

Career Exploration Report

Information Technology Computer and Information Scientists

by Luke Priest, Technical Reading & Writing, DRSS

ABSTRACT

This report documents exploration of two careers and four potential internships related to those careers. Extensive research has been conducted about the two chosen careers, System Management and computing programming. Informational, and government websites were used, among them the U.S. Department of Labor's Bureau of Labor Statistic's Occupational Outlook Handbook, ONET, and DATAUSA. This research resulted in locating four internships. Wright Patt Airforce Base is the preferred internship because it combines civilian military life with IT. Next steps include contacting this potential site to set up an internship and conducting further research into industry certifications.

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CAREER EXPLORATION REPORT

STUDENT TEMPLATE

OVERVIEW

ONLY EDIT HIGHLIGHTED SECTIONS The purpose of this document is to report the research process of Luke Priest during his career exploration in Technical Reading and Writing at the Dayton Regional STEM School during the 2023-24 school year. The following sections document essential questions used to begin the career exploration process, potential career(s) and rationale(s) for choosing those career(s), an overview of the research process used during Luke Priest's career exploration, resources found and used during the process, a resolution, and a reflection of the process as well as a daily logbook of all tasks completed.

The following Driving Question was used to guide this career exploration process: How can I locate a potential internship site, college, potential career by conducting extensive independent research?

ESSENTIAL QUESTIONS

Throughout the career exploration research process, the following questions were asked:

- WHAT KINDS OF MATH COURSES ARE REQUIRED FOR THESE FIELDS?
- WHAT IS THE JOB OUTLOOK FOR THIS FIELD?
- WHAT IS THE JOB SATISFACTION FOR THIS FIELD?
- WHAT IS THE SALARY FOR THIS JOB?
- WHAT EDUCATION IS REQUIRED FOR THIS FIELD?

POTENTIAL CAREERS & RATIONALES

This section provides a comprehensive list of potential future careers as well as rationale for choosing those careers.

POTENTIAL CAREER 1

Computers have become a necessity in all our lives. For some people their phones are an extension of their brain. To sustain this technology, society needs computer scientists to maintain various computer systems. These systems can range from pagers, phones, work on computers, to servers that power the internet. This is the responsibility of computer and information systems managers. Big Future states, "Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming."

A majority of a system manager's day is working with computers, either hardware or software: these individuals typically have a very high screen time. System Managers also make decisions and create solutions to various types of problems. They are responsible for creating a safe environment for all employees, as well as developing efficient teams (ONET). The U.S Bureau of Labor Statistics lists the typical work experience in at 5 years or more in information technology.

System managers usually have some higher education. According to a survey that Big Future conducted, half of all respondents have a bachelor's degree. Though a quarter of all respondents have less than 2 years of higher education. This discrepancy is due to higher education lacking many skills that are necessary for system manager jobs. Experience in computer systems is the primary needed skill for candidates to have. Some specific skills that ONET lists: mastery of SQL, office tools, and server management software; managing workers, and customer service are also important.

As the growth of technology increases the need for more maintenance on these systems also increases. The maintenance requirements open more jobs for IT technicians, therefore increasing the number of managers needed to oversee them. College Grad predicts that over 10 years the industry will grow by 16%. This creates many high paying jobs, as the median annual wage for system managers is about \$159,010 (CollegeGrad).

One would be interested in this career if they have a profound interest in computing. They might also have a problem-solving mindset. People who have interacted with IT helpdesks might have felt incompetent, but this does not need to be the case; System Managers can foster an environment that helps the user rather than hurting them. There is a high demand for System Managers, showing that this field is secure (CollegeGrad). The fact that the career doesn't require much formal education (Big Future) and rewards the professional with a steep income is very appealing (CollegeGrad).

POSSIBLE INTERNSHIPS FOR POTENTIAL CAREER 1

CareSource - 230 N. Main St. Dayton, Ohio 45402 - 937.224.3300

CareSource provides young professionals with true work. In this career that would mean sitting at the helpdesk working with users and other IT professionals. This will show a young professional what the job is truly like. Showing what is best practice, and will begin the foundation of the knowledge of what a IT technician needs from a manager.

WPAFB – Wright Patt AirForce Base – 937.257.1110

WPAFB hosts many high school professional programs, though only a few high school internships. These internships are extremely valuable as it not only the experience of an IT technician but also experience as a civilian military role.

POTENTIAL CAREER 2

Computer programmers create the vast majority of all experiences with computers that society works with today. They create the software applications that runs on the computer hardware. Without these programmers, the content of the internet would be sparse, as well as software such as word processing. According to Big Future, these programmers specifically work under the directive of senior individuals. Programmers typically write and test their code as well as reviewing others code.

Computer programming jobs don't necessarily always have a college education or experience requirement. An example of this education requirement is stated by ONET, "arithmetic, algebra, geometry, calculus, statistics." However, most computer programmers do have a bachelor's degree according to the US Bureau of Labor Statistics. There are many skills that are not gained from formal education. Such as active listening, mastery of databases, as well as git, according to ONET.

Computer programmers make a comfortable median salary of \$99,700, according to the US Bureau of Labor Statistic. Data USA, states that the average age of a Computer Programmer is about 44 years old. This means in the coming decade many of the current programmers will retire and be replaced with younger professionals. Unfortunately, the job growth is projected to decrease by 10% (Data USA). This is due to large companies laying off many people's jobs. This isn't necessarily a bad thing; many talented programmers have moved to companies with better work environments as well as moving to be a higher paying job as a software developer.

Computer programming is quite a low movement job. Many Computer Programmers work in an office or sometimes at home according to CollegeGrad. These individuals typically sit at a desk for an 8-hour day; therefore, some require a standing desk. Computer programmers use integrated development environments to correct errors and make changes to programs that help businesses run. This can help businesses track inventory, managerial roles, as well as access control according to BigFuture.

This job does have downsides, those that are okay with an office job or staying home for work will love it. Saving on cost of commuting while having a large income. This job is also very interesting due to its problem-solving based work, almost like a puzzle. According to the US Bureau of Labor Statistics there is about 11 other jobs that you can branch off easily from a software developer job. In conjunction with the fact that different software development jobs challenge you in a different way, so these computer programmers are able to grow constantly,

and are not stuck doing the same thing. The fact that you can choose to work at google or work for the military with the same skillset is very appealing.

POSSIBLE INTERNSHIPS FOR POTENTIAL CAREER 2

CareSource - 230 N. Main St. Dayton, Ohio 45402 - 937.224.3300

CareSource provides young professionals with true work. In this career that would mean reviewing code, as well as refreshing old programs. This will show a young professional what the job is truly like. Showing what is best practice and will begin the foundation of the knowledge of what a computer programmer is.

Mile Two - 601 East 3rd St. Dayton, Ohio 45402 - 937.262.7213

RESOURCES

ONLY EDIT HIGHLIGHTED SECTIONS This section provides a list of resources found during the career exploration research process (can include resources used to explore your career fields, possible internships

- BigFuture. (2024). *Computer and information systems manager* - BigFuture | College Board. <https://bigfuture.collegeboard.org/careers/computer-and-information-systems-manager>
 - o Provided tasks of the job, and education requirement.
- BigFuture. (2024). Computer Programmers Overview - BigFuture Career Search. [Bigfuture.collegeboard.org. https://bigfuture.collegeboard.org/careers/computer-programmer](https://bigfuture.collegeboard.org/careers/computer-programmer)
 - o Provided tasks of the job.
- careeronestop. (2022). *Computer and Information Systems Managers Occupation Profile*. Careeronestop.org.
<https://www.careeronestop.org/Toolkit/Careers/Occupations/occupation-profile.aspx?keyword=Computer%20and%20Information%20Systems%20Managers&location=UNITED%20STATES&onetcode=11302100>
 - o Provided job outlook.

- CollegeGrad. (2024). *Computer and Information Systems Managers: Jobs, Career, Salary and Education Information*. Collegegrad.com. <https://collegegrad.com/careers/computer-and-information-systems-managers>
 - o Provided salary, and Job Growth.
- CollegeGrad. (2024). *Computer Programmers: Jobs, Career, Salary and Education Information*. Collegegrad.com. <https://collegegrad.com/careers/computer-programmers>
 - o Provided work environment details.
- DATAUSA. (2022). *Computer programmers*. Datausa.io. <https://datausa.io/profile/soc/computer-programmers>
 - o Provided salary, and statistics
- ONET. (2024). *Computer Programmers*. onetonline.org. <https://www.onetonline.org/link/summary/15-1251.00>
 - o Provided skills required.
- ONET. (2024). *Computer and Information Systems Managers*. onetonline.org. <https://www.onetonline.org/link/summary/11-3021.00>
 - o Provided skills required.
- U.S. BUREAU OF LABOR STATISTICS. (2024, August 29). *Computer Programmers*. Bls.gov. <https://www.bls.gov/ooh/computer-and-information-technology/computer-programmers.htm>
 - o Provided experience needed.
- U.S. Bureau of Labor Statistics. (2018, April 13). *Computer and Information Systems Managers*. Bls.gov. <https://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>
 - o Provided experience needed.

REFLECTION

ONLY EDIT HIGHLIGHTED SECTIONS This section provides the reflection and resolution to Luke Priest's career exploration.

This career exploration process forced me to investigate what do I would like to do after high school. Before I believed that I would like to go to a community college like Sinclair. Though as I continued my research, I realized that it would be far less expensive and more efficient to get certifications. I learned that I am confident to take a riskier path for my career. I was surprised to learn that computer programmers typically have degrees unlike IT professionals. The deep research, and the time spent writing this document was new to me. This type of research could be very useful in my career, a living document of research is very useful for IT professionals. I was able to locate potential internships as well as potential jobs in the industry at those sites. The next step in the process is earning my certificates and working on summer internships.

LOGBOOK

ONLY EDIT HIGHLIGHTED SECTIONS The following logbook was kept during Luke Priest's career exploration process. It details the tasks completed during this process including sources consulted, essential questions asked and answered, as well as any other information collected each day.

Date	Tasks Completed INSTRUCTION (remove when finished): make a list of all tasks completed each day during your individual research; include sources consulted, essential questions asked/answered, information collected, etc.; use bullet points to separate each item; add a new row for each new day
9/11	Reverse-outlined student sample CER.
9/13	Set up research method and located sources.
9/16	Located additional sources as well as creating essential questions.
9/17	Summarized several sections of 11-3021.00 - Computer and Information Systems Managers (onetonline.org)
9/18	Continued summarizing several other sources for IT job
9/19	Outlining career #1 (IT) exploration report
9/20	Continued outlining career #1 (IT) exploration report
9/23	Began drafting paragraph 1 and 2 for career 1
9/24	Continued drafting paragraph 2 and began drafting paragraph 3 for career 1
9/25	ABSENT
9/26	Received feedback and revised career 1
9/30	Found sources for career 2
10/1	Took notes on the sources for career 2

10/2	Started paragraph 1 & 2 for career 2
10/3	Completed paragraph 3 for career 2
10/4	Completed paragraph 4 & 5 for career 2
10/7	Received feedback for Career 2 & made revisions
10/9	Found internships for Career 1
10/10	Found internships for Career 2
10/16	Cited Sources
10/18	Created Abstract