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Skilled Labor Shortages May Lead to Wage Inflation

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Objective:

The purpose of this project is to examine occupations that are considered skilled labor in the city of Boise specifically those that are seeing higher than average annual wage growth. Analyzing these occupations will hopefully give us insight into the current demand within the Boise area and potential employment shortages. This information gives us more insight as to why, despite the rising wages, there is a shortage in skilled labor in the local area. Using estimated projections of occupational growth, rate of growth, and annual openings accounting for employment loss we are able to identify potential employment shortages in various occupations. We have identified the software and web development field as our main focus in our report. We have chosen this field because in the Boise area it is the occupation seeing the most demand. In addition to software and web developers, we have also observed a national growing wage among electricians, registered nurses, and civil engineers.

Sources:

- **Data USA**
<https://datausa.io/profile/cip/computer-science-6#employment>
- **U.S. Bureau of Labor Statistics**
<https://www.bls.gov/oes/current/oes151132.htm#st>
<https://data.bls.gov/oes/#/occGeo/One%20occupation%20for%20multiple%20geographical%20areas>
<https://www.bls.gov/oes/current/oes151132.htm#st>
https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables
- **Projections Central**
<http://www.projectionscentral.com/Projections/LongTerm>

Software Developer National Quick Facts:

- Average employment age 41
- Total degrees in 2017: 41,793
- Median wage \$100k (Average for Boise is 72,500)
- People in the workforce 2.06M
- Software developers in the workforce 2018 - 415,000
- Project to have 280 annual opening from 2016-2026

Fig. 1 Computer Science Occupations - National

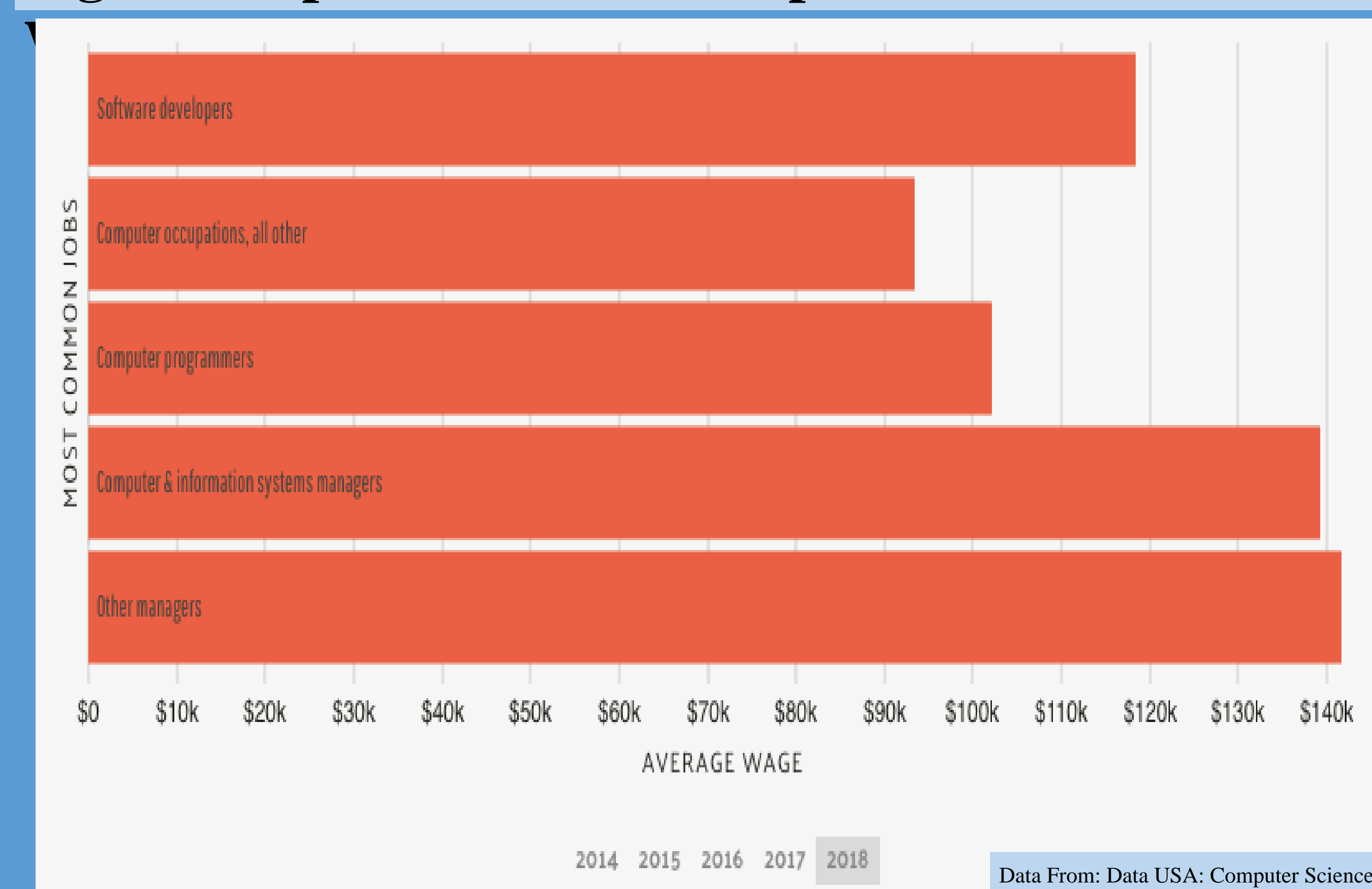


Fig. 1: A snapshot of the national average yearly income of occupations in the computer science field. We have included the figure to give an idea what this field is making around the nation.

Occupations to Watch:

- **Electricians:** Projected openings 220, The rate of positions filled 5.7%, Average annual openings 460.
- **Registered Nurses:** Projected openings 3,870, The rate of positions filled 29.4%, Average annual openings 1150.
- **Civil Engineers:** Projected openings 250, The rate of positions filled 11%, Average annual openings 200.

Reasoning:

These occupations were selected due to their high annual openings and low rate of filling positions. Electricians and Civil Engineers were projected from 2016-2026 to have job openings within the 200 range but both occupations had average annual openings that exceeded growth during the time period. The higher average annual openings would suggest that the occupation would be experiencing many people reaching retirement or leaving for an occupational change. Having high average annual openings coupled with a low rate of filling positions would indicate the occupation is dealing with a small labor pool. Register Nurses was highlighted due to the massive increase in projected openings and average annual openings but small rate of filling positions. This could indicate Idaho needs to be more competitive in attracting and retaining employment.

Methods:

Data was collected from the Bureau of Labor Statistics and Projections Central. Given projected annual job opening for occupations and the predicted number employees leaving the occupation we were able to identify certain occupations that could see wage inflation. Projected openings is calculated by taking the difference from employment in 2016 and the projected employment in 2026. Projected employment is how fast employment is expected to increase/decrease in the projection period. Annual opening is the projected openings divided by the number of years included and includes the predicted number of employees that will leave the occupation for various reasons.

Conclusion:

Our research about web and software development lead us to find that a computer science degree is required for web/software development. This particular degree has only been available since roughly 1999, as the computer software industry is fairly new. Since this is a particularly new degree and career, companies who are seeking an individual with 5-10 years of experience would have had to graduate anywhere from 2003 - 2015 at the latest. This in turn creates a fairly small labor pool when you look at a national scale. Idaho has other occupations that are projected to see decreases in the labor supply, which could result in those skilled positions seeing an increase in wages. In addition to web and software developers, electricians, registered nurses and civil engineers are also seeing wage growth. Although growth in these occupations differ and are primarily caused by retirement, change in occupation, & a small labor pool.