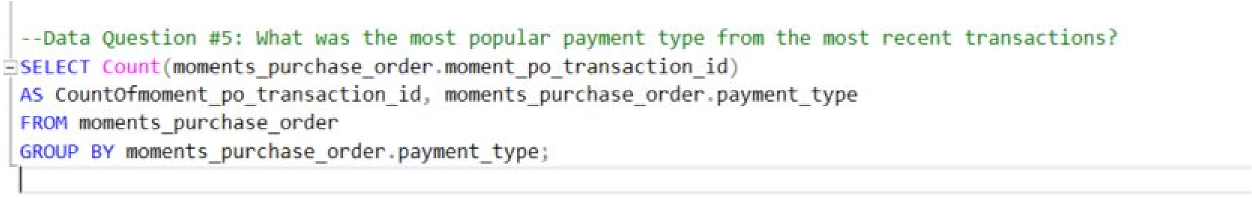
```
-- Data Question #3:  From most recent moment order transactions, who spent the most money and how much?
SELECT topshot_user.topshot_username, Count(moments_purchase_order.payment_type) AS CountOfpayment_type
,Sum(moments_purchase_order.moment_purchase_price) AS SumOfmoment_purchase_price
FROM topshot_user INNER JOIN moments_purchase_order
ON topshot_user.topshot_user_id = moments_purchase_order.topshot_user_id
GROUP BY topshot_user.topshot_username
ORDER BY Count(moments_purchase_order.payment_type);
```



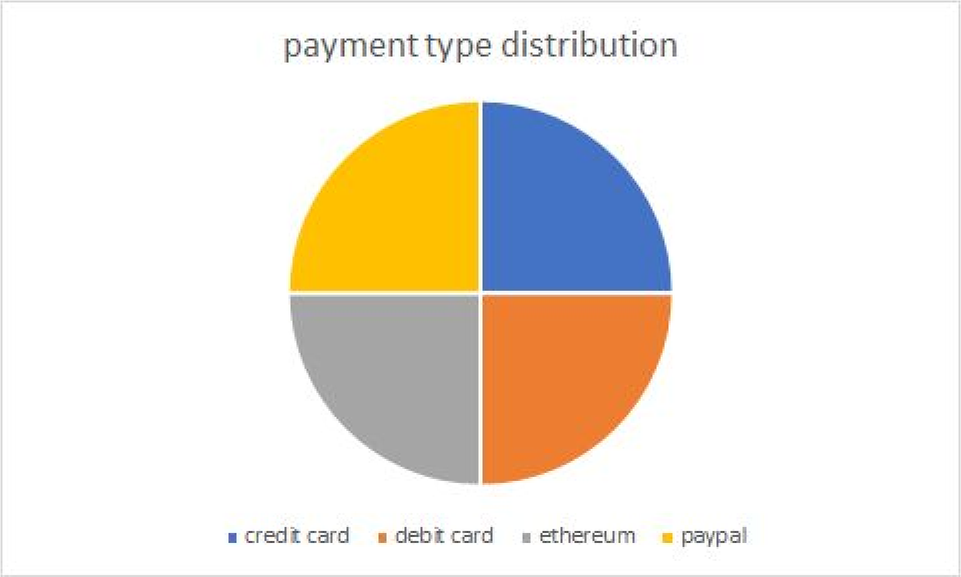
Data question #4: From our most recent moment purchases, what was the average transaction per moment type by each user?



Data Question #5: What was the most popular payment type from the most recent transactions?



```
--Data Question #5: What was the most popular payment type from the most recent transactions?
SELECT Count(moments_purchase_order.moment_po_transaction_id)
AS CountOfmoment_po_transaction_id, moments_purchase_order.payment_type
FROM moments_purchase_order
GROUP BY moments_purchase_order.payment_type;
```


payment type distribution
credit card
debit card
ethereum
paypal