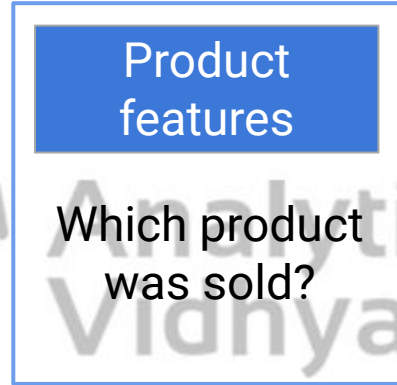
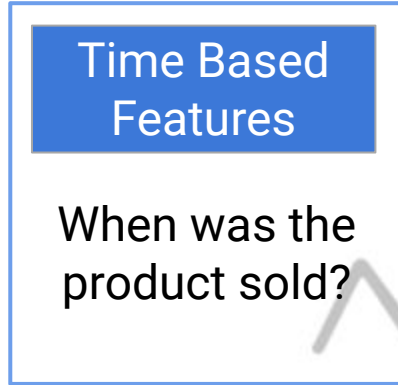
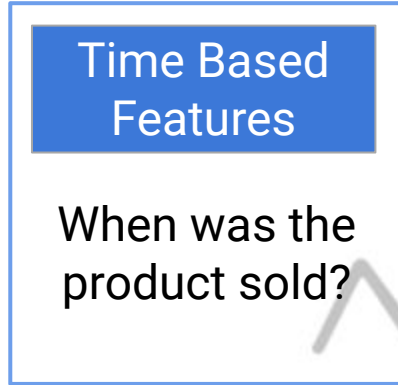


Data Exploration Insights

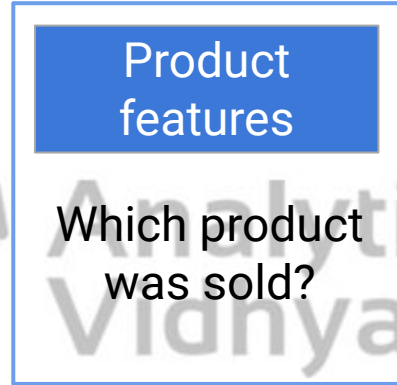
Dataset Structure



Dataset Structure



(232287, 7)



(30, 6)



(76, 9)

Weekly Sales Dataset

	WEEK_END_DATE	STORE_NUM	UPC	BASE_PRICE	FEATURE	DISPLAY	UNITS
0	14-Jan-09	367	1111009477	1.57	0	0	13
1	14-Jan-09	367	1111009497	1.39	0	0	20
2	14-Jan-09	367	1111085319	1.88	0	0	14
3	14-Jan-09	367	1111085345	1.88	0	0	29
4	14-Jan-09	367	1111085350	1.98	0	0	35

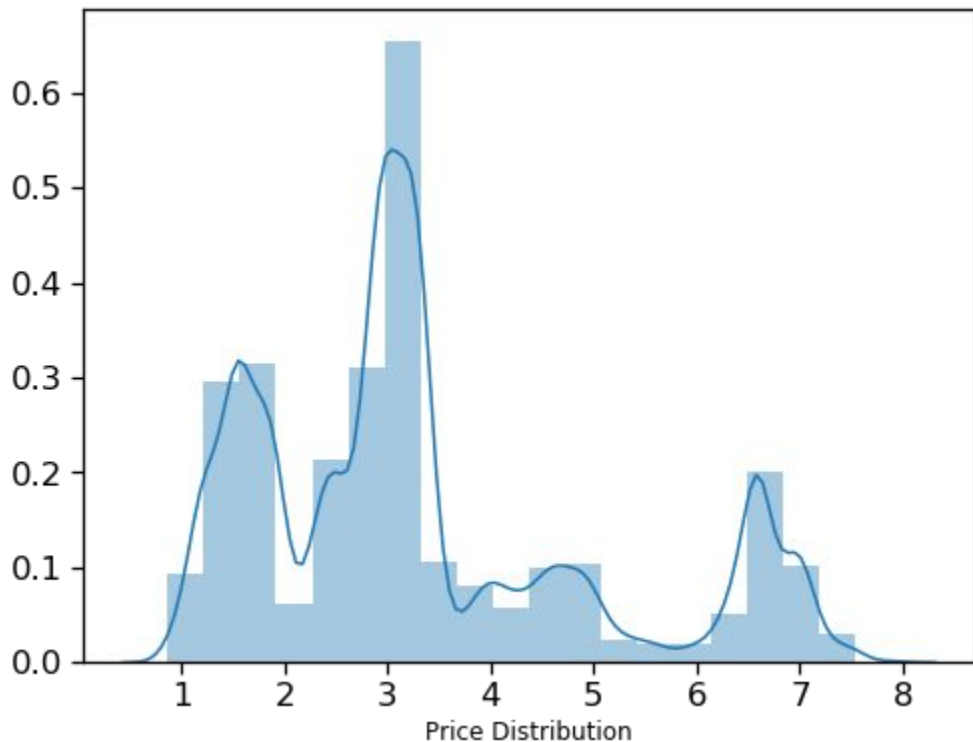
Week End Date

- Data for past 142 weeks - 14 Jan 2009 to 28 Sep 2011
- All dates are 7 days apart
- No missing dates during this period

Product Code and Store ID

- UPC - 30 unique product codes
- Each UPC has minimum one unit sold per week
- Store_num - 76 unique store ID
- Each store sells minimum of one product per week

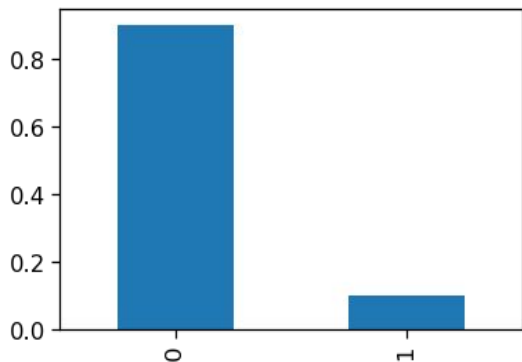
Product Base Price



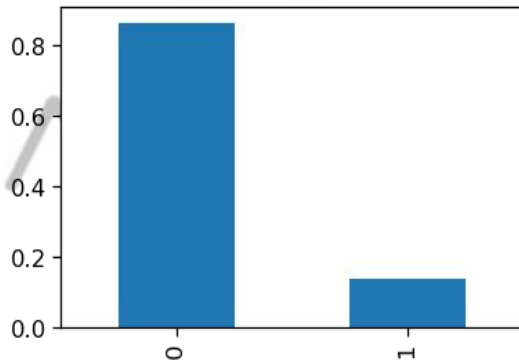
- Base Price Range from 1\$ - 8\$ for all products
- No extreme values

Featured and Display Products

Featured



In-store Display



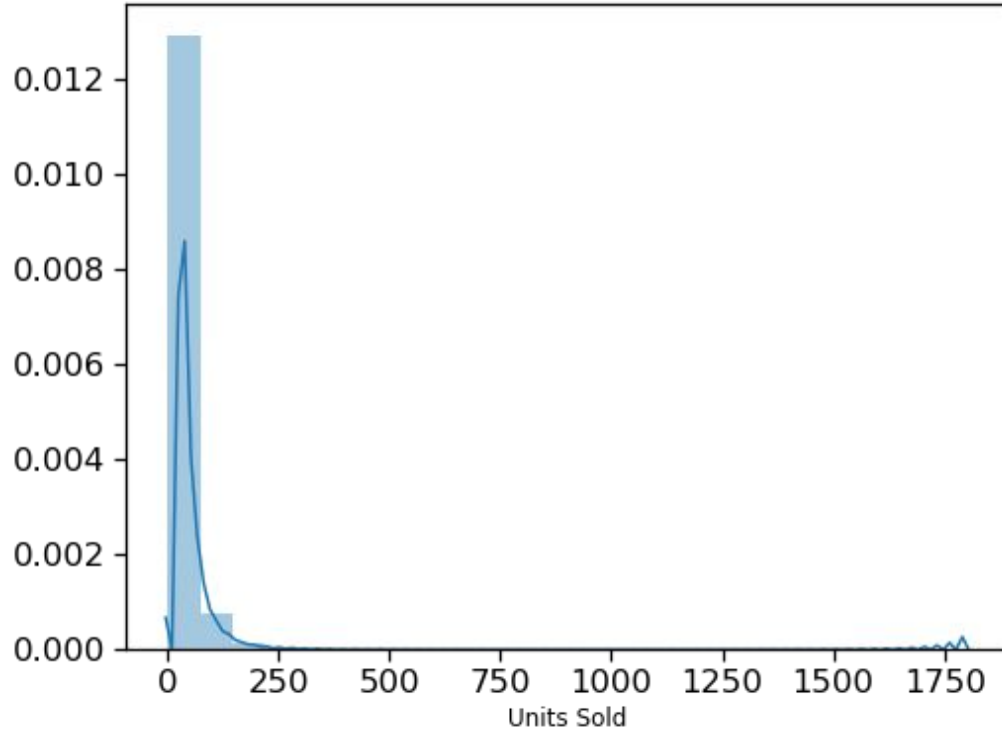
- 10% featured products
- 13% products on display

Featured and Display Products

DISPLAY	0	1
FEATURE		
0	0.821824	0.078287
1	0.043175	0.056714

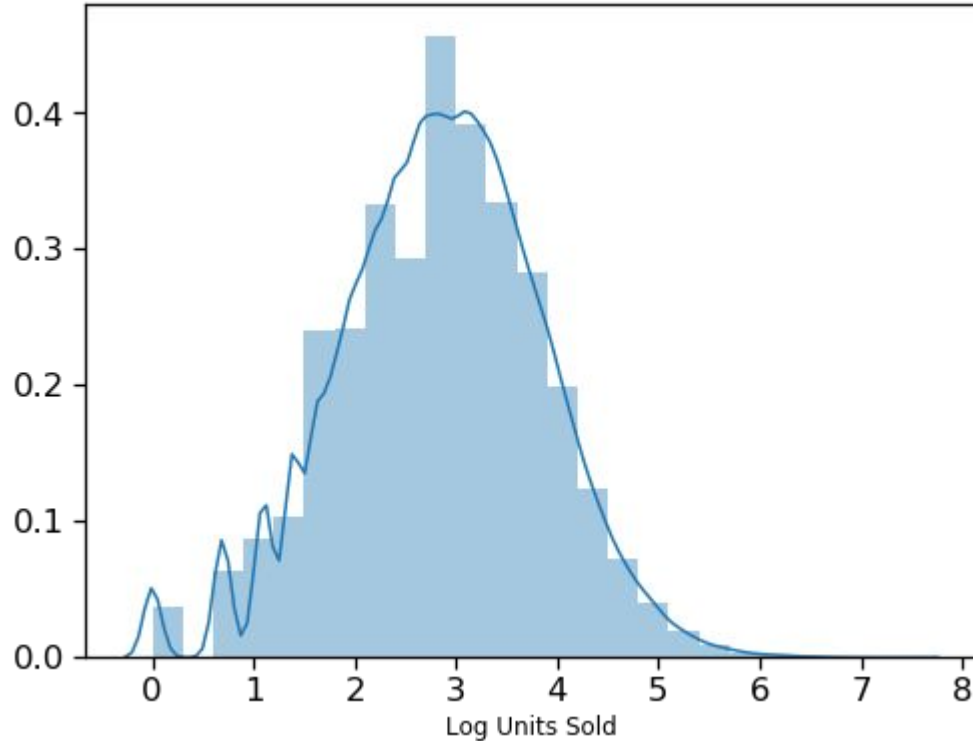
- 10% featured products
- 13% products on display
- Only 5% products were on in-store display and featured

Unit Sale Distribution



- Most values lie in range 0 - 250
- There are a few outliers

Unit Sale Distribution



- Most values lie in range 0 - 250
- There are a few outliers
- After log transformation, distribution looks closer to a normal distribution

Product Dataset

	UPC	DESCRIPTION	MANUFACTURER	CATEGORY	SUB_CATEGORY	PRODUCT_SIZE
0	1111009477	PL MINI TWIST PRETZELS	PRIVATE LABEL	BAG SNACKS	PRETZELS	15 OZ
1	1111009497	PL PRETZEL STICKS	PRIVATE LABEL	BAG SNACKS	PRETZELS	15 OZ
2	1111009507	PL TWIST PRETZELS	PRIVATE LABEL	BAG SNACKS	PRETZELS	15 OZ
3	1111038078	PL BL MINT ANTSPCTC RINSE	PRIVATE LABEL	ORAL HYGIENE PRODUCTS	MOUTHWASHES (ANTISEPTIC)	500 ML
4	1111038080	PL ANTSPCTC SPG MNT MTHWS	PRIVATE LABEL	ORAL HYGIENE PRODUCTS	MOUTHWASHES (ANTISEPTIC)	500 ML

Product Categories

- 4 Categories
 - Bag Snacks
 - Frozen Pizza
 - Oral Hygiene
 - Cold Cereal



Product Sub-Categories

CATEGORY	SUB_CATEGORY
BAG SNACKS	PRETZELS
COLD CEREAL	ALL FAMILY CEREAL
COLD CEREAL	ADULT CEREAL
COLD CEREAL	KIDS CEREAL
FROZEN PIZZA	PIZZA/PREMIUM
ORAL HYGIENE PRODUCTS	MOUTHWASHES (ANTISEPTIC)
ORAL HYGIENE PRODUCTS	MOUTHWASH/RINSES AND SPRAYS

- 7 sub-categories
- Bag snacks - 1 subcategory
- Frozen pizza - 1 subcategory
- Oral hygiene - 2 subcategories
- Cold Cereal - 3 subcategories

Product Size

	CATEGORY	SUB_CATEGORY	PRODUCT_SIZE
0	BAG SNACKS	PRETZELS	15 OZ
14	BAG SNACKS	PRETZELS	16 OZ
25	BAG SNACKS	PRETZELS	10 OZ
6	COLD CEREAL	ADULT CEREAL	20 OZ
7	COLD CEREAL	ALL FAMILY CEREAL	18 OZ
19	COLD CEREAL	KIDS CEREAL	15 OZ
20	COLD CEREAL	KIDS CEREAL	12.2 OZ
5	COLD CEREAL	ALL FAMILY CEREAL	12.25 OZ
13	COLD CEREAL	ALL FAMILY CEREAL	12 OZ
8	FROZEN PIZZA	PIZZA/PREMIUM	32.7 OZ
9	FROZEN PIZZA	PIZZA/PREMIUM	30.5 OZ
10	FROZEN PIZZA	PIZZA/PREMIUM	29.6 OZ
24	FROZEN PIZZA	PIZZA/PREMIUM	22.7 OZ
21	FROZEN PIZZA	PIZZA/PREMIUM	29.8 OZ
23	FROZEN PIZZA	PIZZA/PREMIUM	28.3 OZ
3	ORAL HYGIENE PRODUCTS	MOUTHWASHES (ANTISEPTIC)	500 ML
16	ORAL HYGIENE PRODUCTS	MOUTHWASH/RINSES AND SPRAYS	1 LT
17	ORAL HYGIENE PRODUCTS	MOUTHWASHES (ANTISEPTIC)	1 LT

- 7 sub-categories
- Bag snacks - 1 subcategory
- Frozen pizza - 1 subcategory
- Oral hygiene - 2 subcategory
- Cold Cereal - 3 subcategory

Product Description

GM CHEERIOS	2
RLDGLD TINY TWISTS PRTZL	1
PL SR CRUST SUPRM PIZZA	1
KELL BITE SIZE MINI WHEAT	1
PL RAISIN BRAN	1
PL BL MINT ANTSPTC RINSE	1
KELL FROSTED FLAKES	1
PL SR CRUST PEPPRN PIZZA	1
DIGRN PEPP PIZZA	1
PL SR CRUST 3 MEAT PIZZA	1
LSTRNE CL MINT ANTSPTC MW	1
DIGIORNO THREE MEAT	1
GM HONEY NUT CHEERIOS	1
PL HONEY NUT TOASTD OATS	1
SCOPE ORIG MINT MOUTHWASH	1
CREST PH CLN MINT RINSE	1
PL PRETZEL STICKS	1
PL MINI TWIST PRETZELS	1

- 29 unique description
- More granular description of product

.
. .
. .
. .

Manufacturers

- 9 Manufacturers
- Private label supplies all 4 category products
- Other 8 manufacturers produce only 1 category product

Warner

Kellogg's

Tony's

America's Pretzel Bakery Since 1909
SNYDER'S
OF HANOVER

TOMBSTONE
PIZZA

FritoLay

General
Mills

P&G

PRIVATE LABEL

Store Dataset

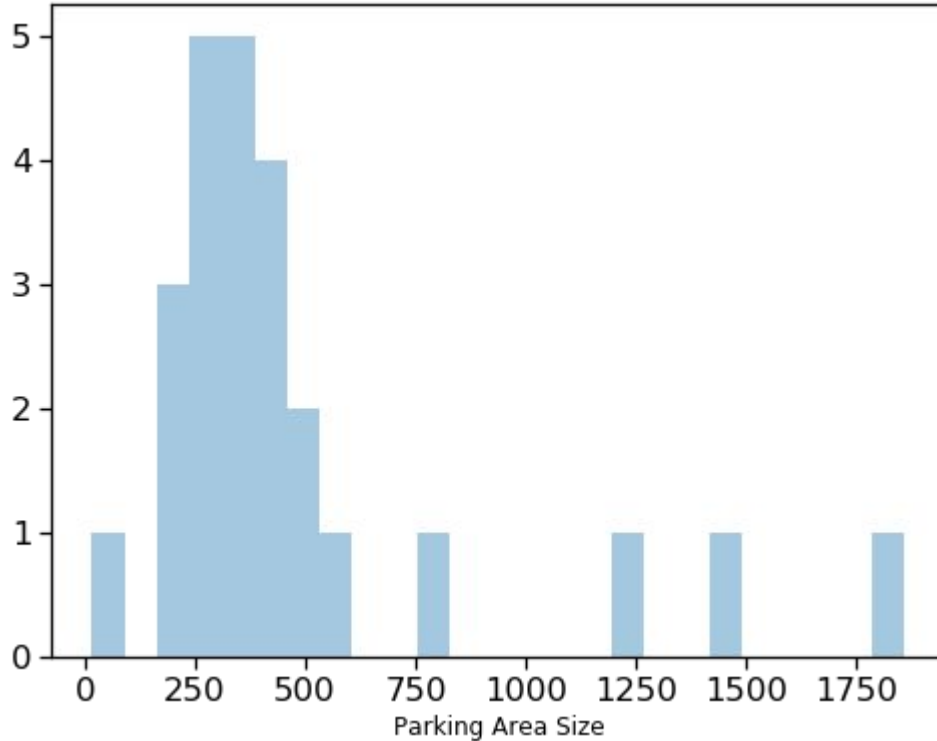
STORE_ID	STORE_NAME	ADDRESS_CITY_NAME	ADDRESS_STATE_PROV_CODE	MSA_CODE	SEG_VALUE_NAME	PARKING_SPACE_QTY	SALES_AREA_SIZE_NUM	AVG_WEEKLY_BASKETS
367	15TH & MADISON	COVINGTON	KY	17140	VALUE	196.0	24721	12707
389	SILVERLAKE	ERLANGER	KY	17140	MAINSTREAM	408.0	46073	24767
613	EAST ALLEN	ALLEN	TX	19100	MAINSTREAM	464.0	64926	29386
623	HOUSTON	HOUSTON	TX	26420	MAINSTREAM	NaN	46930	36741
2277	ANDERSON TOWNE CTR	CINCINNATI	OH	17140	UPSCALE	NaN	81958	54053

Store Name and Location



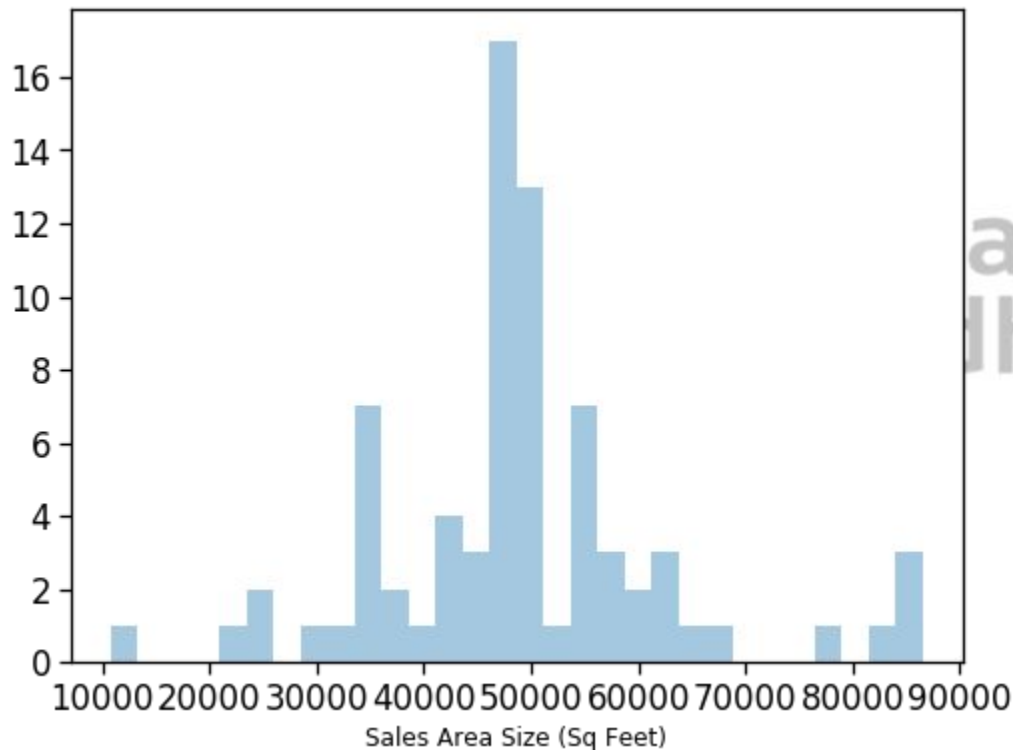
- 76 Store ID
- 72 Store Names
- Located in 51 cities
- Spread over 4 States

Parking Space Area



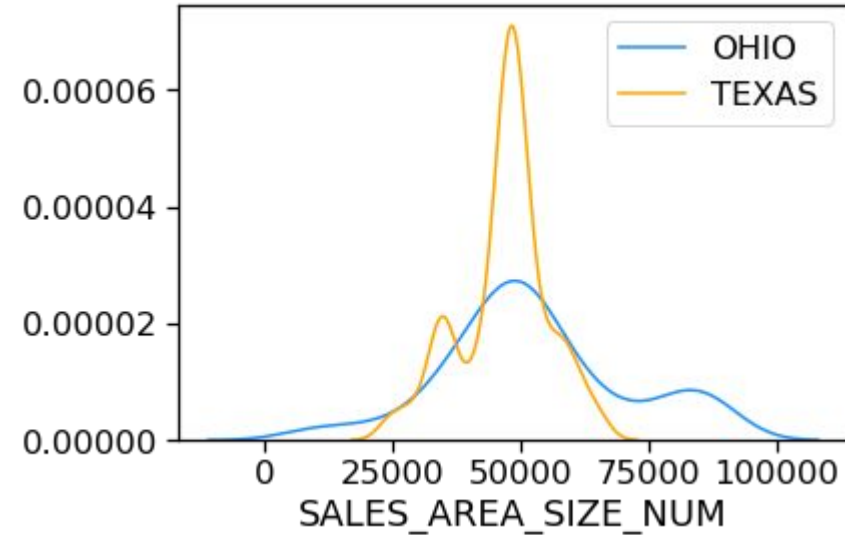
- Only 25 stores have parking space area listed
- Mostly between 250-500 units

Store Sales Area



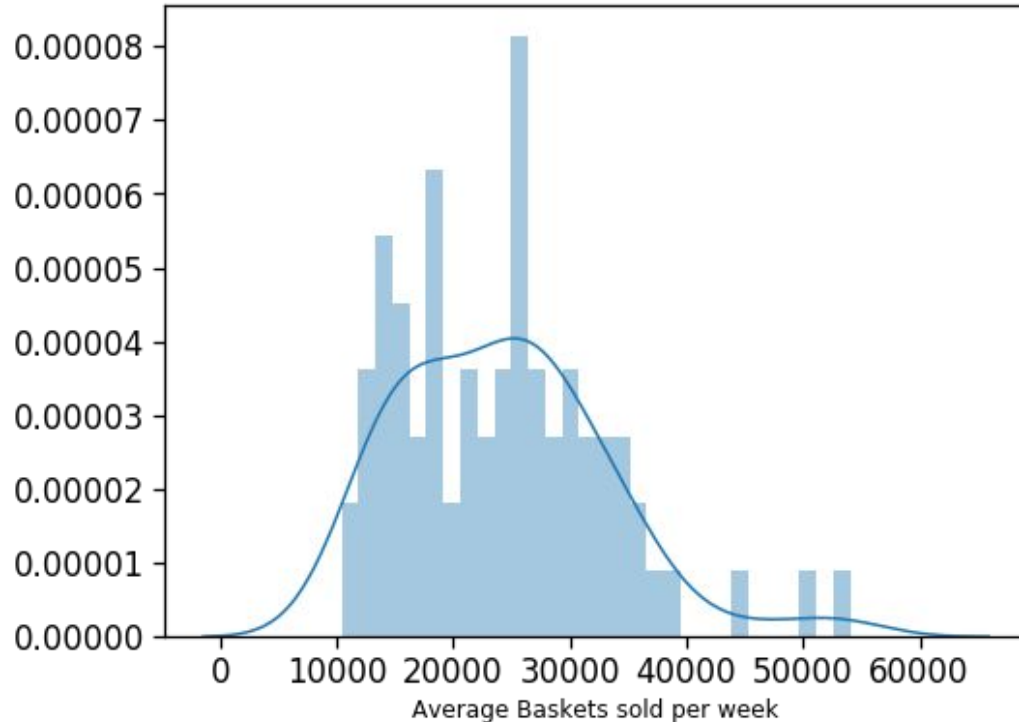
- Most stores have area 30-70 K
- Less than 20 stores with area less than 30k or greater than 90k

Sales Area for Ohio and Texas



- 93% of stores are in Ohio and Texas
- Ohio has stores with sales area range between 1k-100k
- Texas mostly has stores between sales area 30k to 60k

Weekly Average Sale



- Weekly average follows rough normal distribution
- Most weeks have average around 25000

Store Segments

```
store_data['SEG_VALUE_NAME'].value_counts()
```

MAINSTREAM 43

VALUE 19

UPSCALE 14

Name: SEG_VALUE_NAME, dtype: int64

- **Upscale stores:** Located in high income neighborhoods.

- **Mainstream stores:** Located in middle class areas, offering a mix of upscale and value product.

- **Value stores:** Focus on low prices products targeting low income customers.

