

# Package ‘r02pro’

July 5, 2021

**Title** R Programming: Zero to Pro

**Version** 0.1

**Description** This is a companion package of the book “R Programming: Zero to Pro” <<https://r02pro.github.io/>>. It contains the datasets used in the book and provides interactive exercises corresponding to the book. It covers a wide range of topics including visualization, data transformation, tidying data, data input and output.

**License** GPL-2

**URL** <https://r02pro.github.io/>

**Encoding** UTF-8

**Depends** R (>= 3.5.0)

**RoxygenNote** 7.1.1

**Imports** learnr

**LazyData** true

**NeedsCompilation** no

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ahp

*Ames Housing Price data.*

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### Description

A dataset of 2048 houses in Ames, Iowa from 2006 to 2010, with 56 features including the sale date and price.

### Usage

ahp

### Format

A data frame with variables:

**dt\_sold** Date Sold

**yr\_sold** Year Sold

**mo\_sold** Month Sold

**yr\_built** Original construction date

**yr\_remodel** Remodel date (same as construction date if no remodeling or additions)

**bldg\_class** The building class

- 20: 1-STORY 1946 & NEWER ALL STYLES
- 30: 1-STORY 1945 & OLDER
- 40: 1-STORY W/FINISHED ATTIC ALL AGES
- 45: 1-1/2 STORY - UNFINISHED ALL AGES
- 50: 1-1/2 STORY FINISHED ALL AGES
- 60: 2-STORY 1946 & NEWER
- 70: 2-STORY 1945 & OLDER
- 75: 2-1/2 STORY ALL AGES
- 80: SPLIT OR MULTI-LEVEL
- 85: SPLIT FOYER
- 90: DUPLEX - ALL STYLES AND AGES
- 120: 1-STORY PUD (Planned Unit Development) - 1946 & NEWER
- 150: 1-1/2 STORY PUD - ALL AGES
- 160: 2-STORY PUD - 1946 & NEWER
- 180: PUD - MULTILEVEL - INCL SPLIT LEV/FOYER
- 190: 2 FAMILY CONVERSION - ALL STYLES AND AGES

**bldg\_type** Type of dwelling

- 1Fam: Single-family Detached
- 2FmCon: Two-family Conversion; originally built as one-family dwelling
- Duplx: Duplex

- TwnhsE: Townhouse End Unit
- TwnhsI: Townhouse Inside Unit

**house\_style** Style of dwelling

- 1Story: One story
- 1.5Fin: One and one-half story: 2nd level finished
- 1.5Unf: One and one-half story: 2nd level unfinished
- 2Story: Two story
- 2.5Fin: Two and one-half story: 2nd level finished
- 2.5Unf: Two and one-half story: 2nd level unfinished
- SFoyer: Split Foyer
- SLvl: Split Level

**zoning** Identifies the general zoning classification of the sale

- A: Agriculture
- C: Commercial
- FV: Floating Village Residential
- I: Industrial
- RH: Residential High Density
- RL: Residential Low Density
- RP: Residential Low Density Park
- RM: Residential Medium Density

**neighborhd** Physical locations within Ames city limits

- Blmngtn: Bloomington Heights
- Blueste: Bluestem
- BrDale: Briardale
- BrkSide: Brookside
- ClearCr: Clear Creek
- CollgCr: College Creek
- Crawfor: Crawford
- Edwards: Edwards
- Gilbert: Gilbert
- IDOTRR: Iowa DOT and Rail Road
- MeadowV: Meadow Village
- Mitchel: Mitchell
- Names: North Ames
- NoRidge: Northridge
- NPkVill: Northpark Villa
- NridgHt: Northridge Heights
- NWAmes: Northwest Ames
- OldTown: Old Town
- SWISU: South & West of Iowa State University
- Sawyer: Sawyer

- SawyerW: SawyerW
- Somerst: Somerset
- StoneBr: Stone Brook
- Timber: Timberland
- Veenker: Veenker

**oa\_cond** Overall condition rating

- 10: Very Excellent
- 9: Excellent
- 8: Very Good
- 7: Good
- 6: Above Average
- 5: Average
- 4: Below Average
- 3: Fair
- 2: Poor
- 1: Very Poor

**oa\_qual** Overall material and finish quality

- 10: Very Excellent
- 9: Excellent
- 8: Very Good
- 7: Good
- 6: Above Average
- 5: Average
- 4: Below Average
- 3: Fair
- 2: Poor
- 1: Very Poor

**func** Home functionality rating

- Typ: Typical Functionality
- Min1: Minor Deductions 1
- Min2: Minor Deductions 2
- Mod: Moderate Deductions
- Maj1: Major Deductions 1
- Maj2: Major Deductions 2
- Sev: Severely Damaged
- Sal: Salvage only

**liv\_area** living area square feet

**1fl\_area** First Floor square feet

**2fl\_area** Second floor square feet

**tot\_rms** Total rooms

**bedroom** Number of bedrooms

**bathroom** Number of bathrooms

**kit** Number of kitchens

**kit\_qual** Kitchen quality

**central\_air** Central air conditioning

- N: No
- Y: Yes

**elect** Electrical system

- SBkr: Standard Circuit Breakers & Romex
- FuseA: Fuse Box over 60 AMP and all Romex wiring (Average)
- FuseF: 60 AMP Fuse Box and mostly Romex wiring (Fair)
- FuseP: 60 AMP Fuse Box and mostly knob & tube wiring (poor)
- Mix: Mixed

**bsmt\_area** Total square feet of basement area

**bsmt\_cond** General condition of the basement

**bsmt\_exp** Walkout or garden level basement walls

- Gd: Good Exposure
- Av: Average Exposure (split levels or foyers typically score average or above)
- Mn: Minimum Exposure
- No: No Exposure
- NA: No Basement

**bsmt\_ht** Height of the basement

- Excellent: 100+ inches
- Good: 90-99 inches
- Average: 80-89 inches
- Fair: 70-79 inches
- Poor: <70 inches
- NA: No Basement

**bsmt\_fin\_qual** Quality of basement finished area

- GLQ: Good Living Quarters
- ALQ: Average Living Quarters
- BLQ: Below Average Living Quarters
- Rec: Average Rec Room
- LwQ: Low Quality
- Unf: Unfinished
- NA: No Basement

**ext\_cond** Present condition of the material on the exterior

**ext\_cover** Exterior covering on house

- AsbShng: Asbestos Shingles
- AsphShn: Asphalt Shingles
- BrkComm: Brick Common

- BrkFace: Brick Face
- CBlock: Cinder Block
- CemntBd: Cement Board
- HdBoard: Hard Board
- ImStucc: Imitation Stucco
- MetalSd: Metal Siding
- Other: Other
- Plywood: Plywood
- PreCast: PreCast
- Stone: Stone
- Stucco: Stucco
- VinylSd: Vinyl Siding
- Wd Sdng: Wood Siding
- WdShing: Wood Shingles

**ext\_qual** Exterior material quality

**fdn** Type of foundation

- BrkTil: Brick & Tile
- CBlock: Cinder Block
- PConc: Poured Concrete
- Slab: Slab
- Stone: Stone
- Wood: Wood

**fence** Fence quality

- GdPrv: Good Privacy
- MnPrv: Minimum Privacy
- GdWo: Good Wood
- MnWw: Minimum Wood/Wire
- NA: No Fence

**fp** Number of fireplaces

**fp\_qual** Fireplace quality

**gar\_area** Size of garage in square feet

**gar\_car** Size of garage in car capacity

**gar\_cond** Garage condition

**gar\_fin** Interior finish of the garage

- Fin: Finished
- RFn: Rough Finished
- Unf: Unfinished
- NA: No Garage

**gar\_qual** Garage quality

**gar\_type** Garage location

- 2Types: More than one type of garage
- Atchd: Attached to home
- Basment: Basement Garage
- BuiltIn: Built-In (Garage part of house - typically has room above garage)
- CarPort: Car Port
- Detchd: Detached from home
- NA: No Garage

**gar\_yr** Year garage was built

**heat\_qual** Heating quality and condition

**land\_contour** Flatness of the property

- Lvl: Near Flat/Level
- Bnk: Banked - Quick and significant rise from street grade to building
- HLS: Hillside - Significant slope from side to side
- Low: Depression

**land\_slope** Slope of property

- Gtl: Gentle slope
- Mod: Moderate Slope
- Sev: Severe Slope

**lot\_area** Lot size in square feet

**lot\_config** Lot configuration

- Inside: Inside lot
- Corner: Corner lot
- CulDSac: Cul-de-sac
- FR2: Frontage on 2 sides of property
- FR3: Frontage on 3 sides of property

**lot\_frontage** Linear feet of street connected to property

**lot\_shape** General shape of lot

- Reg: Regular
- IR1: Slightly irregular
- IR2: Moderately Irregular
- IR3: Irregular

**pave\_dr** Paved driveway

- Y: Paved
- P: Partial Pavement
- N: Dirt/Gravel

**roof\_matl** Roof material

- ClyTile: Clay or Tile
- CompShg: Standard (Composite) Shingle
- Membran: Membrane
- Metal: Metal

- Roll: Roll
- Tar&Grv: Gravel & Tar
- WdShake: Wood Shakes
- WdShngl: Wood Shingles

**roof\_style** Type of roof

- Flat: Flat
- Gable: Gable
- Gambrel: Gabrel (Barn)
- Hip: Hip
- Mansard: Mansard
- Shed: Shed

**op\_area** Open porch area in square feet

**ep\_area** Enclosed porch area in square feet

**wd\_area** Wood deck area in square feet

**sale\_price** The property's sale price in thousand dollars

### Source

The original data comes from <https://www.kaggle.com/c/house-prices-advanced-regression-techniques>. Some data cleaning were applied.

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r02pro

*Do the interactive exercises*

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### Description

This function provides interactive exercises for each lesson corresponding to each subsection of the book "R Programming: Zero to Pro"

### Usage

```
r02pro(id)
```

### Arguments

`id` the index of the lesson

### Value

This function is an interactive exercise. Hence, no value returned.

### Examples

```
#Do the exercise for Section 1.1  
## Not run: r02pro(1.1)
```



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sahp

*Small Version of Ames Housing Price data.*

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### Description

The small version of Ames Housing Price data of 165 observations, with 12 features including the sale date and price.

### Usage

sahp

### Format

A data frame with 165 observations and 12 features:

**dt\_sold** Date Sold

**bedroom** Number of bedrooms

**bathroom** Number of bathrooms

**gar\_car** Size of garage in car capacity

**oa\_qual** Overall material and finish quality

- 10: Very Excellent
- 9: Excellent
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- 7: Good
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- 5: Average
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- 3: Fair
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**lot\_area** Lot size in square feet

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**kit\_qual** Kitchen quality

**heat\_qual** Heating quality and condition

**central\_air** Central air conditioning

- N: No
- Y: Yes

**sale\_price** The property's sale price in thousand dollars

### Source

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Some data cleaning were applied.

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