

Exploring the potential role of AI in Community Development

Accessing data to create resilient communities

WELCOME TO THE INDICATORS PROGRAM

The Iowa State University Extension and Outreach Indicators Program provides data and information for decision makers at the local, regional, and state levels. The program is composed of three signature components: a Data Portal, the Data for Decision Makers publications, and Data Literacy training.

[FIND OUT MORE](#)

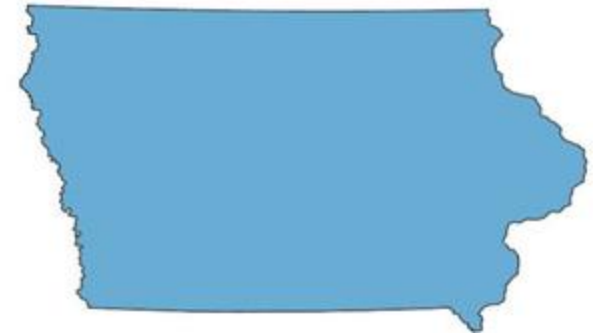
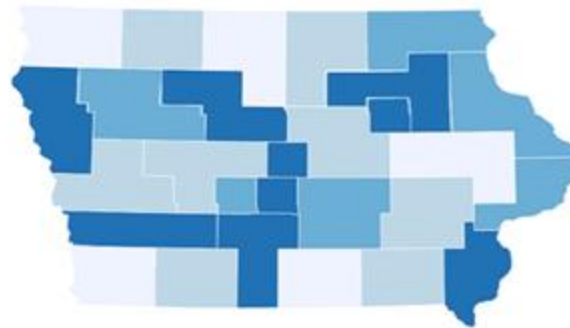
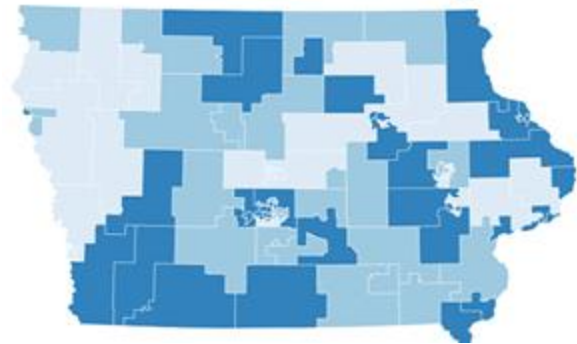
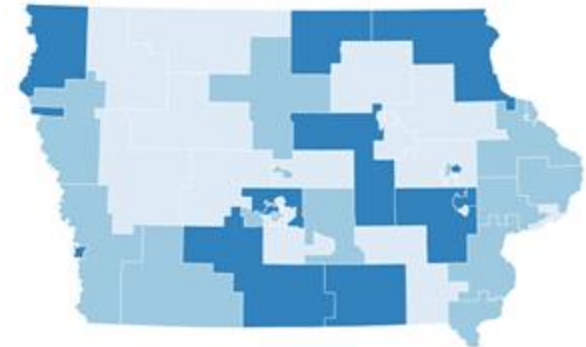
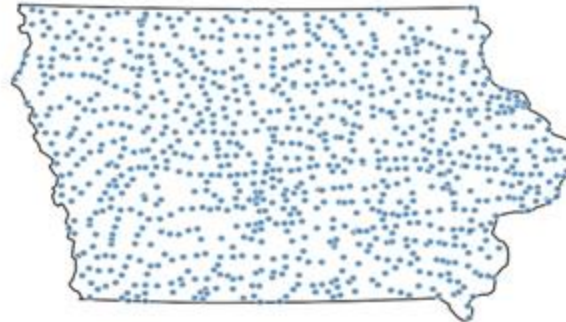
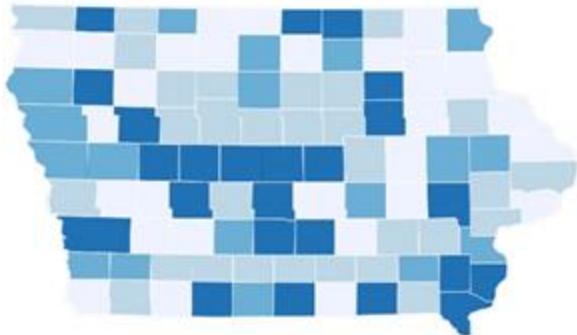
[Languages Spoken in Iowa](#)

[Census 2020](#)

[COVID-19 Health & Economic Indicators](#)

Indicators Program: Data For Decision Makers (DDM)

The Data for Decision Makers are brief reports presenting a profile and snapshot of a city's, county's, or region's demographic, economic, social, health, or housing characteristics. These reports are frequently updated as new and revised data become available.



Indicators Program: Data For Decision Makers (DDM)

Data for Decision Makers



Black Hawk County Health Profile

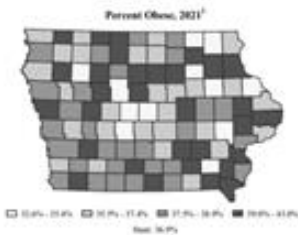
report created: 10/14/2024

Health Risk Factors

This Health Data for Decision Makers provides a wide range of county-level health data and information to help residents, health providers, and policy makers understand the health situations and needs of county residents. It can be a starting point for discussions on health issues and a guide to help shape future programming and policies. It is updated annually to provide the most current set of indicators and can be used to compare across counties, regions, and the state.

Selected Health Data in Black Hawk County¹

| | County | | State | | | |
|--------------------|--------|-------|-------|-------|-------|-------|
| | 2019 | 2020 | 2019 | 2020 | | |
| Smoking | 19.4% | 17.9% | 17.2% | 17.4% | 16.8% | 15.5% |
| Excessive Drinking | 22.7% | 24.7% | 21.8% | 24.6% | 24.7% | 23.1% |
| Obesity | 38.0% | 39.9% | 36.8% | 38.3% | 37.2% | 36.9% |
| Diabetes | 10.0% | 9.4% | 9.5% | 9.9% | 8.9% | 8.5% |
| Inactive | 29.4% | 23.7% | 25.2% | 26.1% | 22.7% | 23.4% |
| Inconsistent Sleep | NA | 32.6% | NA | NA | 31.8% | NA |



Years of Life Expectancy³

| | County | | State | |
|-----------------|---------|---------|---------|---------|
| | 2013-17 | 2019-21 | 2013-17 | 2019-21 |
| Life Expectancy | 78.8 | 77.1 | 78.3 | 78.3 |



Contacts:

| | |
|--|---|
| Regional Director Quinton "Q" Richardson 3420 University Ave., Ste B Waterloo, IA 50700 qrich@iastate.edu 319-234-6811 | County Office Sheila Worlicum 3420 University Ave., Ste B Waterloo, IA 50700 shellaw@iastate.edu 319-234-6811 |
|--|---|

<https://indicators.extension.iastate.edu>

Data for Decision Makers



Ames, Iowa City Profile

report created: 10/14/2024

Population profile

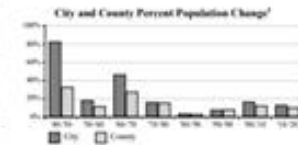
The 2020 population for Ames is 66,427. Between 2010 and 2020 the population increased by 12.7%. The City of Ames is in Story County. Story County saw a 10.0% population increase between 2010 and 2020.

Story County Cities - Total Population¹

| City | 2010 | 2018 | 2020 |
|-----------------------|---------------|---------------|---------------|
| Ames | 58,731 | 58,965 | 66,427 |
| Male Total | 26,491 | 31,247 | 35,092 |
| Female Total | 24,240 | 27,718 | 31,235 |
| Cambridge | 819 | 827 | 827 |
| Collins | 499 | 495 | 495 |
| Colo | 868 | 876 | 843 |
| Gilbert | 967 | 1,082 | 1,211 |
| Huxley | 2,316 | 3,317 | 4,284 |
| Kelley | 300 | 309 | 304 |
| Marwood | 807 | 920 | 859 |
| McCalsburg | 318 | 333 | 353 |
| Nevada | 6,658 | 6,798 | 6,825 |
| Roland | 1,334 | 1,284 | 1,362 |
| Sheldahl ² | 336 | 319 | 297 |
| Slater | 1,306 | 1,499 | 1,543 |
| Story City | 1,229 | 1,411 | 1,352 |
| Zearing | 417 | 354 | 326 |
| Story County Total | 79,961 | 89,542 | 98,537 |
| State of Iowa Total | 2,926,324 | 3,046,333 | 3,190,349 |

Neighboring Cities - Percent Population Change

| | 90-10 | 10-10 | 10-20 |
|---------------|-------|-------|-------|
| Cambridge | 14.7% | 1.0% | 0.0% |
| Gilbert | 24.0% | 9.6% | 11.9% |
| Huxley | 13.1% | 43.2% | 27.9% |
| Kelley | 22.0% | 3.0% | -1.6% |
| Nevada | 10.8% | -2.1% | 1.9% |
| Ames | 7.5% | 14.2% | 12.7% |
| Story County | 7.7% | 12.0% | 10.0% |
| State of Iowa | 5.4% | 4.1% | 4.7% |



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Housing DDM

Data for Decision Makers



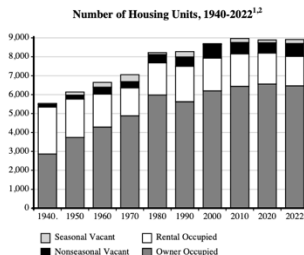
Buchanan County Housing Profile

report created: 10/16/2024

Housing Access

In 2022, there were 8,911 housing units in Buchanan County. Of this total, 6,468 were owner-occupied, 1,552 were renter-occupied, and 891 were vacant. Fewer housing units were counted in Buchanan County in the 1940 Decennial Census than in the most recent American Community Survey estimate. The median year for which housing was built in Buchanan County is 1971. In Buchanan County, a majority of owner-occupied housing is of 1-unit structures. For renter-occupied housing, there is more housing of 1-unit structures than any other type. Seasonally vacant housing units were 23.1% of all vacant units.

| | Estimate | MOE |
|--|---------------|----------------|
| Total Housing Units | 8,911 | +/- 28 |
| Vacant Units | 891 (10.0%) | +/- 152 (1.7%) |
| Occupied Units | 8,020 (90.0%) | +/- 159 (1.7%) |
| Owner-Occupied Units | 6,468 (80.6%) | +/- 209 (2.3%) |
| Renter-Occupied Units | 1,552 (19.4%) | +/- 188 (2.3%) |
| Median ^a Value ^b | \$166,200 | +/- \$5,974 |
| Median ^c Rent ^c | \$788 | +/- \$59 |
| Avg Household Size - Owner ^d | 2.67 | +/-0.07 |
| Avg Household Size - Renter ^e | 2.03 | +/-0.18 |



^aMedian is the middle value of a distribution ^bMedian value of owner-occupied units, ^cMedian gross rent of renter-occupied units, ^dOwner-occupied units, ^eRenter-occupied units

| | Estimate | MOE |
|-------------------|----------|------|
| Median Year Built | 1971 | +/-2 |
| Owner Occupied | 1971 | +/-2 |
| Renter Occupied | 1969 | +/-4 |

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Extension and Outreach
Community and Economic Development

Housing Characteristics

Buchanan County

Occupied Housing Units By Structure Type, 2018-2022¹

| | Number Estimate | MOE | Percent (%) Estimate | MOE |
|---------------------|-----------------|--------|----------------------|--------|
| Occupied Units | 8,020 | +/-159 | NA | NA |
| Owner Occupied | 6,468 | +/-209 | 100.0 | NA |
| 1-Unit ^a | 6,130 | +/-225 | 94.8 | +/-1.6 |
| 2 to 4 Unit | 35 | +/-22 | 0.5 | +/-0.3 |
| 5 or More Units | 28 | +/-40 | 0.4 | +/-0.6 |
| Mobile Home | 275 | +/-85 | 4.3 | +/-1.3 |
| Boat, RV, Van etc. | 0 | +/-19 | 0.0 | +/-0.3 |
| Renter Occupied | 1,552 | +/-188 | 100.0 | NA |
| 1-Unit ^a | 731 | +/-122 | 47.1 | +/-5.4 |
| 2 to 4 Unit | 506 | +/-154 | 32.6 | +/-9.1 |
| 5 or More Units | 213 | +/-83 | 13.7 | +/-5.1 |
| Mobile Home | 101 | +/-62 | 6.5 | +/-3.9 |
| Boat, RV, Van etc. | 1 | +/-4 | 0.1 | +/-0.3 |

^aIncludes Unattached and Attached Units

Housing Units by Number of Bedrooms and Tenure, 2018-2022¹

| | Number Estimate | MOE | Percent (%) Estimate | MOE |
|------------------------|-----------------|--------|----------------------|--------|
| Occupied Units | 8,020 | +/-159 | NA | NA |
| Owner Occupied | 6,468 | +/-209 | 100.0 | NA |
| 1 Bedroom ^a | 118 | +/-50 | 1.8 | +/-0.8 |
| 2 Bedrooms | 1,163 | +/-154 | 18.0 | +/-2.3 |
| 3 Bedrooms | 3,108 | +/-223 | 48.1 | +/-3.1 |
| 4 or More | 2,079 | +/-231 | 32.1 | +/-3.4 |
| Renter Occupied | 1,552 | +/-188 | 100.0 | NA |
| No Bedroom | 93 | +/-44 | 6.0 | +/-2.7 |
| 1 Bedroom | 357 | +/-125 | 23.0 | +/-7.6 |
| 2 Bedrooms | 553 | +/-111 | 35.6 | +/-5.7 |
| 3 Bedrooms | 410 | +/-83 | 26.4 | +/-4.3 |
| 4 or More | 139 | +/-55 | 9.0 | +/-3.4 |

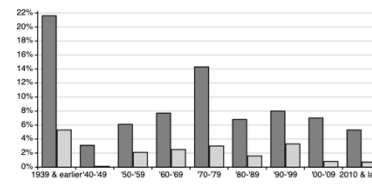
^aIncludes No Bedroom Units (e.g. studio apartments)

Status of Vacant Housing Units, 2018-2022¹

| | Number Est | MOE | Percent (%) Est | MOE |
|-----------------------|------------|--------|-----------------|---------|
| Total Vacant Units | 891 | +/-152 | NA | NA |
| For Rent | 173 | +/-88 | 19.4 | +/-9.3 |
| Rented, Not Occupied | 44 | +/-50 | 4.9 | +/-5.5 |
| For Sale | 71 | +/-76 | 8.0 | +/-8.4 |
| Sold, Not Occupied | 38 | +/-35 | 4.3 | +/-3.9 |
| Seasonal ^a | 206 | +/-95 | 23.1 | +/-9.9 |
| For Migrant Workers | 0 | +/-19 | 0.0 | +/-2.1 |
| Other | 359 | +/-109 | 40.3 | +/-10.1 |

^aFor Seasonal, Recreational, or Occasional Use

Percent of Housing Units by Year Built and by Tenure, 2018-2022¹



Authorized Housing Construction Permits in Buchanan County, 1995-2021¹

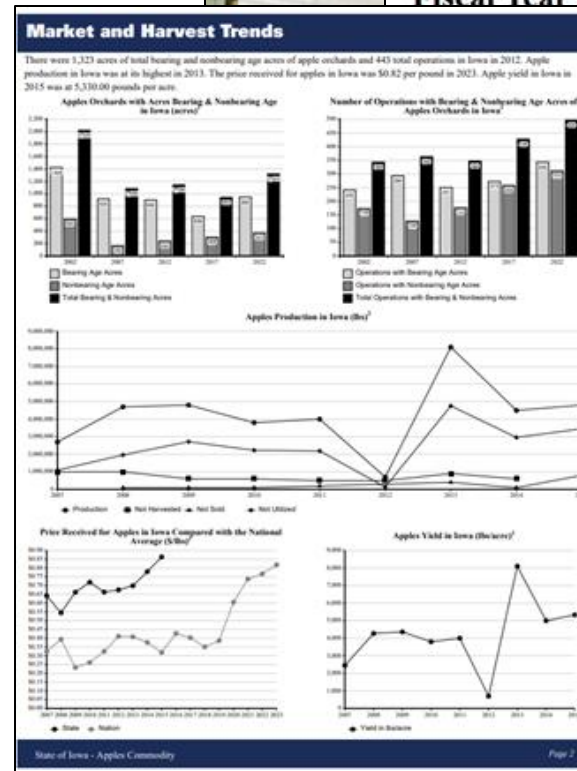
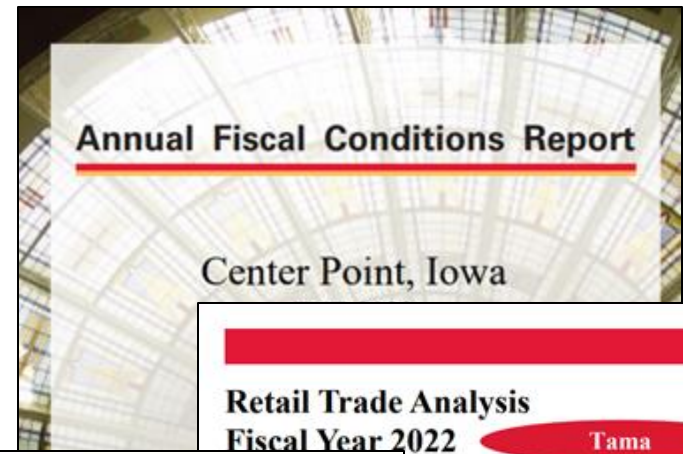
| Permit Year | Single Family Units | Duplex Units | Tri/Four-plex Units | Multi-Family Units | Total Units | Per Unit Valuation ^a | |
|-------------|---------------------|--------------|---------------------|--------------------|-------------|---------------------------------|--------------|
| | | | | | | Single Family | Multi-Family |
| 1995-1999 | 128 | 2 | 4 | 2 | 136 | \$101,147 | \$554,835 |
| 2000-2004 | 123 | 9 | 5 | 1 | 138 | \$120,982 | \$300,000 |
| 2005-2009 | 75 | 0 | 0 | 1 | 76 | \$163,051 | \$500,000 |
| 2010-2014 | 93 | 7 | 0 | 1 | 101 | \$179,538 | \$3,200,000 |
| 2015-2019 | 83 | 14 | 3 | 4 | 104 | \$195,890 | \$0 |
| 2020 | 17 | 1 | 1 | 1 | 20 | \$238,076 | \$1,350,002 |
| 2021 | 16 | 2 | 0 | 0 | 18 | \$285,580 | \$0 |

Community and Economic Development

Data for Decision Makers

Indicators Program:

- Retail Trade Analysis
- AgMRC Commodity
- IGFI
- Data Literacy and GIS Workshops
- Additional Publications



Retail Trade Analysis Fiscal Year 2022

Tama

Overview, 1-4
Key retail indicators
Historical statistics
Population trends

Retail Performance Measures, 5-8
Peer group comparisons
Sales benchmarks
Surplus and leakage
Pull factors

Regional Competitors, 9
Neighbor area sales
Reporting jurisdictions

Data Notes, 10-17
Tax reporting notes
Notable exclusions
Definitions
Frequently asked questions
Peer group listings
Acknowledgements

<https://indicators.iastate.edu/indicators/Retail>

Indicators

| | 2021 | 2022 | % Change |
|--|--------------|--------------|----------|
| | \$18,997,005 | \$23,368,139 | 23.1% ▲ |
| | 90 | 90 | 0.0% ▬ |
| | 3,094 | 3,068 | -0.8% ▬ |
| | \$6,140 | \$7,623 | 24.2% ▲ |
| | \$211,079 | \$259,868 | 23.1% ▲ |

Health, educational institutions, nursing homes, or other group quarters in the calculation of per

Presidential Strategic Funding Awarded

BENEFITS OF DATA-DRIVEN DECISION MAKING



Data Collection &
Measurement



Valuable Insights



Actionable
Insights



Policy & Decision
Making



Community Well-
being

Presidential Strategic Funding Awarded

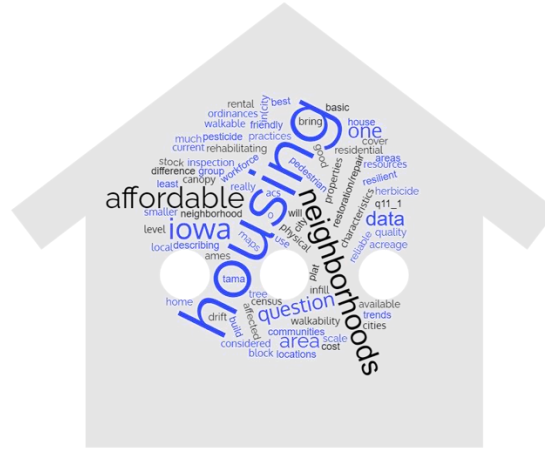
- Data uses across the CED unit offerings:
 - Housing program
 - Grant writing programs
 - Leadership program
 - Planning and Zoning
 - Arts Engagement
 - And continuing to add....





- 2020 – 2024
- 59 students
- 24 projects

AI for Community and Housing Development



Large Language Model to understand and interpret user housing related requests

Knowledge Base of affordable housing finance and policies, housing needs, federal housing, and urban development

Satellite Imagery to understand rural housing and population distribution

User Interface for simple, clear, and concise messaging between model and user

AI *Defined*

- AI: AI is the simulation of human intelligence in machines that are programmed to think, learn, and perform tasks that typically require cognition. It may include capabilities like problem-solving, decision-making, natural language understanding, and pattern recognition.
- Generative AI: Generative AI is a subset of AI that focuses on creating new content, like text, images, music, or even code, by learning from existing data. It uses machine learning models, like neural networks, to generate outputs that resemble the data it was trained on. Previously the models were built on specific field by using specific data but the Generative AI models can serve as a *blackbox* and use your own data to further train the models.



Exploration of AI

- Why would we use AI?
 - End users interface
 - Research (efficiency of query and analysis)

The screenshot displays the United States Census Bureau data portal. The search bar at the top contains the text "Search" and "Advanced Search". The navigation menu includes "All", "Tables", "Maps", "Profiles", and "Pages". The "Tables" tab is selected, showing 70 results. The filters on the left include "United States", "Iowa", "Vacancy", and "Boone County, Iowa". The selected table is "S2501 | Occupancy Characteristics" from the American Community Survey. The table data is as follows:

| Label | Iowa | | |
|--|--------------------------------------|-------------------------------|----------|
| | Percent owner-occupied housing units | Renter-occupied housing units | |
| | Estimate | Margin of Error | Estimate |
| Occupied housing units | 922,684 | ±5,126 | 367,455 |
| OCCUPANTS PER ROOM | | | |
| 1.01 to 1.50 occupants per room | 0.8% | ±0.1 | 6,645 |
| 1.51 or more occupants per room | 0.2% | ±0.1 | 3,844 |
| HOUSEHOLD TYPE (INCLUDING LIVING ALONE) AND AGE OF HOUSEHOLDER | | | |
| Family households | 71.5% | ±0.3 | 143,504 |
| Married-couple family | 60.6% | ±0.4 | 71,034 |
| Householder 15 to 34 years | 7.4% | ±0.2 | 25,069 |
| Householder 35 to 64 years | 36.9% | ±0.3 | 35,320 |
| Householder 65 years and over | 16.4% | ±0.2 | 10,645 |
| Other family | 10.9% | ±0.3 | 72,470 |
| Male householder, no spouse present | 4.0% | ±0.2 | 18,462 |
| Householder 15 to 34 years | 0.9% | ±0.1 | 8,319 |
| Householder 35 to 64 years | 2.6% | ±0.1 | 9,359 |

Exploration of AI

- What are barriers?



Searched 5 sites ▾

As of the 2018-2022 American Community Survey (ACS) 5-year estimates, the median value of owner-occupied homes in Boone County, Iowa, is approximately \$142,200. This is lower than the statewide median home value in Iowa, which stands at \$181,600. It is also significantly lower than the median value in the Ames metropolitan area, which is around \$216,000 [CENSUS.GOV](#) [CENSUS.GOV](#) .



Message ChatGPT



ChatGPT can make mistakes. Check important info.



The **home values** reported in the 2022 ACS 5-year estimates for **Boone County, Iowa** give a picture of the housing market in terms of the distribution of owner-occupied home values.

Here's the general breakdown based on typical categories available in ACS housing data:

Median Home Value

- The **median home value** is a key indicator of the housing market. This represents the middle value of all owner-occupied homes, where half of the homes are valued above and half below.

Home Value Distribution

The ACS typically breaks down home values into the following ranges:

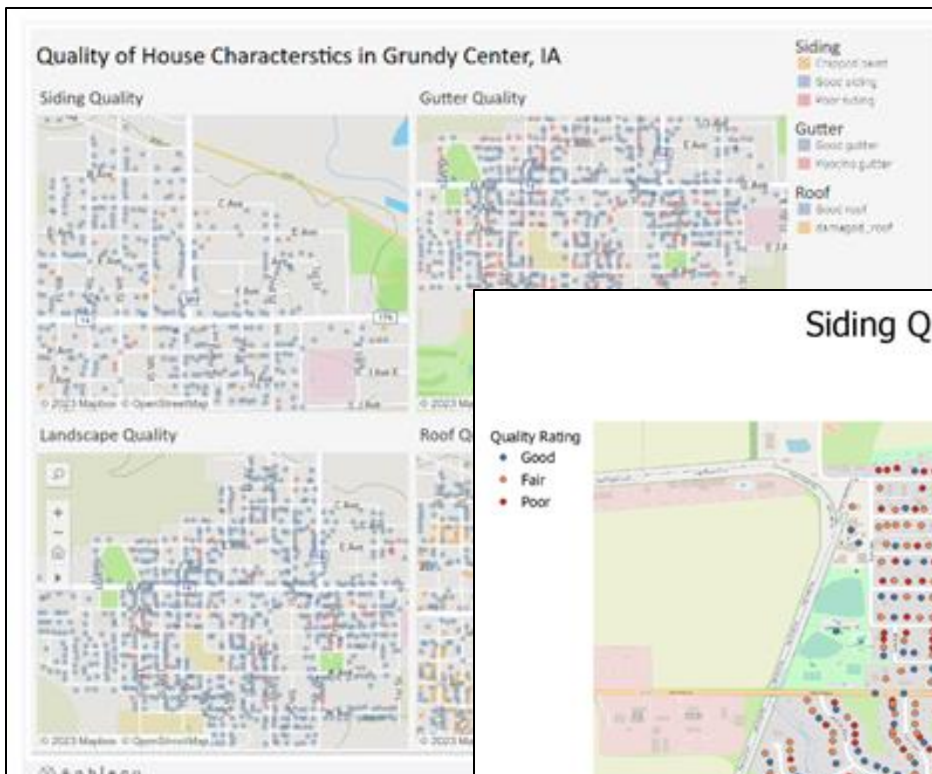
- **Less than \$50,000**
- **\$50,000 to \$99,999**
- **\$100,000 to \$149,999**
- **\$150,000 to \$199,999**
- **\$200,000 to \$299,999**
- **\$300,000 to \$499,999**
- **\$500,000 or more**

If you'd like specific values (like the exact median or the percentage of homes in each price range), I can help you find it from the ACS data platform or summarize it further. Would you like to proceed with that?

Data Literacy

DSPG 2023

AI-Driven Housing Evaluation



Cancel WINVEST - 2023 Save

Good Fair Poor / No street trees

What is the condition of street lights? * ⓘ

Good Fair Poor / Not Observed

What is the condition of wayfinding? * ⓘ

Good Fair Poor / No Signs

Storm drainage type *

Ditch/swale Curb and gutter Not sure/ Other

Curb and gutter condition * ⓘ

Good Poor

Photos

Address

114 Sixth Ave NW
Independence, IA 50644
US

Report Locate

Exploration of AI in CED

- Utilizing LLMs
- Expanding the testing from DSPG
- Ensuring the system provides meaningful and actionable insights
- Enable data-driven decisions for resilient communities
- Making complex datasets more accessible for stakeholders

DSPG 2024:

Employing AI for Accessibility to Housing Data

Housing & AI

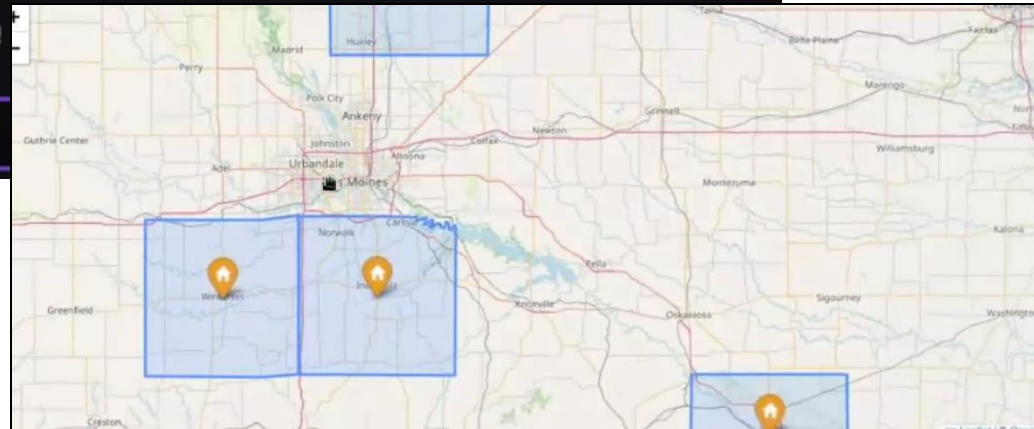
Search

- What are some housing iss... According to the document...
- Can affordable housing ha... While it's theoretically ...
- As per Acs data Show the ... Map
- What are some housing iss... The summary of programs p...
- What are some housing iss... The report outlines an ac...
- As per Acs data Show the ... More is the top 10 counti...

| County | Value |
|-------------------------|-------|
| Black Hawk County, Iowa | 932 |
| Scott County, Iowa | 919 |
| Woodbury County, Iowa | 913 |
| Dubuque County, Iowa | 912 |
| Wapello County, Iowa | 909 |

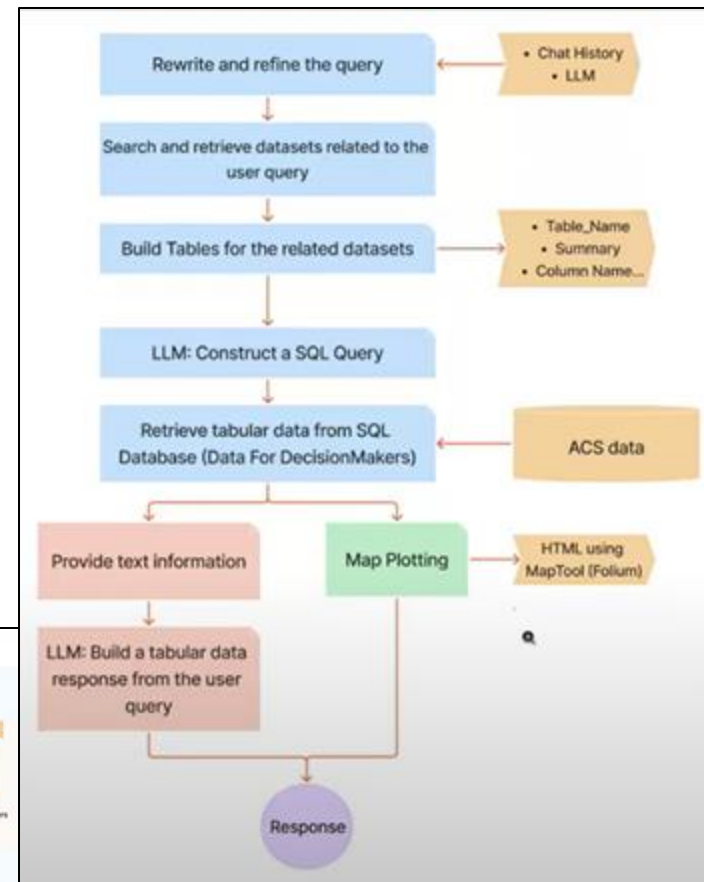
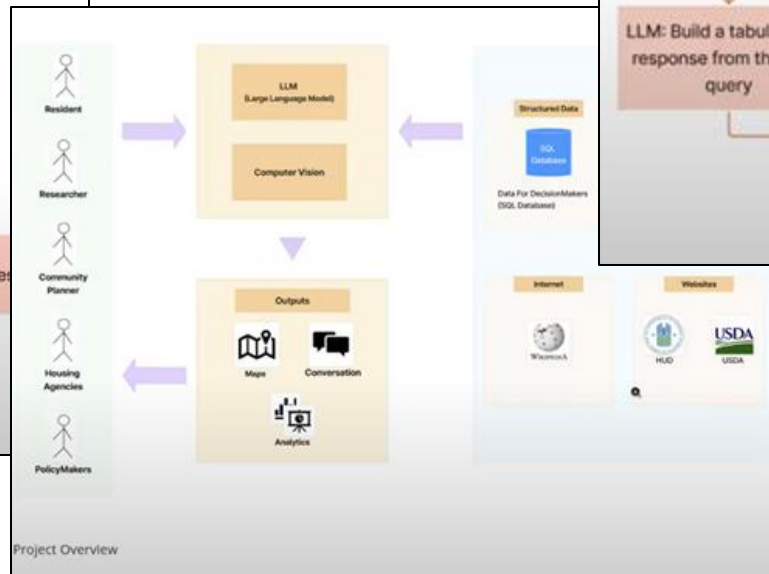
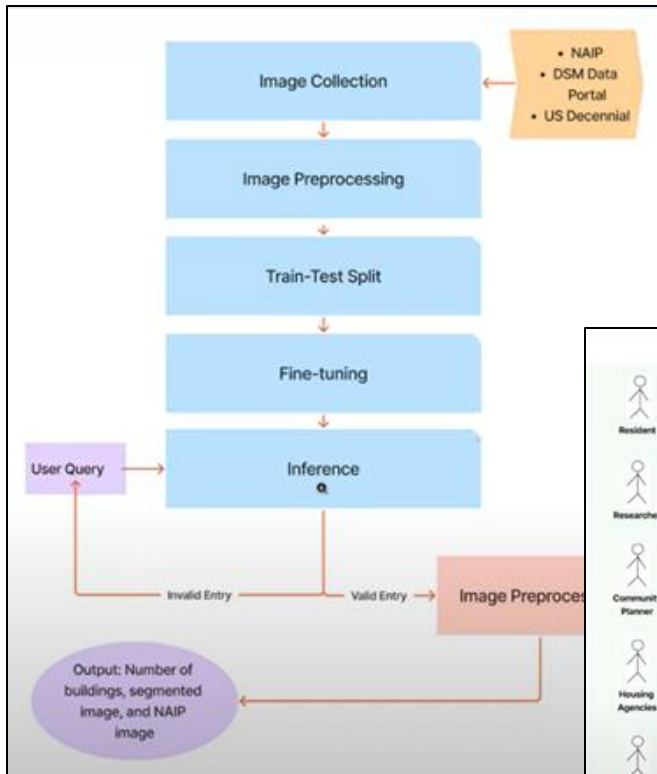
Let me know if you have any further questions!

can you generate me a map



Exploration of AI

What are further questions



Exploration of AI

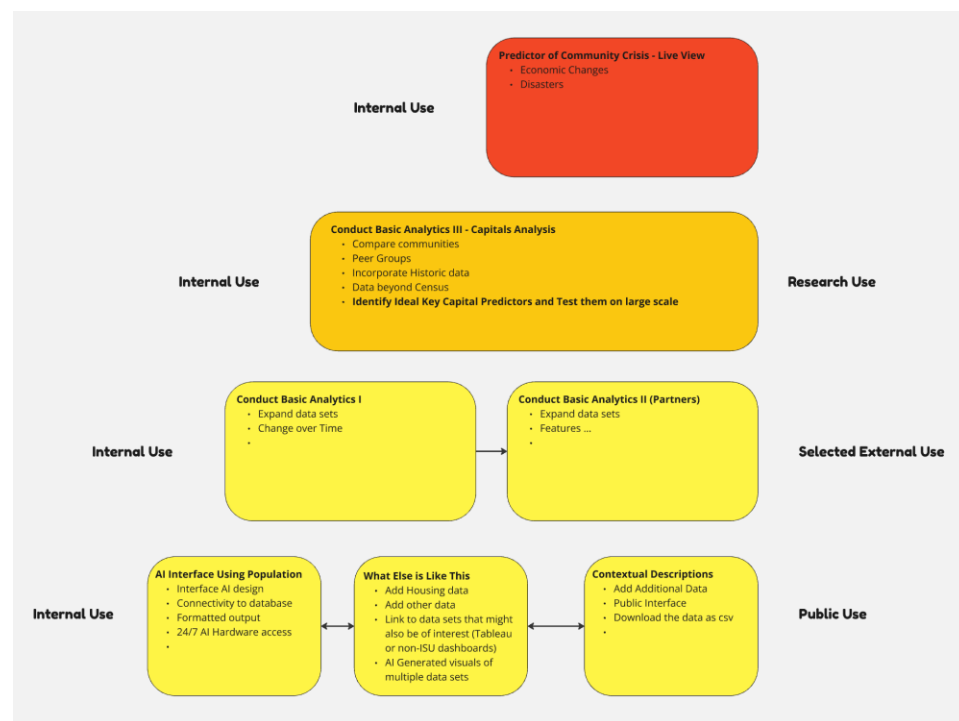
- Where we are headed now (Big Idea)

Prediction -->

Analytics/Relationships -->

Simple Analytics -->

Visual Response to Queries -->



Exploration of AI: Testing processes and Existing Tools

The screenshot displays the Azure AI Studio interface for a project named 'ExtensionAssistant'. The main area is the 'Chat playground', which includes a 'Setup' section with a deployment dropdown set to 'ExtensionAssistant-gpt-4 (version:turbo-2024-04-09)'. A system message prompts the user to select the 'Apply changes' button. The chat area shows a user query: 'Tell me about the Iowa wealth transfer and projected wealth transfer.' The AI response provides a definition of wealth transfer and a list of reasons for its importance:

The Iowa wealth transfer refers to the estimation of how much wealth will be passed down from one generation to the next over a certain period. This is a significant aspect of financial and estate planning, impacting both individuals and the broader economic landscape in Iowa.

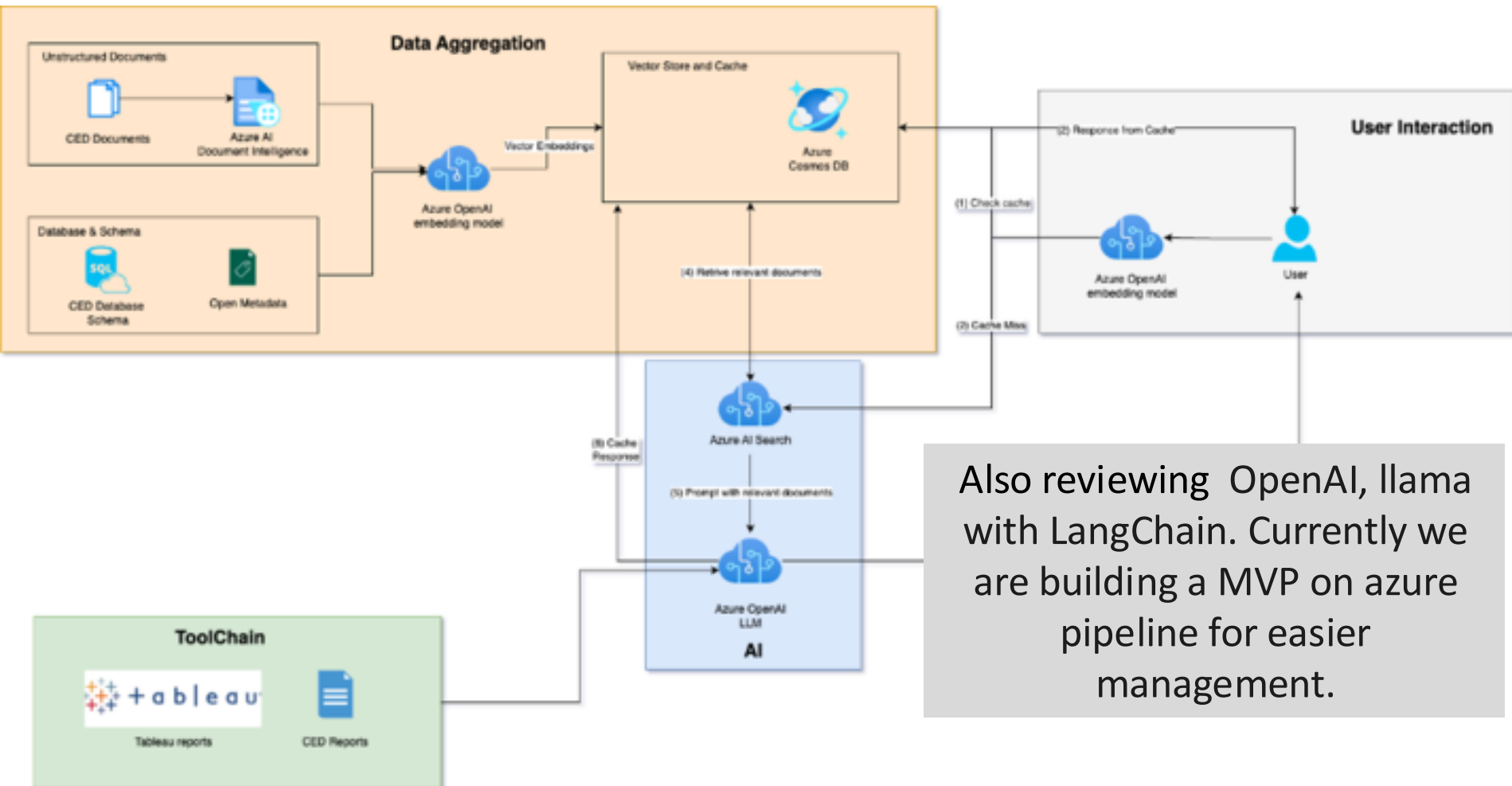
According to a study conducted by Iowa State University, it's estimated that billions of dollars will be transferred from one generation to the next in Iowa over the coming decades. This projection is important for several reasons:

- 1. Economic Impact:** The transfer of wealth can significantly impact the local economy, depending on how the heirs decide to use the inherited assets. It could lead to increased investments in businesses, real estate, or other local ventures.
- 2. Charitable Giving:** There is potential for increased charitable donations as wealth changes hands. This can benefit non-profit organizations and contribute to community development.
- 3. Tax Revenues:** Estate and inheritance taxes might affect the overall tax revenues collected by the state, depending on existing tax laws.
- 4. Financial Services:** There is likely to be a surge in demand for financial and legal services as individuals plan for and manage the inheritance process.
- 5. Wealth Distribution:** The transfer of wealth also highlights issues related to wealth distribution, which can affect social and economic equality.

The interface also shows a token count of 365/128000 and a 'Type user query here' input field.

Exploration of AI

- Current focus is reviewing options within Azure



Exploration of AI

- Future applications
 - Help us find patterns from other data sets
 - Natural language processing – libraries that exist and use those to translate our clients are asking
 - It can spit out information – however may not understandable to end user

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<https://www.extension.iastate.edu/communities/>