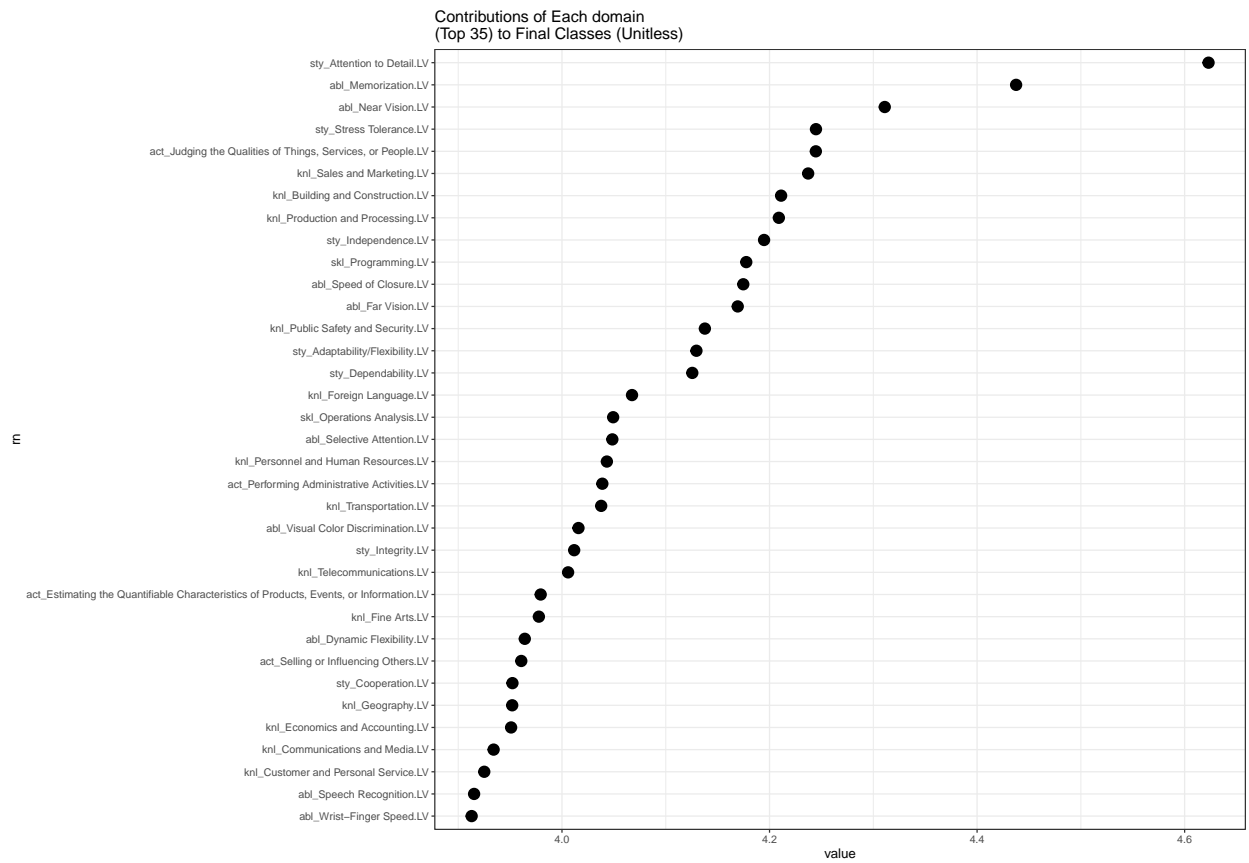


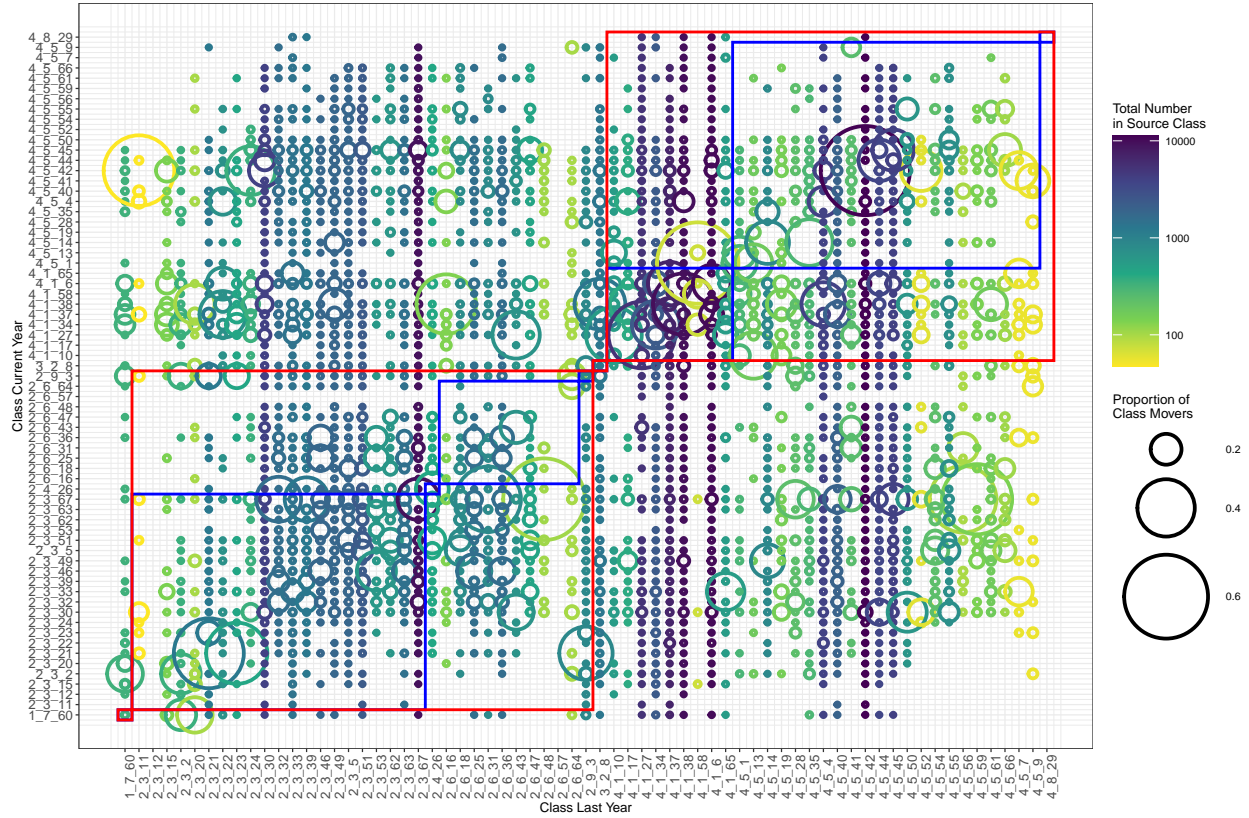
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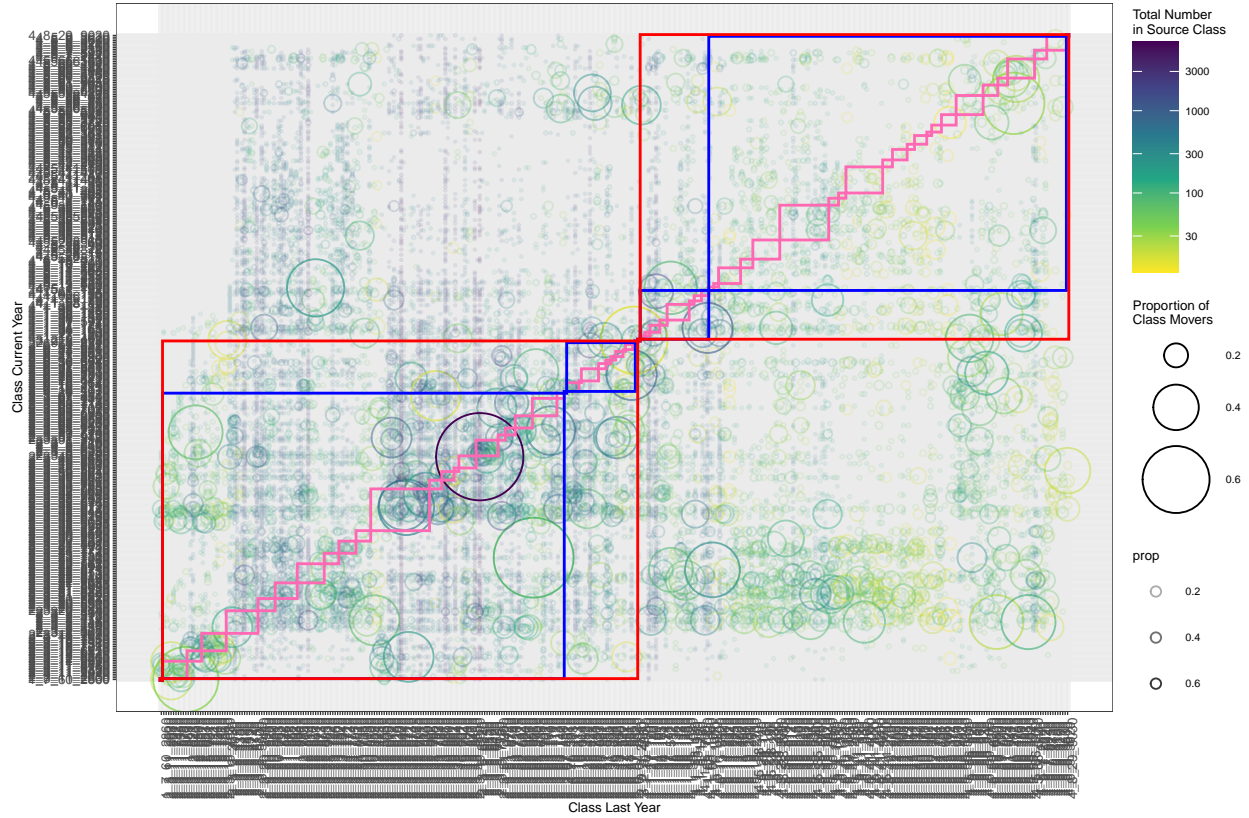
12/24/2020



Source and Sink Classes (K = 67)
Superimposed with K=9 and K=4 Groupings



Source and Sink Classes (K = 67)
Superimposed with K=9 and K=4 Groupings



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## [1] 0.2605345
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## [1] 0.6571706
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## [1] 0.7741984
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1

% latex table generated in R 4.0.2 by xtable 1.8-4 package % Sun Dec 27 11:08:14 2020

2

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% latex table generated in R 4.0.2 by xtable 1.8-4 package % Sun Dec 27 11:08:14 2020

	Title	Class_67	Class_9	Class_4
1	Miscellaneous media and commun	1_7_60	1_7	1
2	Massage therapists	2_3_2	2_3	2
3	Bartenders	2_3_2	2_3	2
4	Hosts and hostesses, restauran	2_3_2	2_3	2
5	Nonfarm animal caretakers	2_3_2	2_3	2
6	Gaming services workers	2_3_2	2_3	2
7	Miscellaneous entertainment at	2_3_2	2_3	2
8	Embalmers and funeral attendan	2_3_2	2_3	2
9	Baggage porters, bellhops, and	2_3_2	2_3	2
10	Cashiers	2_3_2	2_3	2
11	Counter and rental clerks	2_3_2	2_3	2
12	Gaming cage workers	2_3_2	2_3	2
13	Hotel, motel, and resort desk	2_3_2	2_3	2
14	Postal service clerks	2_3_2	2_3	2
15	Brickmasons, blockmasons, and	2_3_5	2_3	2
16	Carpet, floor, and tile instal	2_3_5	2_3	2
17	Cement masons, concrete finish	2_3_5	2_3	2
18	Drywall installers, ceiling ti	2_3_5	2_3	2
19	Glaziers	2_3_5	2_3	2
20	Painters, construction and mai	2_3_5	2_3	2
21	Helpers, construction trades	2_3_5	2_3	2
22	Automotive body and related re	2_3_5	2_3	2
23	Automotive glass installers an	2_3_5	2_3	2
24	Artists and related workers	2_3_11	2_3	2
25	Designers	2_3_11	2_3	2
26	Photographers	2_3_11	2_3	2
27	Television, video, and motion	2_3_11	2_3	2
28	Precision instrument and equip	2_3_11	2_3	2
29	Tailors, dressmakers, and sewe	2_3_11	2_3	2
30	Jewelers and precious stone an	2_3_11	2_3	2
31	Medical, dental, and ophthalmi	2_3_11	2_3	2
32	Photographic process workers a	2_3_11	2_3	2
33	Etchers and engravers	2_3_11	2_3	2
34	Carpenters	2_3_12	2_3	2
35	Plasterers and stucco masons	2_3_12	2_3	2
36	Reinforcing iron and rebar wor	2_3_12	2_3	2
37	Roofers	2_3_12	2_3	2
38	Sheet metal workers	2_3_12	2_3	2
39	Structural iron and steel work	2_3_12	2_3	2
40	Boilermakers	2_3_15	2_3	2
41	Electric motor, power tool, an	2_3_15	2_3	2
42	Bus and truck mechanics and di	2_3_15	2_3	2
43	Maintenance and repair workers	2_3_15	2_3	2
44	Millwrights	2_3_15	2_3	2
45	Electrical power-line installe	2_3_15	2_3	2
46	Manufactured building and mobi	2_3_15	2_3	2
47	Riggers	2_3_15	2_3	2
48	Helpers—installation, mainten	2_3_15	2_3	2
49	Other installation, maintenanc	2_3_15	2_3	2

	Title	Class_67	Class_9	Class_4
1	Library technicians	2_3_20	2_3	2
2	Security guards and gaming sur	2_3_20	2_3	2
3	File Clerks	2_3_20	2_3	2
4	Library assistants, clerical	2_3_20	2_3	2
5	Cargo and freight agents	2_3_20	2_3	2
6	Shipping, receiving, and traff	2_3_20	2_3	2
7	Weighers, measurers, checkers,	2_3_20	2_3	2
8	Extruding and drawing machine	2_3_21	2_3	2
9	Metalworkers and plastic worke	2_3_21	2_3	2
10	Miscellaneous textile, apparel	2_3_21	2_3	2
11	Extruding, forming, pressing,	2_3_21	2_3	2
12	Cementing and gluing machine o	2_3_21	2_3	2
13	Molders, shapers, and casters,	2_3_21	2_3	2
14	Paper goods machine setters, o	2_3_21	2_3	2
15	Tire builders	2_3_21	2_3	2
16	Production workers, including	2_3_21	2_3	2
17	Food cooking machine operators	2_3_22	2_3	2
18	Metal furnace and kiln operato	2_3_22	2_3	2
19	Molders and molding machine se	2_3_22	2_3	2
20	Welding, soldering, and brazin	2_3_22	2_3	2
21	Plating and coating machine se	2_3_22	2_3	2
22	Sawing machine setters, operat	2_3_22	2_3	2
23	Cutting workers	2_3_22	2_3	2
24	Furnace, kiln, oven, drier, an	2_3_22	2_3	2
25	Inspectors, testers, sorters,	2_3_22	2_3	2
26	Helpers-production workers	2_3_22	2_3	2
27	Machine feeders and offbearers	2_3_22	2_3	2
28	Heavy vehicle and mobile equip	2_3_23	2_3	2
29	Small engine mechanics	2_3_23	2_3	2
30	Miscellaneous vehicle and mobi	2_3_23	2_3	2
31	Control and valve installers a	2_3_23	2_3	2
32	Home appliance repairers	2_3_23	2_3	2
33	Locksmiths and safe repairers	2_3_23	2_3	2
34	Aircraft structure, surfaces,	2_3_24	2_3	2
35	Electrical, electronics, and e	2_3_24	2_3	2
36	Engine and other machine assem	2_3_24	2_3	2
37	Structural metal fabricators a	2_3_24	2_3	2
38	Cutting, punching, and press m	2_3_24	2_3	2
39	Lathe and turning machine tool	2_3_24	2_3	2
40	Woodworking machine setters, o	2_3_24	2_3	2
41	Industrial and refractory mach	2_3_30	2_3	2
42	Maintenance workers, machinery	2_3_30	2_3	2
43	Machinists	2_3_30	2_3	2
44	Tool and die makers	2_3_30	2_3	2
45	Cabinetmakers and bench carpen	2_3_30	2_3	2
46	Miscellaneous woodworkers, inc	2_3_30	2_3	2
47	Pest control workers	2_3_32	2_3	2
48	Grounds maintenance workers	2_3_32	2_3	2
49	Animal trainers	2_3_32	2_3	2
50	Meter readers, utilities	2_3_32	2_3	2

	Title	Class_67	Class_9	Class_4
1	First-line supervisors of farm	2_3_32	2_3	2
2	Miscellaneous agricultural wor	2_3_32	2_3	2
3	Forest and conservation worker	2_3_32	2_3	2
4	Logging workers	2_3_32	2_3	2
5	Construction laborers	2_3_32	2_3	2
6	Paving, surfacing, and tamping	2_3_32	2_3	2
7	Insulation workers	2_3_32	2_3	2
8	Pipelayers, plumbers, pipefitt	2_3_32	2_3	2
9	Fence erectors	2_3_32	2_3	2
10	Hazardous materials removal wo	2_3_32	2_3	2
11	Highway maintenance workers	2_3_32	2_3	2
12	Rail-track laying and maintena	2_3_32	2_3	2
13	Miscellaneous construction and	2_3_32	2_3	2
14	Other extraction workers, incl	2_3_32	2_3	2
15	Coin, vending, and amusement m	2_3_32	2_3	2
16	Driver/sales workers and truck	2_3_32	2_3	2
17	Service station attendants	2_3_32	2_3	2
18	Industrial truck and tractor o	2_3_32	2_3	2
19	Laborers and freight, stock, a	2_3_32	2_3	2
20	Pumping station operators	2_3_32	2_3	2
21	Power plant operators, distrib	2_3_39	2_3	2
22	Stationary engineers and boile	2_3_39	2_3	2
23	Water and liquid waste treatme	2_3_39	2_3	2
24	Miscellaneous plant and system	2_3_39	2_3	2
25	Chemical processing machine se	2_3_39	2_3	2
26	Switchboard operators, includi	2_3_46	2_3	2
27	Telephone operators	2_3_46	2_3	2
28	Rolling machine setters, opera	2_3_49	2_3	2
29	Grinding, lapping, polishing,	2_3_49	2_3	2
30	Tool grinders, filers, and sha	2_3_49	2_3	2
31	Textile cutting machine setter	2_3_49	2_3	2
32	Upholsterers	2_3_49	2_3	2
33	Crushing, grinding, polishing,	2_3_49	2_3	2
34	Packaging and filling machine	2_3_49	2_3	2
35	Elevator installers and repair	2_3_53	2_3	2
36	Aircraft mechanics and service	2_3_53	2_3	2
37	Automotive service technicians	2_3_53	2_3	2
38	Heating, air conditioning, and	2_3_53	2_3	2
39	Construction equipment operato	2_3_62	2_3	2
40	Mining machine operators	2_3_62	2_3	2
41	Locomotive engineers and opera	2_3_62	2_3	2
42	Subway, streetcar, and other r	2_3_62	2_3	2
43	Crane and tower operators	2_3_62	2_3	2
44	Hoist and winch operators, and	2_3_62	2_3	2
45	Material moving workers, inclu	2_3_62	2_3	2
46	Broadcast and sound engineerin	2_3_63	2_3	2
47	Electricians	2_3_63	2_3	2
48	Computer, automated teller, an	2_3_63	2_3	2
49	Radio and telecommunications e	2_3_63	2_3	2
50	Avionics technicians	2_3_63	2_3	2

	Title	Class_67	Class_9	Class_4
1	Electrical and electronics rep	2_3_63	2_3	2
2	Electronic equipment installer	2_3_63	2_3	2
3	Electronic home entertainment	2_3_63	2_3	2
4	Security and fire alarm system	2_3_63	2_3	2
5	Telecommunications line instal	2_3_63	2_3	2
6	Barbers	2_3_67	2_3	2
7	Hairdressers, hairstylists, an	2_3_67	2_3	2
8	Miscellaneous personal appeara	2_3_67	2_3	2
9	Bakers	2_3_33	2_3	2
10	Food and tobacco roasting, bak	2_3_33	2_3	2
11	Food batchmakers	2_3_33	2_3	2
12	Textile knitting and weaving m	2_3_33	2_3	2
13	Cleaning, washing, and metal p	2_3_33	2_3	2
14	Animal control workers	2_3_51	2_3	2
15	Other transportation workers,	2_3_51	2_3	2
16	Refuse and recyclable material	2_3_51	2_3	2
17	Proofreaders and copy markers	2_4_26	2_4	2
18	Food preparation workers	2_6_16	2_6	2
19	Waiters and waitresses	2_6_16	2_6	2
20	Food preparation and serving r	2_6_16	2_6	2
21	Dishwashers	2_6_16	2_6	2
22	Packers and packagers, hand	2_6_16	2_6	2
23	Food servers, nonrestaurant	2_6_25	2_6	2
24	Janitors and building cleaners	2_6_25	2_6	2
25	Maids and housekeeping cleaner	2_6_25	2_6	2
26	Butchers and other meat, poult	2_6_25	2_6	2
27	Laundry and dry-cleaning worke	2_6_25	2_6	2
28	Shoe and leather workers and r	2_6_25	2_6	2
29	Cleaners of vehicles and equip	2_6_25	2_6	2
30	Couriers and messengers	2_6_31	2_6	2
31	Postal service mail carriers	2_6_31	2_6	2
32	Parking lot attendants	2_6_31	2_6	2
33	Ushers, lobby attendants, and	2_6_43	2_6	2
34	Models, demonstrators, and pro	2_6_43	2_6	2
35	Painting workers	2_6_48	2_6	2
36	Postal service mail sorters, p	2_6_57	2_6	2
37	Mail clerks and mail machine o	2_6_57	2_6	2
38	Sewing machine operators	2_6_57	2_6	2
39	Dredge, excavating, and loadin	2_6_18	2_6	2
40	Crossing guards	2_6_36	2_6	2
41	Graders and sorters, agricultu	2_6_36	2_6	2
42	Office machine operators, exce	2_6_47	2_6	2
43	Textile winding, twisting, and	2_6_47	2_6	2
44	Furniture finishers	2_6_47	2_6	2
45	Pressers, textile, garment, an	2_6_64	2_6	2
46	Dancers and choreographers	2_9_3	2_9	2
47	Door-to-door sales workers, ne	3_2_8	3_2	3
48	Operations research analysts	4_1_6	4_1	4
49	Physical scientists, all other	4_1_6	4_1	4
50	Logisticians	4_1_6	4_1	4

	Title	Class_67	Class_9	Class_4
1	Sales engineers	4_1_10	4_1	4
2	Astronomers and physicists	4_1_17	4_1	4
3	Actuaries	4_1_27	4_1	4
4	Economists	4_1_27	4_1	4
5	Agricultural and food scientis	4_1_34	4_1	4
6	Biological scientists	4_1_34	4_1	4
7	Medical scientists and life sc	4_1_34	4_1	4
8	Environmental scientists and g	4_1_34	4_1	4
9	Mathematicians, statisticians	4_1_37	4_1	4
10	Atmospheric and space scientis	4_1_37	4_1	4
11	Statistical assistants	4_1_37	4_1	4
12	Aerospace engineers	4_1_38	4_1	4
13	Chemical engineers	4_1_38	4_1	4
14	Environmental engineers	4_1_38	4_1	4
15	Industrial engineers, includin	4_1_38	4_1	4
16	Marine engineers and naval arc	4_1_38	4_1	4
17	Materials engineers	4_1_38	4_1	4
18	Mechanical engineers	4_1_38	4_1	4
19	Petroleum engineers	4_1_38	4_1	4
20	Engineers, all other, includin	4_1_38	4_1	4
21	Financial managers	4_1_58	4_1	4
22	Financial examiners	4_1_58	4_1	4
23	Architects, except naval	4_1_65	4_1	4
24	Civil engineers	4_1_65	4_1	4
25	Urban and regional planners	4_1_65	4_1	4
26	Biological technicians	4_5_1	4_5	4
27	Chemical technicians	4_5_1	4_5	4
28	Computer hardware engineers	4_5_4	4_5	4
29	Electrical and electronic engi	4_5_4	4_5	4
30	Engineering technicians, excep	4_5_4	4_5	4
31	Chemists and materials scienti	4_5_4	4_5	4
32	Drafters	4_5_7	4_5	4
33	Technical writers	4_5_7	4_5	4
34	Court, municipal, and license	4_5_7	4_5	4
35	Office and administrative supp	4_5_7	4_5	4
36	Prepress technicians and worke	4_5_7	4_5	4
37	Special education teachers	4_5_9	4_5	4
38	Occupational therapists	4_5_9	4_5	4
39	Physical therapists	4_5_9	4_5	4
40	Radiation therapists	4_5_9	4_5	4
41	Recreational therapists	4_5_9	4_5	4
42	Licensed practical and license	4_5_9	4_5	4
43	Occupational therapist assista	4_5_9	4_5	4
44	Physical therapist assistants	4_5_9	4_5	4
45	Archivists, curators, and muse	4_5_13	4_5	4
46	Dispatchers	4_5_13	4_5	4
47	Preschool and kindergarten tea	4_5_14	4_5	4
48	Elementary and middle school t	4_5_14	4_5	4
49	Secondary school teachers	4_5_14	4_5	4
50	Other teachers and instructors	4_5_14	4_5	4

	Title	Class_67	Class_9	Class_4
1	Other education, training, and	4_5_14	4_5	4
2	Athletes, coaches, umpires, an	4_5_14	4_5	4
3	Child care workers	4_5_14	4_5	4
4	Recreation and fitness workers	4_5_14	4_5	4
5	Residential advisors	4_5_14	4_5	4
6	Psychologists	4_5_19	4_5	4
7	Counselors	4_5_19	4_5	4
8	Social workers	4_5_19	4_5	4
9	Lawyers, Judges, magistrates,	4_5_19	4_5	4
10	Postsecondary teachers	4_5_19	4_5	4
11	Chief executives	4_5_28	4_5	4
12	Computer and information syste	4_5_28	4_5	4
13	Industrial production managers	4_5_28	4_5	4
14	Purchasing managers	4_5_28	4_5	4
15	Transportation, storage, and d	4_5_28	4_5	4
16	General and operations manager	4_5_28	4_5	4
17	Construction managers	4_5_28	4_5	4
18	Engineering managers	4_5_28	4_5	4
19	Managers, all other	4_5_28	4_5	4
20	Production, planning, and expe	4_5_28	4_5	4
21	Cost estimators	4_5_28	4_5	4
22	Bill and account collectors	4_5_35	4_5	4
23	Billing and posting clerks and	4_5_35	4_5	4
24	Bookkeeping, accounting, and a	4_5_35	4_5	4
25	Payroll and timekeeping clerks	4_5_35	4_5	4
26	Procurement clerks	4_5_35	4_5	4
27	Tellers	4_5_35	4_5	4
28	Brokerage clerks	4_5_35	4_5	4
29	Credit authorizers, checkers,	4_5_35	4_5	4
30	Eligibility interviewers, gove	4_5_35	4_5	4
31	Interviewers, except eligibili	4_5_35	4_5	4
32	New accounts clerks	4_5_35	4_5	4
33	Correspondence clerks and orde	4_5_35	4_5	4
34	Human resources assistants, ex	4_5_35	4_5	4
35	Claims adjusters, appraisers,	4_5_35	4_5	4
36	Receptionists and information	4_5_35	4_5	4
37	Secretaries and administrative	4_5_35	4_5	4
38	Data entry keyers	4_5_35	4_5	4
39	Word processors and typists	4_5_35	4_5	4
40	Insurance claims and policy pr	4_5_35	4_5	4
41	Office clerks, general	4_5_35	4_5	4
42	Dentists	4_5_40	4_5	4
43	Optometrists	4_5_40	4_5	4
44	Veterinarians	4_5_40	4_5	4
45	Clergy	4_5_41	4_5	4
46	Directors, religious activitie	4_5_41	4_5	4
47	Education administrators	4_5_41	4_5	4
48	Food service managers	4_5_41	4_5	4
49	Gaming managers	4_5_41	4_5	4
50	Medical and health services ma	4_5_41	4_5	4

	Title	Class_67	Class_9	Class_4
1	Natural sciences managers	4_5_41	4_5	4
2	Chefs and head cooks	4_5_41	4_5	4
3	First-line supervisors/manager	4_5_41	4_5	4
4	Property, real estate, and com	4_5_41	4_5	4
5	Social and community service m	4_5_41	4_5	4
6	First-line supervisors/manager	4_5_41	4_5	4
7	First-line supervisors/manager	4_5_41	4_5	4
8	First-line supervisors/manager	4_5_41	4_5	4
9	Management analysts	4_5_41	4_5	4
10	Actors	4_5_42	4_5	4
11	Musicians, singers, and relate	4_5_42	4_5	4
12	Announcers	4_5_42	4_5	4
13	Writers and authors	4_5_42	4_5	4
14	Chiropractors	4_5_44	4_5	4
15	Dietitians and nutritionists	4_5_44	4_5	4
16	Pharmacists	4_5_44	4_5	4
17	Audiologists	4_5_44	4_5	4
18	Speech-language pathologists	4_5_44	4_5	4
19	Other healthcare practitioners	4_5_44	4_5	4
20	Physician assistants	4_5_45	4_5	4
21	Respiratory therapists	4_5_45	4_5	4
22	Diagnostic related technologis	4_5_45	4_5	4
23	First-line supervisors/manager	4_5_50	4_5	4
24	First-line supervisors/manager	4_5_50	4_5	4
25	Bailiffs, correctional officer	4_5_50	4_5	4
26	Detectives and criminal invest	4_5_50	4_5	4
27	Private detectives and investi	4_5_50	4_5	4
28	Opticians, dispensing	4_5_52	4_5	4
29	Dental assistants	4_5_52	4_5	4
30	Surveyors, cartographers, and	4_5_54	4_5	4
31	Surveying and mapping technici	4_5_54	4_5	4
32	Agricultural inspectors	4_5_54	4_5	4
33	Construction and building insp	4_5_54	4_5	4
34	Conservation scientists and fo	4_5_55	4_5	4
35	First-line supervisors/manager	4_5_55	4_5	4
36	Fire fighters	4_5_55	4_5	4
37	Fire inspectors	4_5_55	4_5	4
38	Sailors and marine oilers, and	4_5_55	4_5	4
39	Ship and boat captains and ope	4_5_55	4_5	4
40	Securities, commodities, and f	4_5_56	4_5	4
41	Customer service representativ	4_5_56	4_5	4
42	Loan interviewers and clerks	4_5_56	4_5	4
43	Accountants and auditors	4_5_56	4_5	4
44	Budget analysts	4_5_56	4_5	4
45	Credit analysts	4_5_56	4_5	4
46	Personal financial advisors	4_5_56	4_5	4
47	Insurance underwriters	4_5_56	4_5	4
48	Loan counselors and officers	4_5_56	4_5	4
49	Tax examiners, collectors, and	4_5_56	4_5	4
50	Tax preparers	4_5_56	4_5	4

	Title	Class_67	Class_9	Class_4
1	Farmers, ranchers, and other a	4_5_59	4_5	4
2	First-line supervisors/manager	4_5_59	4_5	4
3	First-line supervisors/manager	4_5_59	4_5	4
4	Derrick, rotary drill, and ser	4_5_59	4_5	4
5	First-line supervisors/manager	4_5_59	4_5	4
6	First-line supervisors/manager	4_5_59	4_5	4
7	Air traffic controllers and ai	4_5_61	4_5	4
8	Flight attendants	4_5_61	4_5	4
9	Railroad brake, signal, switch	4_5_61	4_5	4
10	Transportation inspectors	4_5_61	4_5	4
11	Public relations specialists	4_5_66	4_5	4
12	Parts salespersons	4_5_66	4_5	4
13	Retail salespersons	4_5_66	4_5	4
14	Advertising sales agents	4_5_66	4_5	4
15	Insurance sales agents	4_5_66	4_5	4
16	Travel agents	4_5_66	4_5	4
17	Sales representatives, wholesa	4_5_66	4_5	4
18	Real estate brokers and sales	4_5_66	4_5	4
19	Telemarketers	4_5_66	4_5	4
20	Agents and business managers o	4_5_66	4_5	4
21	Reservation and transportation	4_5_66	4_5	4
22	Aircraft pilots and flight eng	4_8_29	4_8	4
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