```
<InputOperation>
id: FINN Code
```

default

```
keys<[finn_code]>
FINN Code <type 'dict'>
```

default

```
<ValidateFinnCode>
rules: only_numeric_values, starts_with_one_or_two, max_len_eight_or_nine
id: Validate Finn Code
```

default

```
keys<[finn_code]>
Validated Finn Code <type 'dict'>
```

thread → thread → thread → thread

```
<FinnStatisticsInfoConnector>
from: 'https://www.finn.no/prisstatistikk/<[finn_code]>'
id: FINN Statistics Info Connector
```

```
<FinnCommunityStatisticsConnector>
from: 'https://profil.nabolag.no/<[finn_code]>'
id: FINN CommunityStatistics Connector
```

```
<FinnAdvertInfoConnector>
from: 'https://finn.no/realestate/homes/ad.html?finnkode=<[finn_code]>'
id: FINN Advert Info Connector
```

```
<FinnOwnershipHistoryConnector>
from: 'https://finn.no/realestate/ownershiphistory.html?finnkode=<[finn_code]>'
id: FINN Ownership History Connector
```

thread

```
keys<[sqm_price, images, views, edited, firstpublished, published,
city_area, hist_data_city_area, hist_data_city_area_count, municipality, hist_data_municipality, hist_data_municipality_count,
city_area_sqm_price, municipality_sqm_price]>
FINN Statistics Information <type 'dict'>
```

```
keys<[nabolag]>
FINN Community Statistics <type 'dict'>
```

```
keys<[finn_adresse, prisantydning, status, omkostninger, totalpris, kommunaleavg, boligtype, eieformbolig, soverom,
primrrom, bruksareal, bygger, energimerking, tomteareal, bruttoareal, formuesverdi, finnkode, sistendret,
referanse, forste_visning, andre_visning]>
FINN Advert Information <type 'dict'>
```

```
keys<[eieform, kommunenr, gardsnr, bruksnr, historikk]>
FINN Ownership History <type 'dict'>
```

default → default → default → default

```
<Multiplex>
id: Multiplex Retrieved Finn Information
```

default

```
keys<[andre_visning, boligtype, bruksareal, bruksnr, bruttoareal, bygger, city_area, city_area_sqm_price, edited,
eieform, eieformbolig, energimerking, finn_adresse, finnkode, firstpublished, formuesverdi, forste_visning, gardsnr,
hist_data_city_area, hist_data_city_area_count, hist_data_municipality, hist_data_municipality_count, historikk, images, kommunaleavg, kommunenr, municipality,
municipality_sqm_price, nabolag, omkostninger, primrrom, prisantydning, published, referanse, sistendret, soverom,
sqm_price, status, tomteareal, totalpris, views]>
Multiplexed Finn Information <type 'dict'>
```

thread → thread → thread → thread

```
<Extract>
id: Extract <key 'published'>
```

```
<Extract>
id: Extract <key 'historikk'>
```

```
<Extract>
id: Extract <key 'prisantydning'>
```

```
<Extract>
id: Extract <key 'nabolag'>
```

thread

```
keys<[historikk]>
Ownership History <type 'dict'>
```

```
keys<[prisantydning]>
List Price of Real-estate <type 'dict'>
```

thread

```
keys<[published]>
Publishing Date of Advertisement <type 'dict'>
```

```
keys<[nabolag]>
Finn Community Statistics <type 'dict'>
```

thread

```
<ExtractFirstRow>
id: Extract the Newest Sale with Date
```

dataframe / row

```
<AddRowToDataFrame>
id: Add List Price to Ownership History
```

thread

```
<FinnCommunitySubModel>
Process: FinnCommunityProcess
id: Processing Finn Community Statistics
```

thread → thread

```
keys<[Tinglyst, Boligtype, Pris]>
Newest Sale with Date <type 'dict'>
```

```
keys<[age_distribution, age_distribution_children, bysykler, bysykler_location, civil_status, education,
environment_rating, family_composition, family_rating, gardens_rating, groceries, groceries_location,
higheducation, higheducation_location, highschools, highschools_location, housing_age, housing_area,
housing_ownership, housing_prices, housing_stock, income, info, kindergardens,
kindergardens_location, ladepunkt, ladepunkt_location, noise_rating, primarytransport, rating_activity,
rating_food_selection, rating_hiking, rating_parking, rating_public_transportation, rating_serving, rating_traffic,
roads_rating, safety_rating, schools, schools_location, services, services_location,
sport, sport_location, transport, transport_location]>
Processed Finn Community Statistics <type 'dict'>
```

thread

```
<CheckNewestDate>
id: Publishing Date of Advertisement Later Than Newest Sale
```

true / false

```
keys<[Tinglyst, Boligtype, Pris]>
Ownership History with List Price <type 'dict'>
```

dataframe

```
keys<[Tinglyst, Boligtype, Pris]>
Final Sales Price of Advertised Real-Estate <type 'dict'>
```

```
keys<[Tinglyst, Boligtype, Pris]>
Advertised Real-Estate Not Sold / Registered Yet <type 'dict'>
```

row

```
<AddRowToDataFrame>
id: Add Final Sales Price to to Ownership History
```

thread

```
keys<[Tinglyst, Boligtype, Pris]>
Ownership History With List Price and Final Sales Price <type 'dict'>
```

default

```
<RateOfChange>
id: Calculate Percentage Change in Real-estate Price
```

default

```
keys<[historikk]>
Ownership History with Percentage Change in Real-estate Price <type 'dict'>
```

default

```
<Multiplex>
id: Multiplex Finn Information, Ownership History
with Price Change and Community Statistics
```

default

```
keys<[age_distribution, age_distribution_children, andre_visning, boligtype, bruksareal, bruksnr, bruttoareal, bygger, bysykler, bysykler_location, city_area, city_area_sqm_price,
civil_status, edited, education, eieform, eieformbolig, energimerking, environment_rating, family_composition, family_rating, finn_adresse, finnkode, firstpublished,
formuesverdi, forste_visning, gardens_rating, gardsnr, groceries, groceries_location, higheducation, higheducation_location, highschools, highschools_location, hist_data_city_area, hist_data_city_area_count,
hist_data_municipality, hist_data_municipality_count, historikk, housing_age, housing_area, housing_ownership, housing_prices, housing_stock, images, income, info, kindergardens,
kindergardens_location, kommunaleavg, kommunenr, ladepunkt, ladepunkt_location, municipality, municipality_sqm_price, nabolag, noise_rating, omkostninger, primarytransport, primrrom,
prisantydning, published, rating_activity, rating_food_selection, rating_hiking, rating_parking, rating_public_transportation, rating_serving, rating_traffic, referanse, roads_rating, safety_rating,
schools, schools_location, services, services_location, sistendret, soverom, sport, sport_location, sqm_price, status, tomteareal, totalpris,
transport, transport_location, views]>
Multiplexed Finn Information <type 'dict'>
```

default

```
<OutputOperation>
id: Multiplexed Finn Information
```

default

```
keys<[andre_visning, boligtype, bruksareal, bruksnr, bruttoareal, bygger, city_area, city_area_sqm_price, edited, eieform, eieformbolig, energimerking, finn_adresse, finnkode,
firstpublished, formuesverdi, forste_visning, gardsnr, hist_data_city_area, hist_data_city_area_count, hist_data_municipality, hist_data_municipality_count, historikk, images, kommunaleavg, kommunenr, municipality, municipality_sqm_price,
nabolag, omkostninger, primrrom, prisantydning, published, referanse, sistendret, soverom, sqm_price, status, tomteareal, totalpris, views]>
Finn Information <type 'dict'>
```