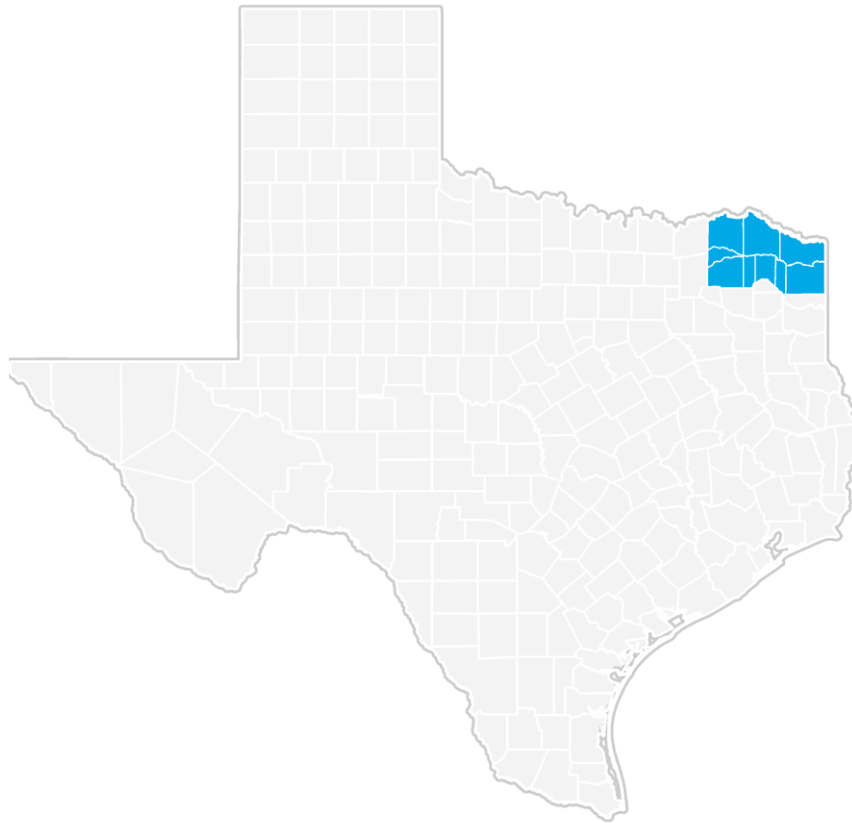


Occupation Report for Software Developers, Applications Workforce Solutions Northeast Texas



JOBS eQ

January 22, 2020

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Definition of Software Developers, Applications, SOC 15-1132

Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. May supervise computer programmers.

Occupation Snapshot

As of 2019Q3, total employment for Software Developers, Applications in the Workforce Solutions Northeast Texas was 208. Over the past three years, this occupation added 34 jobs in the region and is expected to increase by 22 jobs over the next seven years, or at an annual average rate of 1.5%.

Software Developers, Applications in Workforce Solutions Northeast Texas, 2019q3¹

Current		3-Year History						7-Year Forecast				
Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
208	\$87,700	0.28	3	1.9%	18	34	6.1%	120	22	76	22	1.5%

Source: JobsEQ®

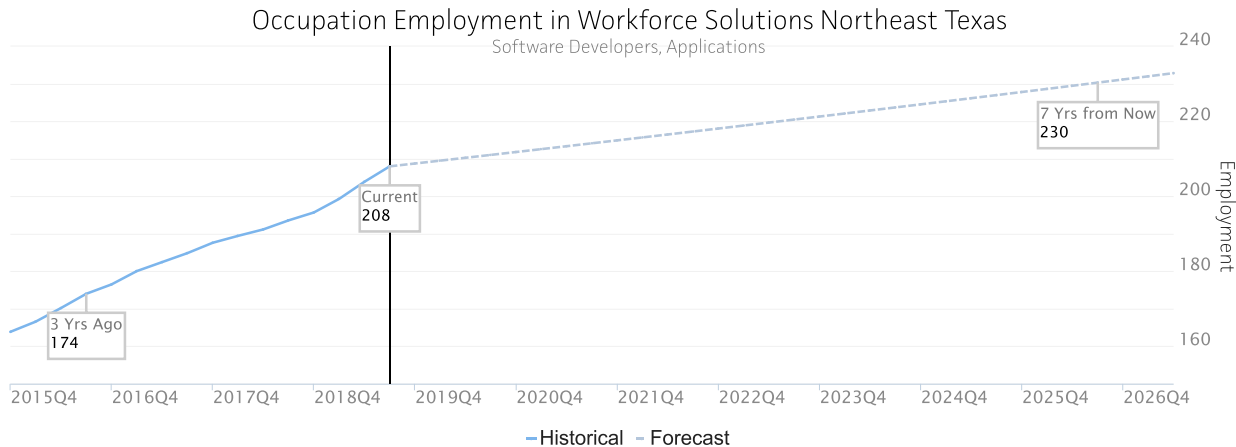
Data as of 2019Q3 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data are as of 2018 and represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region; data represents a sampling rather than the complete universe of postings. Ads lacking zip code information but designating a place (city, town, etc.) may be assigned to the zip code with greatest employment in that place for queries in this analytic. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list).



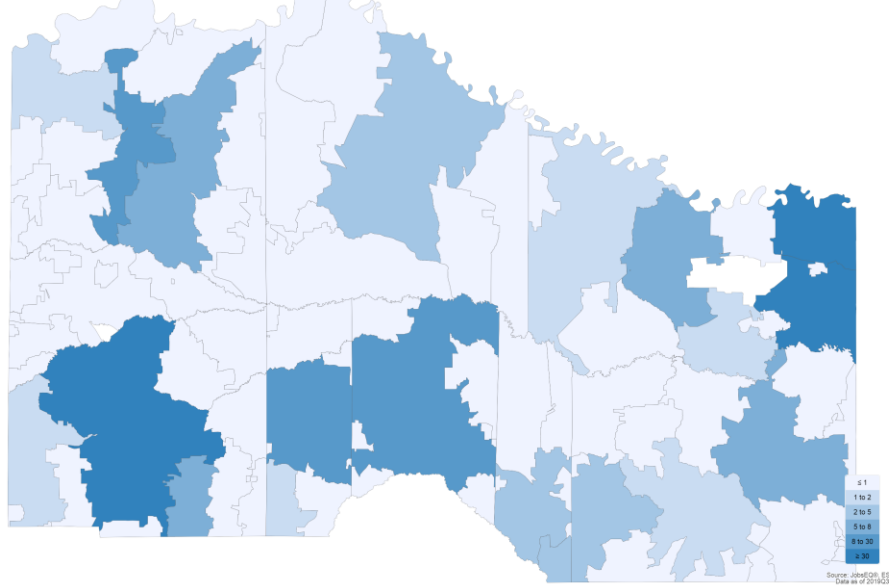
Source: JobsEQ®, Data as of 2019Q3. The shaded areas represent national recessions.

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q1, imputed where necessary with preliminary estimates updated to 2019Q3. Wages by occupation are as of 2018 provided by the BLS and imputed where necessary. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns. Occupation unemployment figures are imputed by Chmura.

Geographic Distribution

The below maps illustrate the ZCTA-level distribution of employed Software Developers, Applications in the Workforce Solutions Northeast Texas. Employment is shown by place of work and by residence.

Occupation Concentration by Place of Work for Software Developers, Applications



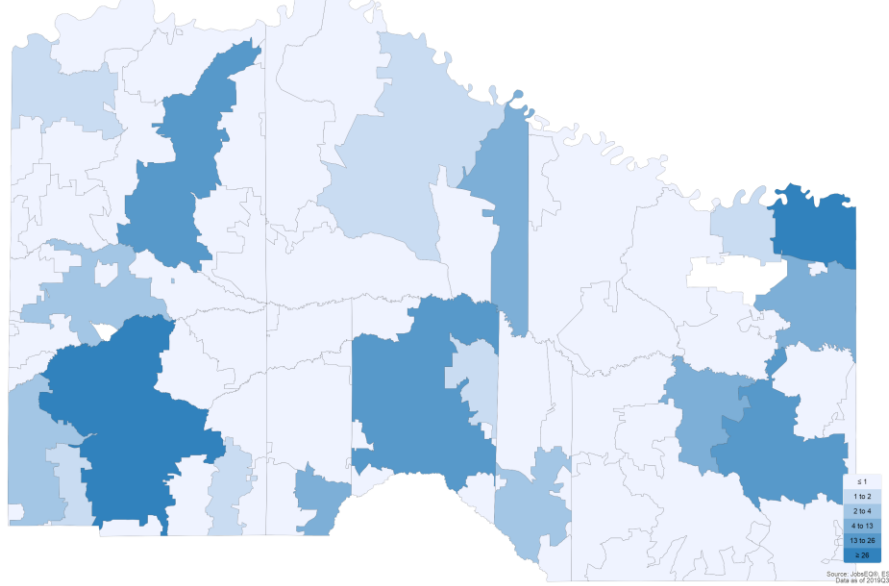
Top ZCTAs by Place of Work for Software Developers, Applications, 2019Q3

Region	Employment
ZCTA 75503	39
ZCTA 75501	31
ZCTA 75482	31
ZCTA 75460	24
ZCTA 75455 (Titus County, TX portion)	21
ZCTA 75457	8
ZCTA 75570	6
ZCTA 75431 (Hopkins County, TX portion)	6
ZCTA 75551	5
ZCTA 75462	5

Source: JobsEQ®

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q1, imputed where necessary with preliminary estimates updated to 2019Q3. Occupation by residence data are derived from the same in addition to commuting pattern data.

Occupation Concentration by Place of Residence for Software Developers, Applications



Top ZCTAs by Place of Residence for Software Developers, Applications, 2019Q3

Region	Employment
ZCTA 75503	52
ZCTA 75482	27
ZCTA 75462	20
ZCTA 75455 (Titus County, TX portion)	15
ZCTA 75551	13
ZCTA 75501	7
ZCTA 75480	6
ZCTA 75554 (Red River County, TX portion)	5
ZCTA 75560	4
ZCTA 75433	4

Source: JobsEQ®

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q1, imputed where necessary with preliminary estimates updated to 2019Q3. Occupation by residence data are derived from the same in addition to commuting pattern data.

Employment by Industry

The following table illustrates the industries in the Workforce Solutions Northeast Texas which most employ Software Developers, Applications. The single industry most employing this occupation in the region is Computer Systems Design and Related Services, NAICS 5415. This industry employs 54 Software Developers, Applications—employment which is expected to increase by 17 jobs over the next ten years; furthermore, 39 additional new workers in this occupation will be needed for this industry due to separation demand, that is, to replace workers in this occupation and industry that retire or move into a different occupation.

Top Industry Distribution for Software Developers, Applications (15-1132) in Workforce Solutions Northeast Texas

NAICS Code	Industry Title	Current			10-Year Demand		
		% of Occ Empl	Empl	Exits	Transfers	Empl Growth	Total Demand
5415	Computer Systems Design and Related Services	26.2%	54	9	30	17	55
5221	Depository Credit Intermediation	11.6%	24	3	12	2	17
5511	Management of Companies and Enterprises	4.9%	10	1	5	1	7
5191	Other Information Services	4.8%	10	2	6	3	11
5613	Employment Services	2.9%	6	1	3	1	5
6221	General Medical and Surgical Hospitals	2.4%	5	1	3	0	4
3364	Aerospace Product and Parts Manufacturing	2.4%	5	1	2	0	3
5112	Software Publishers	2.2%	5	1	3	1	5
5173	Wired and Wireless Telecommunications Carriers	2.1%	4	1	2	-1	2
9221	Justice, Public Order, and Safety Activities	2.0%	4	1	2	0	3
5416	Management, Scientific, and Technical Consulting Services	1.8%	4	1	2	1	4
5222	Nondepository Credit Intermediation	1.8%	4	1	2	1	4
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1.8%	4	1	2	0	3
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	1.8%	4	1	2	0	2
3331	Agriculture, Construction, and Mining Machinery Manufacturing	1.6%	3	0	2	0	2
6113	Colleges, Universities, and Professional Schools	1.2%	3	0	1	0	2
3329	Other Fabricated Metal Product Manufacturing	1.2%	3	0	1	0	2
5611	Office Administrative Services	1.2%	2	0	1	1	2
5242	Agencies, Brokerages, and Other Insurance Related Activities	1.1%	2	0	1	0	2
5241	Insurance Carriers	1.1%	2	0	1	0	2
	All Others	23.7%	49	7	25	4	36

Source: JobsEQ®

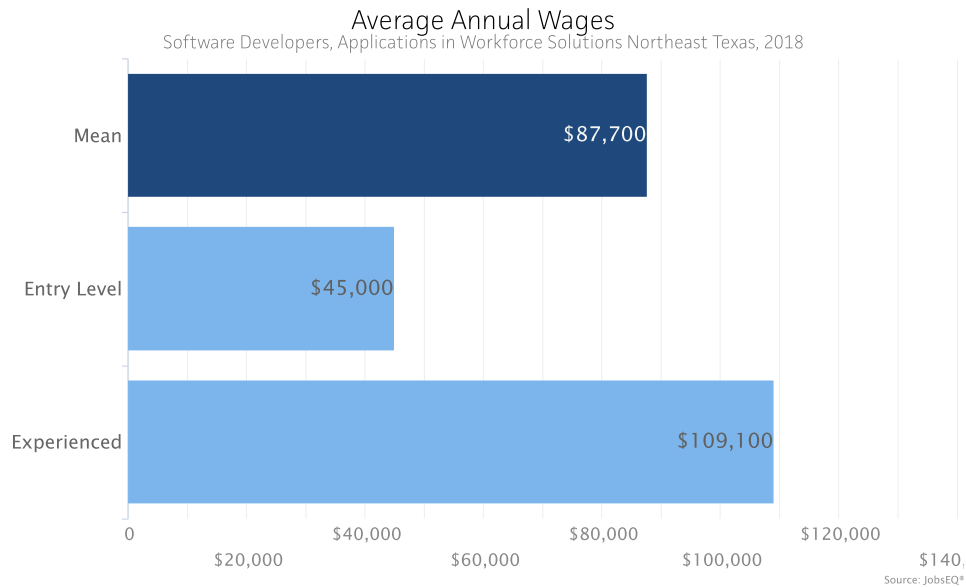
Data as of 2019Q3 except wages which are as of 2018. Note that occupation-by-industry wages represent adjusted national data and may not be consistent with regional, all-industry occupation wages shown elsewhere in JobsEQ.

Note: Figures may not sum due to rounding.

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2019Q1, imputed where necessary with preliminary estimates updated to 2019Q3. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Wages

The average (mean) annual wage for Software Developers, Applications was \$87,700 in the Workforce Solutions Northeast Texas as of 2018. For the same year, average entry level wages were approximately \$45,000 compared to an average of \$109,100 for experienced workers.



Occupation wages (mean, median, and percentiles) are as of 2018 provided by the BLS, modified and imputed by Chmura where necessary. Entry-level and experienced wages are derived from these source data, computed by Chmura.

Education Profile

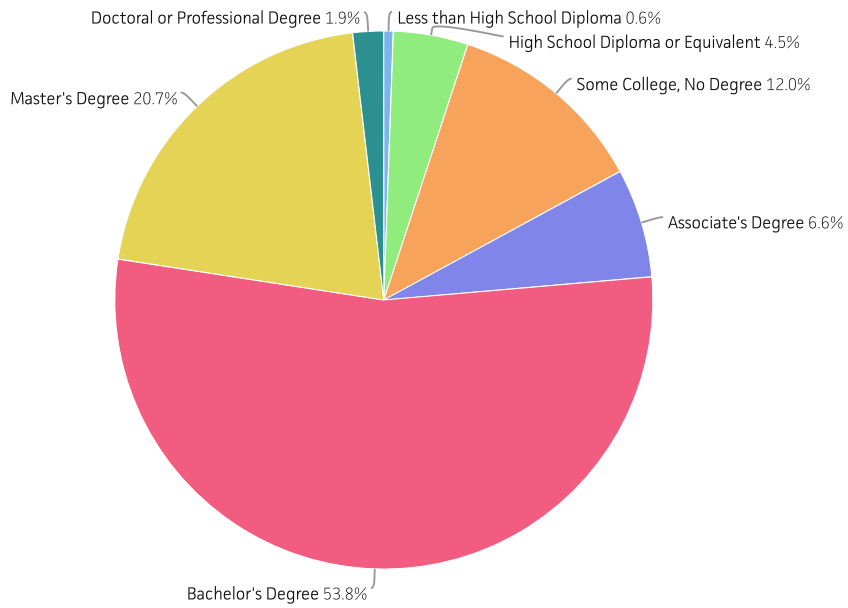
Typical education and training requirements for Software Developers, Applications are described below.

Education and Training Requirements

Typical Entry-Level Education:	Bachelor's degree
Previous Work Experience:	None
Typical On-the-Job Training:	None

Source: JobsEQ®

Educational Attainment Profile



Source: JobsEQ®

Education and training requirements are from the Bureau of Labor Statistics (BLS); educational attainment mix are regional data modeled by Chmura using Census educational attainment data projected to 2019Q3 along with source data from the BLS.

Awards

The table below is a list of postsecondary program awards that were granted by postsecondary institutions located in the Workforce Solutions Northeast Texas in the 2018 academic year. These programs have been identified as providing training for Software Developers, Applications (for further details, see the source note).

Title/School	Annual Awards - Workforce Solutions Northeast Texas		
	Certificates and 2yr Degrees	4yr Degrees	Postgraduate Degrees
11.0201 Computer Programming/Programmer, General			
Northeast Texas Community College	4	0	0
Texarkana College	12	0	0
Total			
Total	16	0	0

Source: JobsEQ®

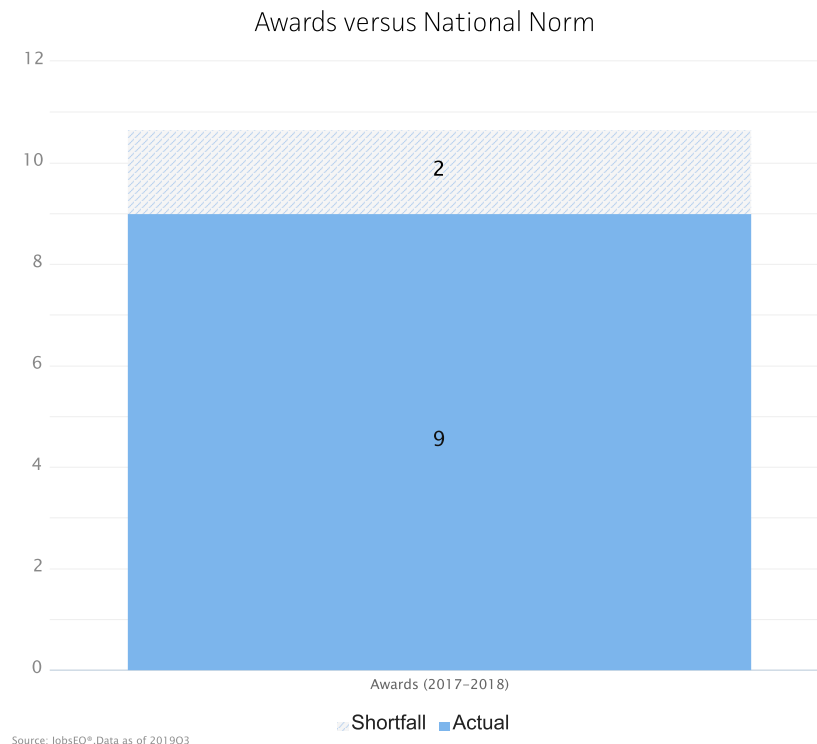
Data as of the 2018 academic year

Awards data are per the National Center for Education Statistics (NCES) and JobsEQ for the 2018 academic year. Any programs shown here have been identified as being linked with the occupation being analyzed. Other existing programs may also provide training in the region for this occupation but have not been so identified by the program-occupation crosswalk (see the FAQ section at the end of this report for more details). Furthermore, any programs shown here reflect only data reported to the NCES; reporting is required of all schools participating in any federal finance assistance program authorized by Title IV of the Higher Education Act of 1965, as amended—other training providers in the region that do not report data to the NCES are not reflected in the above.

Training Concentration

In the 2017-2018 academic year, it is estimated that postsecondary schools in the Workforce Solutions Northeast Texas granted awards for a potential 9 new Software Developers, Applications.¹ Given the size of this occupation in the region, this award output is below the national norm of 11 awards per year—put another way; it is at 85% of the national average.

Training concentrations above the national average can indicate that the region is an exporter of graduates for this occupation; in other words, some students may come from outside the region for this education and subsequently leave after the award to work outside the region. Training concentrations below the national average can indicate that the region is an importer of graduates for this occupation; in other words, some employers within the region who hire this occupation may need to hire workers who received this training outside of the region.



Awards data by occupation are estimates produced by JobsEQ and for the academic year 2017-2018.

¹ This figure may not match the total awards shown in the prior section since some of those awards may flow into more than one occupation.

Region Definition

Workforce Solutions Northeast Texas is defined as the following counties:

Bowie County, Texas

Cass County, Texas

Delta County, Texas

Franklin County, Texas

Hopkins County, Texas

Lamar County, Texas

Morris County, Texas

Red River County, Texas

Titus County, Texas

FAQ

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 840 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 23 major groups, 97 minor groups, and 461 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an occupation (or industry) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is training concentration?

The training concentration analysis compares local postsecondary training output compared to the national norm. Let's consider registered nurses as an example. If in the nation, one RN award is granted for every ten RNs employed, that 1:10 ratio is the national norm. If in your region your schools also grant one RN award for every ten RNs employed, then your region will be right at the national norm, or we say at 100% of the national norm which is termed a 100% training concentration. If your region grants two RN awards for every ten employed, your region would be at twice the national norm or have a 200% training concentration. Similarly, if your region grants one RN award for every twenty employed, your region would be at half the national norm or have a 50% training concentration.

What is the program-to-occupation crosswalk?

Training programs are classified according to the Classification of Instructional Programs (CIP codes). For relating training programs, this report uses a modified version of the CIP to SOC crosswalk from the National Center for Education Statistics (NCES). While this is a very helpful crosswalk for estimating occupation production from training program awards data, the crosswalk is neither perfect nor comprehensive. Indeed, it is hard to imagine such a crosswalk being perfect since many training program graduates for one reason or another do not end up employed in occupations that are most related to the training program from which they graduated. Therefore, the education program analyses should be considered in this light.

As an example of the many scenarios that may unfold, consider a journalism degree that crosswalks into three occupations: editors, writers, and postsecondary communications teachers. Graduates with a journalism degree may get a job in one of these occupations—and that may be the most-likely scenario—but a good number of these graduates may get a job in a different occupation altogether (the job may be somewhat related, such as a reporter, or the job may be totally unrelated, such as a real estate agent). Furthermore, a graduate may stay in school or go back to school for a degree that will lead to other occupation possibilities. Still another possibility includes the graduate not entering the labor market (maybe being unemployed, being a non-participant, or moving to another region).

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the “all industry” level to the 6-digit level. The first two digits define the top level category, known as the “sector,” which is the level examined in this report.

About This Report

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