



Occupations Requiring Coding Skills Gulf Coast Region

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Workforce Demands of Occupations Requiring Coding Skills

“Coder” is a broad term used to reference individuals whose primary function is to write the computer code that allows software programs to run. There is a long list of occupations that require the ability to write computer code.

Computer programming projects vary widely and can require as little as a few days or a year. The work is highly detailed and requires very specific knowledge of programming languages depending on the purpose of the program. A coder’s task usually begins after the computer programmer, software developer or engineer completes design specifications for a particular program.

While a computer programmer typically complete tasks of a much larger scale than a coder, they are often the first that comes to mind when referencing coding. In the job market, programmers often are referred to by the language they specialize in or by the type of function they perform or environment in which they work—for example java programmer, COBOL programmer, database programmers, mainframe programmers, or Web programmers.

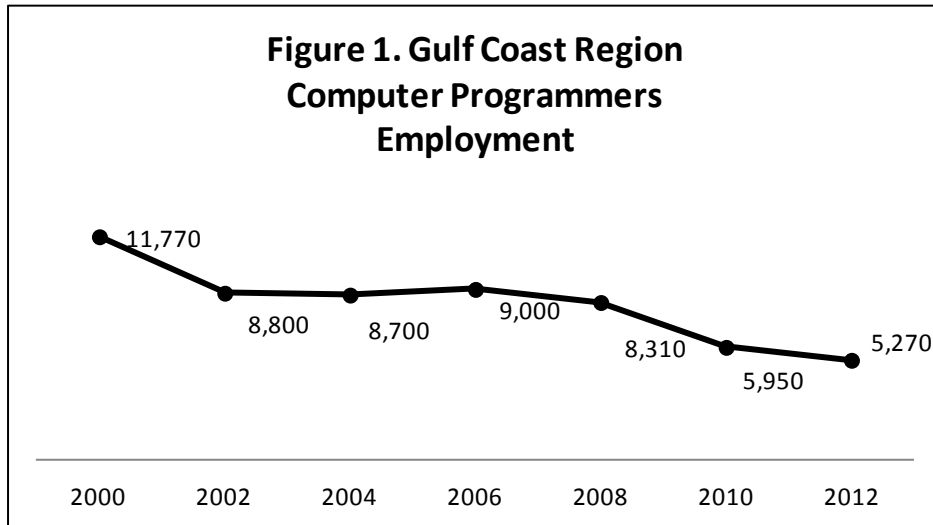
The following pages provide some data related to occupations requiring coding skills including:

- Past and future employment estimates
- Job advertisement data; hiring trends - Wanted Analytics
- Wages
- Education

Past and Future Employment

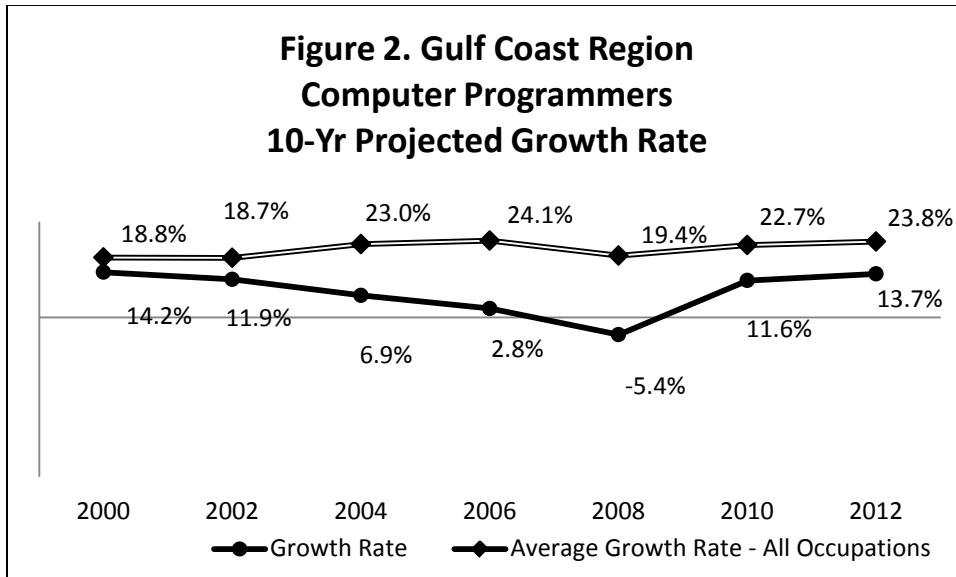
Computer Programmers

The number of computer programmers working in the Gulf Coast Region peaked at the end of the dot-com boom in 2000 at 11,770. As Figure 1 illustrates, by 2012 the number of computer programmers in the region had declined to less than half of what they were in 2000.



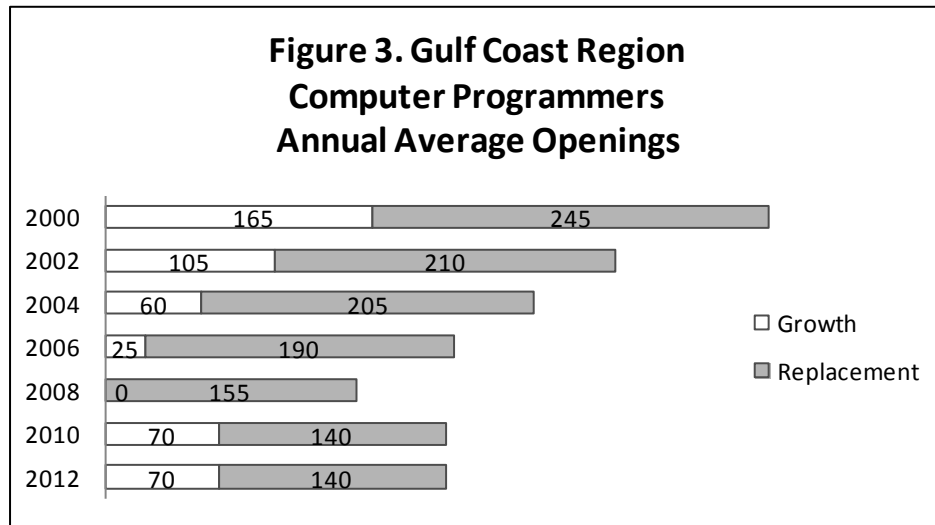
Source: Texas Workforce Commission LMCI Dept.

As Figure 2 illustrates, the projected growth rate for computer programmers, while mostly positive, have been well below the projected growth rate for all occupations across the region.



Source: Texas Workforce Commission LMCI Dept.

Just as in Figures 1 and 2, Figure 3 illustrates a gradual decline in the number of annual average openings for computer programmers in the region. Most of the annual demand has been due to replacement needs.



Source: Texas Workforce Commission LMCI Dept.

A summary of historical estimated projections for computer programmers is provided below. While the ten year projected growth rate bottomed out at -5.4% in 2008 it has increased to 13.7% by 2012. Most projections have been positive since 2000 but the number of computer programmers in the region continues to decline as illustrated in Figure 1.

Gulf Coast Region

10 Year Projections from the Texas Workforce Commission LMCI Dept.

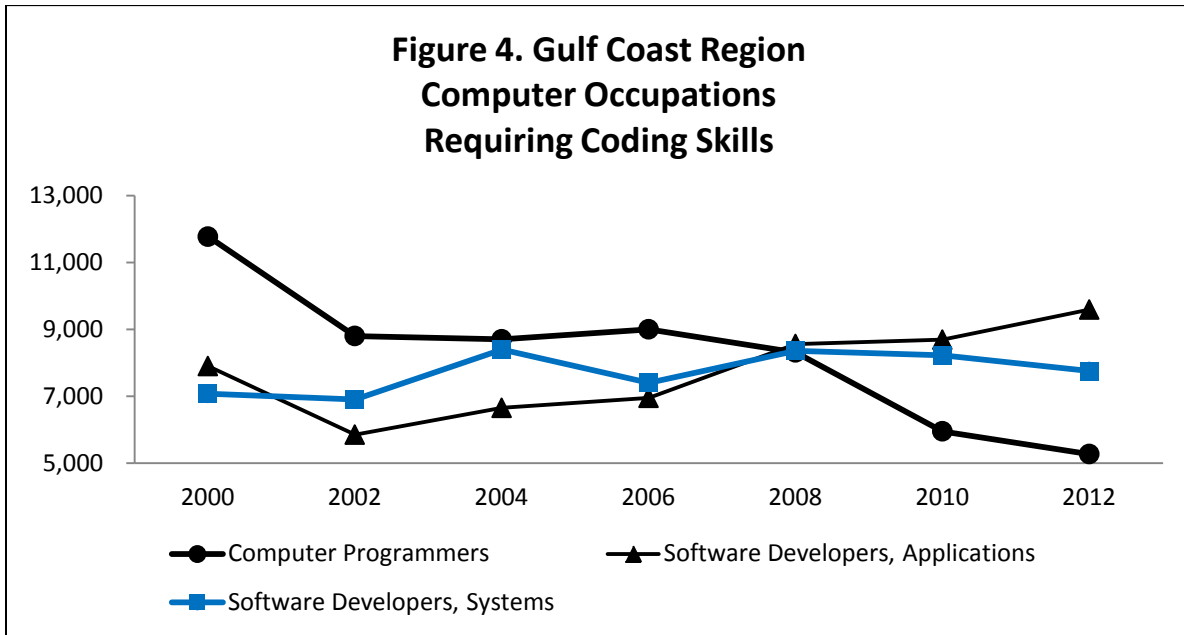
Year	Employment	Projected Employment in 10 Years	Absolute Change	10 Year Growth Rate	10 Year Growth Rate for All Occupations	Annual Average Openings		
						Growth	Replace ment	Total
2000	11,770	13,440	1,670	14.2%	18.8%	165	245	410
2002	8,800	9,850	1,050	11.9%	18.7%	105	210	315
2004	8,700	9,300	600	6.9%	23.0%	60	205	265
2006	9,000	9,250	250	2.8%	24.1%	25	190	215
2008	8,310	7,860	(450)	-5.4%	19.4%	0	155	155
2010	5,950	6,640	690	11.6%	22.7%	70	140	210
2012	5,270	5,990	720	13.7%	23.8%	70	140	210

Reasons for declining demand for computer programmers:

- Consolidation of system and application development
- Automation of programming functions and other advancements allowing users to design, write, and implement functions by other types of information workers
- Offshore outsourcing

Top Occupations Requiring Coding Skills

Figure 4 provides estimated employment for three of the top computer occupations requiring coding skills. While two of the three occupations experienced job growth from 2000 to 2012, applications software developers was the only occupation to add jobs over the last four years of available data.



	2008	2012	Number Change 2008 to 2012	Percent Change 2000 to 2012
Computer Programmers	8,310	5,270	(3,040)	-36.6%
Software Developers, Applications	8,560	9,590	1,030	12.0%
Software Developers, Systems	8,360	7,750	(610)	-7.3%

	2000	2012	Number Change 2000 to 2012	Percent Change 2000 to 2012
Computer Programmers	11,770	5,270	(6,500)	-55.2%
Software Developers, Applications	7,900	9,590	1,690	21.4%
Software Developers, Systems	7,070	7,750	680	9.6%

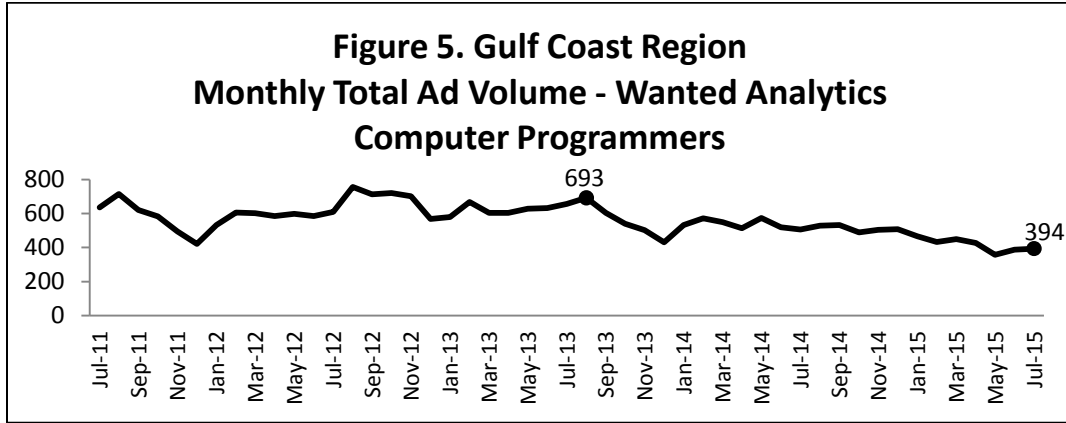
Source: Texas Workforce Commission LMCI Dept.

Web developers are another occupation requiring a substantial amount of coding skills. While historical projection data is not available, current projections estimate job growth to be above average.

	2012	2022	Number Change 2012 to 2022	Percent Change	Annual Average Openings		
					Growth	Replacement	Total
Web Developers	2,500	3,130	630	25.2%	65	40	105
Total All Occupations	2,987,190	3,699,620	712,430	23.8%	71,245	69,790	141,035

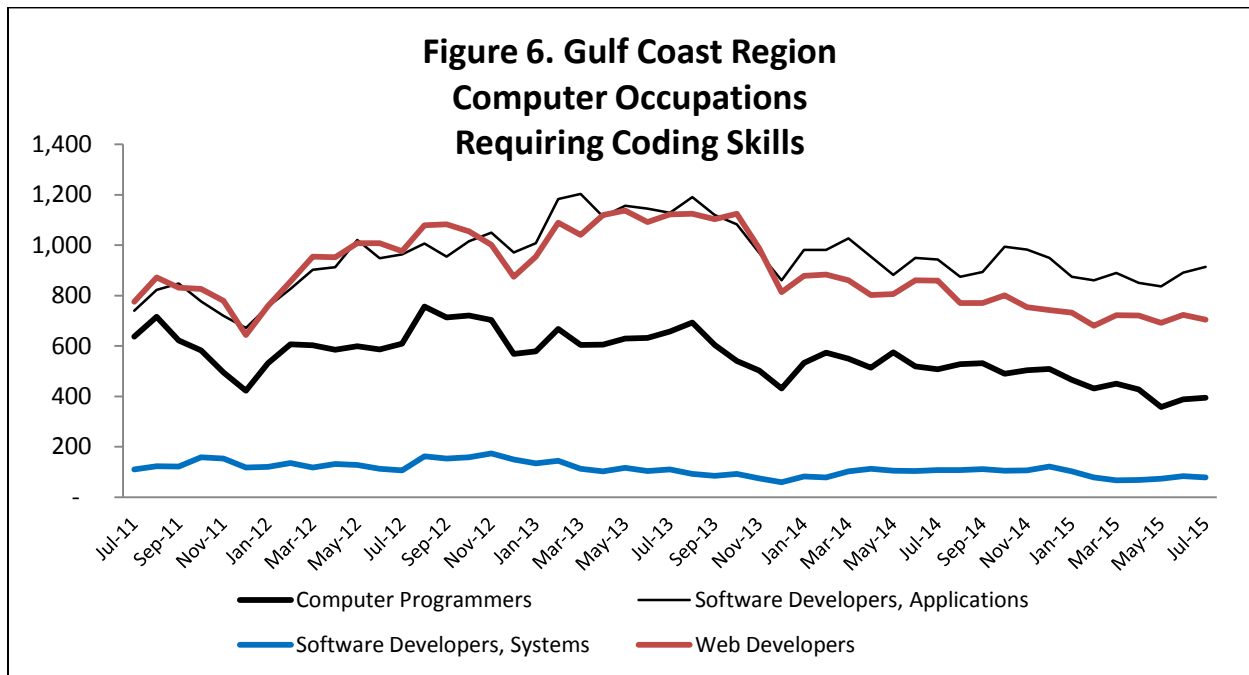
Job Ads

Figure 5 illustrates a slight decline in the monthly total number of ads for computer programmers since 2011 in the region. The most recent peak was in September 2013 with 693 ads which have since fallen to 394 (43.1%) by July 2015.



Source: Wanted Analytics

Figure 6 provides monthly total ad volume for four of the top computer occupations requiring coding skills. Note the gradual decline in ad volume since late 2013.



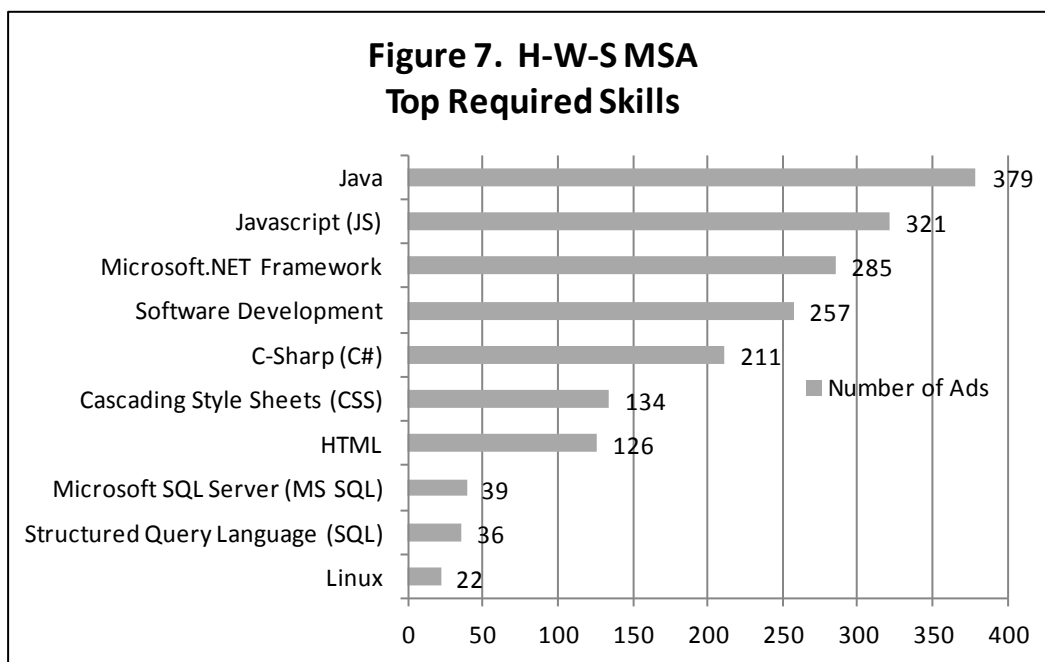
Source: Wanted Analytics

In a semiannual review of total monthly ads for the top computer occupations requiring coding skills we find they peaked in July 2013 at 3,018 and have since declined by 30.7% to 2,091. Computer programmers and web developers have seen the largest decline over the last two years.

Gulf Coast Region
Monthly Total Ad Volume

				Number Change	Percent Change	Number Change	Percent Change
	Jul-11	Jul-13	Jul-15	July 2011 to July 2015	July 2011 to July 2015	July 2013 to July 2015	July 2013 to July 2015
Computer Programmers	637	657	394	(243)	-38.1%	(263)	-40.0%
Software Developers, Applications	740	1,129	914	174	23.5%	(215)	-19.0%
Software Developers, Systems	110	110	78	(32)	-29.1%	(32)	-29.1%
Web Developers	775	1,122	705	(70)	-9.0%	(417)	-37.2%
Total	2,262	3,018	2,091	(171)	-7.6%	(927)	-30.7%

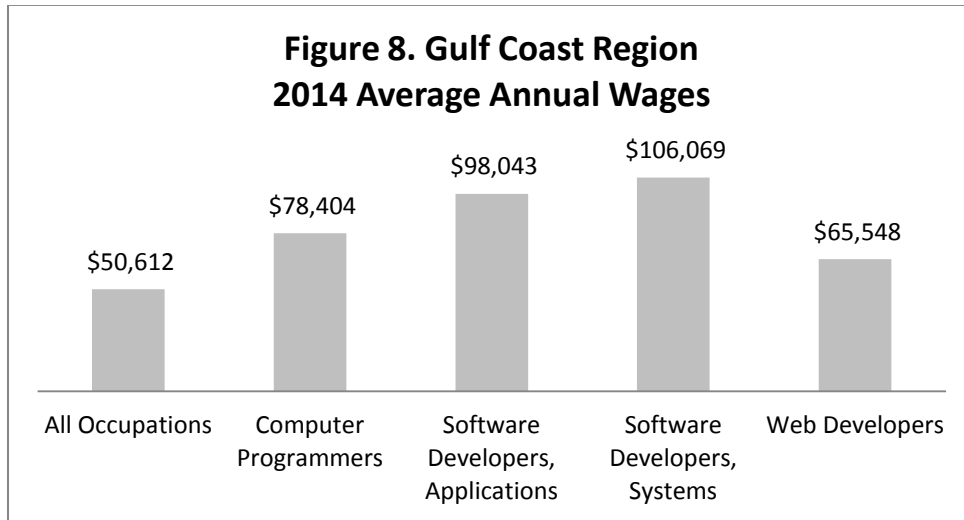
Figure 7 shows the top skills currently desired for computer programmers, software developers (applications and systems), and web developers for the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (H-W-S MSA). Data extracted from Wanted Analytics September 2, 2015.



Source: Wanted Analytics

Wages

As seen in Figure 8, computer occupations requiring coding skills pay wages well above average..



Source: Texas Workforce Commission LMCI Dept.

The Texas Consumer Resource for Education and Workforce Statistic (TXCREWS) website allows individuals to compare wages related to various degree programs with the wages earned by former graduates in those fields. Data indicates a clear relationship between the level of degree and wages. http://reports.theccb.state.tx.us/approot/theccb_tcr_ews/figure2.htm

Texas Consumers Resource for Education and Workforce Statistics Year: 2012 , Major: Computer Programming Statewide Summary for Community, Technical, and State Colleges

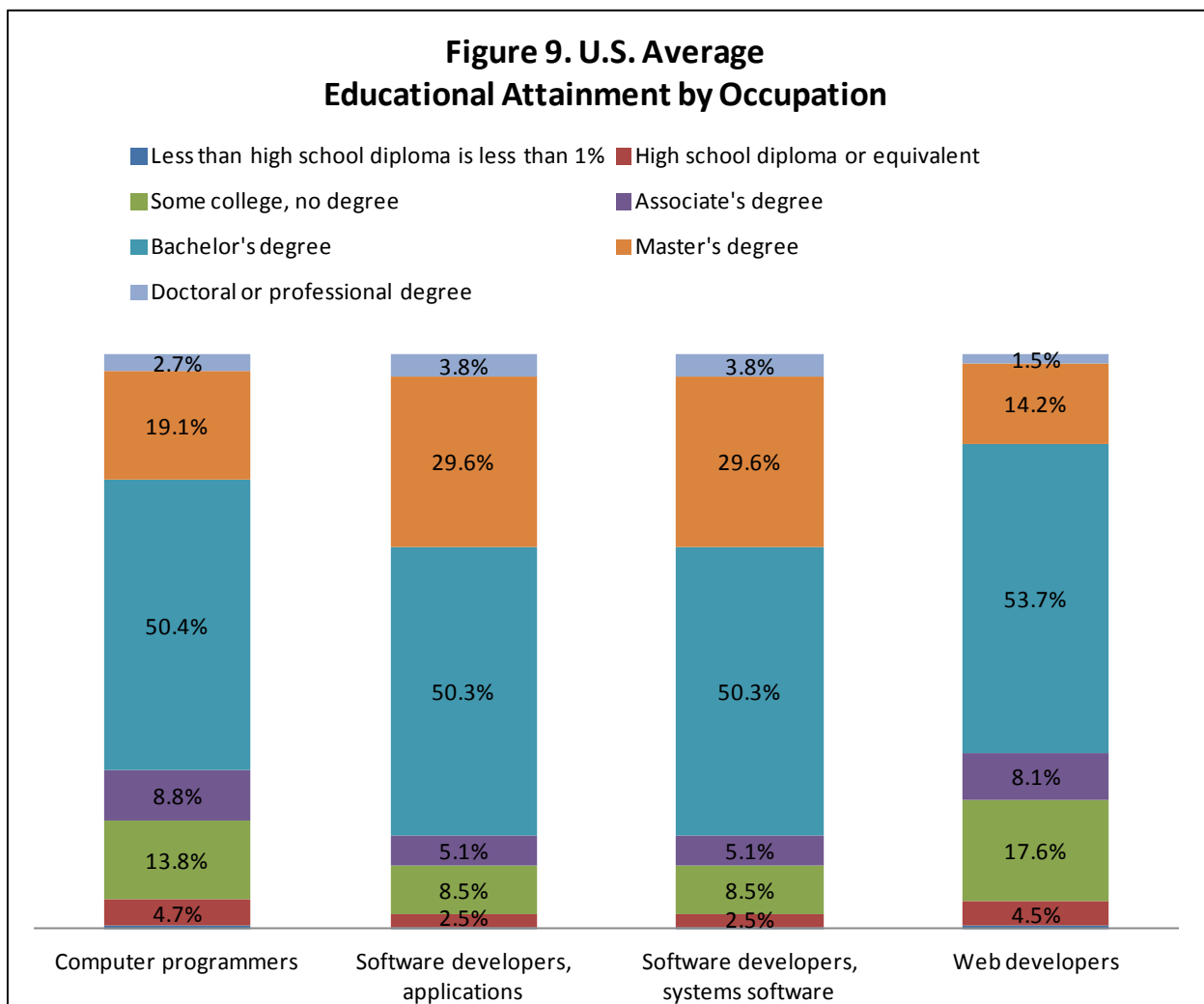
Note: The graduates may or may not work in the field of study.

Institution	# of Grads	Time to Degree (Years)	Avg Loan	Avg Year 1 Wages
Degree Level Total	304	4.32	\$15,707	\$35,056
Degree Level : Certificate	64	3.17	\$12,147	\$25,690
Degree Level: Associate	163	4.89	\$16,641	\$37,792

Education

The most common degrees of choice are computer science, mathematics, or information systems, while others take special courses in computer programming to supplement their field of expertise such as accounting, engineering, or finance for example.

Figure 9 represents average educational attainment by detailed occupations for workers 25 and over across the U.S.. Most workers in the related occupations have a bachelor's degree or higher. Computer programmers and web developers have the highest concentration of workers with an educational attainment level less than a bachelor's degree.



Educational Attainment for workers 25 years and older by detailed occupation, 2010-2011
 U.S. Average

	High school diploma or equivalent	Some college, no degree	Associate's degree	Bachelor's degree	Master's degree	Doctoral or professional degree
Computer programmers	4.7%	13.8%	8.8%	50.4%	19.1%	2.7%
Software developers, applications	2.5%	8.5%	5.1%	50.3%	29.6%	3.8%
Software developers, systems software	2.5%	8.5%	5.1%	50.3%	29.6%	3.8%
Web developers	4.5%	17.6%	8.1%	53.7%	14.2%	1.5%

Data Source: 2010 and 2011 American Community Survey Public Use Microdata, U.S. Department of Commerce, U.S. Census Bureau