

# STA9797\_Group\_Project\_Code

Brandon Kokin, Ayrat Aymetov, MohammedSaadma Chowdhury

2025-11-26

```
# Load the dataset
df <- read.csv("data/AmesHousing.csv")

# Print the first few rows
head(df)

##   Order      PID MS.SubClass MS.Zoning Lot.Frontage Lot.Area Street Alley
## 1     1 526301100          20       RL      141    31770  Pave <NA>
## 2     2 526350040          20       RH       80    11622  Pave <NA>
## 3     3 526351010          20       RL       81    14267  Pave <NA>
## 4     4 526353030          20       RL       93    11160  Pave <NA>
## 5     5 527105010          60       RL      74    13830  Pave <NA>
## 6     6 527105030          60       RL      78    9978  Pave <NA>
##   Lot.Shape Land.Contour Utilities Lot.Config Land.Slope Neighborhood
## 1       IR1        Lvl     AllPub    Corner      Gtl      NAmes
## 2       Reg        Lvl     AllPub   Inside      Gtl      NAmes
## 3       IR1        Lvl     AllPub    Corner      Gtl      NAmes
## 4       Reg        Lvl     AllPub   Inside      Gtl      NAmes
## 5       IR1        Lvl     AllPub   Inside      Gtl      Gilbert
## 6       IR1        Lvl     AllPub   Inside      Gtl      Gilbert
##   Condition.1 Condition.2 Bldg.Type House.Style Overall.Qual Overall.Cond
## 1       Norm        Norm     1Fam    1Story      6         5
## 2     Feedr        Norm     1Fam    1Story      5         6
## 3       Norm        Norm     1Fam    1Story      6         6
## 4       Norm        Norm     1Fam    1Story      7         5
## 5       Norm        Norm     1Fam    2Story      5         5
## 6       Norm        Norm     1Fam    2Story      6         6
##   Year.Built Year.Remod.Add Roof.Style Roof.Matl Exterior.1st Exterior.2nd
## 1     1960        1960      Hip CompShg    BrkFace    Plywood
## 2     1961        1961      Gable CompShg VinylSd  VinylSd
## 3     1958        1958      Hip CompShg Wd Sdng  Wd Sdng
## 4     1968        1968      Hip CompShg BrkFace  BrkFace
## 5     1997        1998      Gable CompShg VinylSd  VinylSd
## 6     1998        1998      Gable CompShg VinylSd  VinylSd
##   Mas.Vnr.Type Mas.Vnr.Area Exter.Qual Exter.Cond Foundation Bsmt.Qual
## 1       Stone        112       TA       TA     CBlock      TA
## 2       None          0       TA       TA     CBlock      TA
## 3     BrkFace        108       TA       TA     CBlock      TA
## 4       None          0       Gd       TA     CBlock      TA
## 5       None          0       TA       TA     PConc       Gd
## 6     BrkFace        20       TA       TA     PConc      TA
##   Bsmt.Cond Bsmt.Exposure BsmtFin.Type.1 BsmtFin.SF.1 BsmtFin.Type.2
```

## 1	Gd	Gd	BLQ	639	Unf			
## 2	TA	No	Rec	468	LwQ			
## 3	TA	No	ALQ	923	Unf			
## 4	TA	No	ALQ	1065	Unf			
## 5	TA	No	GLQ	791	Unf			
## 6	TA	No	GLQ	602	Unf			
##	BsmtFin.SF.2	Bsmt.Unf.SF	Total.Bsmt.SF	Heating	Heating.QC	Central.Air		
## 1	0	441	1080	GasA	Fa	Y		
## 2	144	270	882	GasA	TA	Y		
## 3	0	406	1329	GasA	TA	Y		
## 4	0	1045	2110	GasA	Ex	Y		
## 5	0	137	928	GasA	Gd	Y		
## 6	0	324	926	GasA	Ex	Y		
##	Electrical	X1st.Flr.SF	X2nd.Flr.SF	Low.Qual.Fin.SF	Gr.Liv.Area	Bsmt.Full.Bath		
## 1	SBrkr	1656	0	0	1656	1		
## 2	SBrkr	896	0	0	896	0		
## 3	SBrkr	1329	0	0	1329	0		
## 4	SBrkr	2110	0	0	2110	1		
## 5	SBrkr	928	701	0	1629	0		
## 6	SBrkr	926	678	0	1604	0		
##	Bsmt.Half.Bath	Full.Bath	Half.Bath	Bedroom.AbvGr	Kitchen.AbvGr	Kitchen.Qual		
## 1	0	1	0	3	1	TA		
## 2	0	1	0	2	1	TA		
## 3	0	1	1	3	1	Gd		
## 4	0	2	1	3	1	Ex		
## 5	0	2	1	3	1	TA		
## 6	0	2	1	3	1	Gd		
##	TotRms.AbvGrd	Functional	Fireplaces	Fireplace.Qu	Garage.Type	Garage.Yr.Blt		
## 1	7	Typ	2	Gd	Attchd	1960		
## 2	5	Typ	0	<NA>	Attchd	1961		
## 3	6	Typ	0	<NA>	Attchd	1958		
## 4	8	Typ	2	TA	Attchd	1968		
## 5	6	Typ	1	TA	Attchd	1997		
## 6	7	Typ	1	Gd	Attchd	1998		
##	Garage.Finish	Garage.Cars	Garage.Area	Garage.Qual	Garage.Cond	Paved.Drive		
## 1	Fin	2	528	TA	TA	P		
## 2	Unf	1	730	TA	TA	Y		
## 3	Unf	1	312	TA	TA	Y		
## 4	Fin	2	522	TA	TA	Y		
## 5	Fin	2	482	TA	TA	Y		
## 6	Fin	2	470	TA	TA	Y		
##	Wood.Deck.SF	Open.Porch.SF	Enclosed.Porch	X3Ssn.Porch	Screen.Porch	Pool.Area		
## 1	210	62	0	0	0	0		
## 2	140	0	0	0	120	0		
## 3	393	36	0	0	0	0		
## 4	0	0	0	0	0	0		
## 5	212	34	0	0	0	0		
## 6	360	36	0	0	0	0		
##	Pool.QC	Fence	Misc.Feature	Misc.Val	Mo.Sold	Yr.Sold	Sale.Type	Sale.Condition
## 1	<NA>	<NA>	<NA>	0	5	2010	WD	Normal
## 2	<NA>	MnPrv	<NA>	0	6	2010	WD	Normal
## 3	<NA>	<NA>	Gar2	12500	6	2010	WD	Normal
## 4	<NA>	<NA>	<NA>	0	4	2010	WD	Normal
## 5	<NA>	MnPrv	<NA>	0	3	2010	WD	Normal

```
## 6      <NA>   <NA>       <NA>      0       6    2010      WD     Normal
##   SalePrice
## 1 215000
## 2 105000
## 3 172000
## 4 244000
## 5 189900
## 6 195500
```