

Programming Project 1
CS150-01
Computer Programming for the Liberal Arts

Programming Project (100 points)

Goal: To write a Python program of your own using Streamlit. This program will be motivated by your own interests.

Instructions:

1. Create a new Github repository named PP1_XXX, where XXX are your initials.
2. Using Spyder and the terminal of your computer, you will write a Python program that does anything you want. Some potential ideas include:
 - a. A simple game (Tic Tac Toe, Hangman, Yahtzee, etc.)
 - b. An image viewer
 - c. A specialized calculator (e.g. math, finance, binary, etc.)
 - d. A sports statistics application (calculate averages, display data, images, etc.)
 - e. An app with an inductive interface (asks questions and makes a recommendation)
 - f. ??? – Open to other ideas
3. The specifications for this project are wide open, but it must have these features:
 - a. It should be written with Streamlit as the interface.
 - b. It should encapsulate functionality in functions where appropriate.
 - c. It should read/write data to/from a file.
4. Using the instructions provided by Github, create a local git repository and push your .ipynb file to it.

Preliminary Idea Submission: By April 8th at 5:00PM, send an email to rkelley@bellarmine.edu with your final project idea so I know what you will working on.

Final Submission: Paste a link to your Github repository in the area provided for this assignment and submit by the deadline.

Appendix

Output from Step 3:

Country	Code	2015	2016	2017	2018	2019
Algeria	DZA	39728025	40551404	41389198	42228429	43053054
Angola	AGO	27884381	28842484	29816748	30809762	31825295
Benin	BEN	10575952	10872067	11175204	11485048	11801151
Botswana	BWA	2120716	2159944	2205128	2254126	2303697
Burkina Faso	BFA	18110624	18646378	19193284	19751535	20321378
Cabo Verde	CPV	524743	531146	537497	543767	549935
Cameroon	CMR	23298368	23926539	24566045	25216237	25876380
Central African Republic	CAF	4493170	4537687	4596028	4666377	4745185
Chad	TCD	14110975	14561666	15016773	15477751	15946876
Comoros	COM	777424	795592	813892	832322	850886
Congo, Dem. Rep.	COD	76244544	78789127	81398764	84068091	86790567
Congo, Rep.	COG	4856095	4980999	5110702	5244363	5380508
Cote d'Ivoire	CIV	23226143	23822714	24437469	25069229	25716544
Djibouti	DJI	913993	929112	944097	958920	973560
Egypt, Arab Rep.	EGY	92442547	94447072	96442593	98423595	100388073
Equatorial Guinea	GNQ	1168568	1215179	1262001	1308974	1355986
Eswatini	SWZ	1104044	1113984	1124753	1136191	1148130
Ethiopia	ETH	100835458	103603501	106400024	109224559	112078730
Gabon	GAB	1947686	2007873	2064823	2119275	2172579
Gambia	GMB	2085860	2149139	2213894	2280102	2347706
Ghana	GHA	27849205	28481946	29121471	29767108	30417856
Guinea	GIN	11432088	11738441	12067539	12414318	12771246
Guinea-Bissau	GNB	1737202	1782437	1828146	1874309	1920922
Kenya	KEN	47878336	49051686	50221473	51393010	52573973
Lesotho	LSO	2059021	2075001	2091412	2108132	2125268
Liberia	LBR	4472230	4586788	4702228	4818977	4937374
Libya	LYB	6418315	6492164	6580724	6678567	6777452
Malawi	MWI	16745303	17205289	17670260	18143315	18628747
Mali	MLI	17438778	17965429	18512394	19077690	19658031
Mauritania	MRT	4046301	4163534	4282574	4403319	4525696
Mauritius	MUS	1262605	1263473	1264613	1265303	1265711
Morocco	MAR	34663603	35126296	35581294	36029138	36471769
Mozambique	MOZ	27042002	27829942	28649007	29495962	30366036
Namibia	NAM	2314904	2358041	2402603	2448255	2494530
Niger	NER	20001663	20788838	21602472	22442948	23310715
Nigeria	NGA	181137448	185960289	190873311	195874740	200963599
Rwanda	RWA	11369071	11668818	11980937	12301939	12626950
Sao Tome and Principe	STP	199432	203227	207089	211028	215056
Senegal	SEN	14578459	14993528	15419381	15854360	16296364
Seychelles	SYC	93419	94677	95843	96762	97625
Sierra Leone	SLE	7171914	7328838	7488431	7650154	7813215
Somalia	SOM	13797201	14185613	14589119	15008154	15442905
South Africa	ZAF	55386367	56203654	57000451	57779622	58558270
South Sudan	SSD	10715658	10832512	10910759	10975920	11062113
Sudan	SDN	38902950	39847440	40813396	41801533	42813238
Tanzania	TZA	51482633	53050790	54663906	56318348	58005463
Togo	TGO	7323158	7509952	7698475	7889094	8082366
Tunisia	TUN	11179949	11303946	11433443	11565204	11694719
Uganda	UGA	38225453	39647506	41162465	42723139	44269594
Yemen, Rep.	YEM	26497889	27168210	27834821	28498687	29161922
Zambia	ZMB	15879361	16363507	16853688	17351822	17861030
Zimbabwe	ZWE	13814629	14030390	14236745	14439018	14645468

Output from Step 4:

AFRICAN POPULATION STATISTICS						
Summary Measure	2015	2016	2017	2018	2019	
MEAN	22,491,651.21	23,072,804.02	23,664,411.29	24,265,356.31	24,874,643.13	
MAX	181,137,448.00	185,960,289.00	190,873,311.00	195,874,740.00	200,963,599.00	
MIN	93,419.00	94,677.00	95,843.00	96,762.00	97,625.00	