Source Files Download and Preparation Instructions

Data preparation Jupyter notebook : 6414_project_data_preparation.ipynb

The raw source files used in this project are very large and come from multiple federal data portals (College Scorecard, Federal StudentAid, and ACS microdata). Because these datasets are too big and sparse to store directly with the project, they must be downloaded from the official sources by following the instructions below.

After downloading, each source is cleaned, filtered, and aggregated in the Jupyter notebook 6414_project_data_preparation.ipynb. The cleaning code produces compact state–year CSV files:

• scorecard_state_year.csv — state-level financial and sector variables derived from College Scorecard

• acs_state_year_controls.csv — demographic and socioeconomic controls constructed from the ACS microdata extract

• fsa_state_year_annualized.csv — FAFSA application volumes aggregated across the quarterly state-level files

These three cleaned datasets are then merged into a single analysis-ready panel:

• state_year_joined_2011_2020.csv

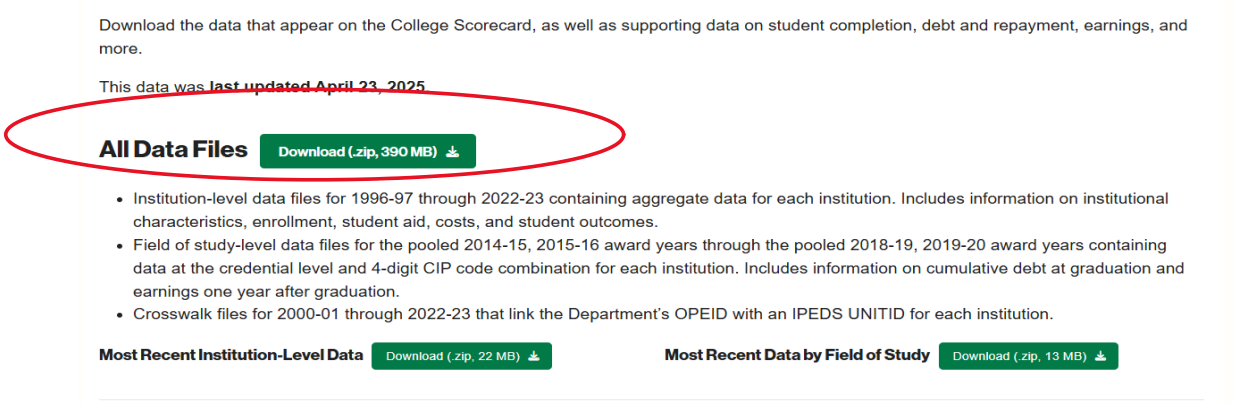
This joined file is the only dataset used for further analysis.

Dataset 1: College Scorecard

- From US Department of Education
- Includes median debt
- **Time frame:** Annual, 1996–present.

Download link:

https://collegescorecard.ed.gov/data¶



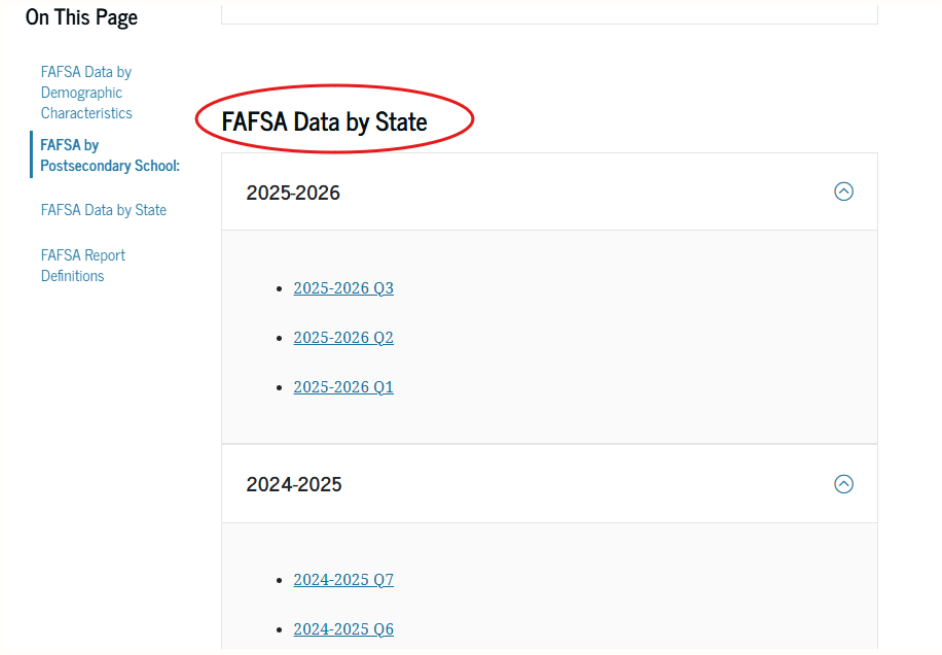
Steps:

1. click the dark green button with "download(.zip,390MB)" (this file size number changes by time) next to "All Data Files", zip file name is College_Scorecard_Raw_Data_10032025.zip.
2. merge all the MERGEDYYYY_YY_PP.csv files as our combined collge scorecard data.

Dataset 2 - Federal StudentAid

Download link:

https://studentaid.gov/data-center/student/application-volume/fafsa-school-state



Steps:

1. Go to page via above link.

2. On the page, find **"FAFSA by State"**
3. Under each year range, such as "2021-2022", click the blue link such as " 2021-2022 Q7", then xls will be downloaded automatically.
4. Click all the links of the desired years to download the data
5. Then use the code below to merge to 1 single csv file.

Dataset 3 :

ACS (American Community Survey)

- Run by the **U.S. Census Bureau**.
- A **large annual survey** of U.S. households (about 3.5 million per year). Contains: demographics (age, race, education, migration), housing, income, and employment (occupation, industry, wages, commute, telework).
- **Microdata (IPUMS)** = person-level records you can analyze directly (instead of just summary tables).
- Data can be tailored and downloaded upon submitting the request.
- Downloaded version covers the variables as below and range(2010-2023)
- Variables as below:

In cart	Variable	Variable Label	Type	Codes	2023 acs	2022 acs	2021 acs	2020 acs	2019 acs	2018 acs	2017 acs	2016 acs	2015 acs	2014 acs	2013 acs	2012 acs	2011 acs	2010 acs
☑	YEAR	Census year [preselected]	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	HHWT	Household weight [preselected]	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	GQ	Group quarters status [preselected]	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	STATEFIP	State (FIPS code)	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	HHINCOME	Total household income	H	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	PERNUM	Person number in sample unit [preselected]	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	PERWT	Person weight [preselected]	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	SEX	Sex	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	AGE	Age	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	RACE	Race	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	HISPAN	Hispanic origin	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	SCHOOL	School attendance	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	EDUC	Educational attainment	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	EMPSTAT	Employment status	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	INCTOT	Total personal income	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
☑	POVERTY	Poverty status	P	codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Download Link:

https://usa.ipums.org/usa/acs.shtml

Steps:

1. register with GT email, and login.

2. On homepage, click "select data" on the top bar.
3. click "select samples", go to its page.
4. check the year box for ACS (1996 – 2023 this is the range I selected. But we only use 2011 to 2020 in the end) and uncheck the content not desired. then click "submit sample selections" button at the bottom of the page.
5. select the variables, click the "plus" sign in front of the desired variable, then it will be added to the cart.
6. The quick way is using the "search" to find the desired variables and add to cart:
'YEAR''HHWT''STATEFIP''GQ''HHINCOME''PERNUM''PERWT''SEX''AGE''RACE''RACED''HISPAN''HISPAND''SCHOOL''EDUC''EDUCD''EMPSTAT''EMPSTATD''INCTOT''POVERTY'
7. After selecting the wanted variables, click "view cart" button.
8. Review the select vars, then click "create data extract"
9. IPUMS.org will review this extract request shortly.
10. Download the dataset once it's got approved.

All cleaning and joining steps are implemented in 6414_project_data_preparation.ipynb