

Assignment No. 05 – Career Planning, Certifications & Industry Readiness

Title - Design Your Career Roadmap with SMART Goals

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- COURSE NAME: COMPUTER SCIENCE FUNDAMENTALS & CAREER PATHWAYS
- COURSE CODE: ETCCCP105
- PROGRAMME: B. TECH CSE CORE (SEC 'B')

Problem Definition

In the modern job market, individuals often apply to multiple companies at the same time. Without a proper system, they tend to forget: Which companies they applied to Application Dates Current status (Pending / Interview / Rejected / Selected) Whether follow-up is needed to solve this problem, a Job Application Tracker Automation System is designed. This system helps users systematically record, update, and monitor all job applications in one place. The solution demonstrates computational thinking by breaking the problem into smaller steps, designing a clear algorithm, using decision making, and defining a logical flow of operations.

Algorithm (Pseudocode)

START

Initialize JobList as an empty list

DISPLAY "JOB APPLICATION TRACKER MENU"

DISPLAY "1. Add New Job Application"

DISPLAY "2. Update Application Status"

DISPLAY "3. View All Applications"

DISPLAY "4. Exit"

INPUT user choice

IF user choice == 1 THEN

 INPUT Company Name

 INPUT Job Role

 INPUT Applied Date

 SET Status = "Pending"

 CREATE new record = (Company Name, Job Role, Applied Date, Status)

 ADD new record to JobList

 DISPLAY "Application Added Successfully"

ELSE IF user choice == 2 THEN

 INPUT Search_Company_Name

 SEARCH JobList for matching company

 IF record found THEN

 INPUT New Status

 UPDATE the status of that record

 DISPLAY "Status Updated Successfully"

 ELSE

 DISPLAY "Company Not Found"

ENDIF

ELSE IF user choice == 3 THEN

 DISPLAY all entries in JobList

ELSE IF user choice == 4 THEN

 DISPLAY "Exiting System..."

ELSE

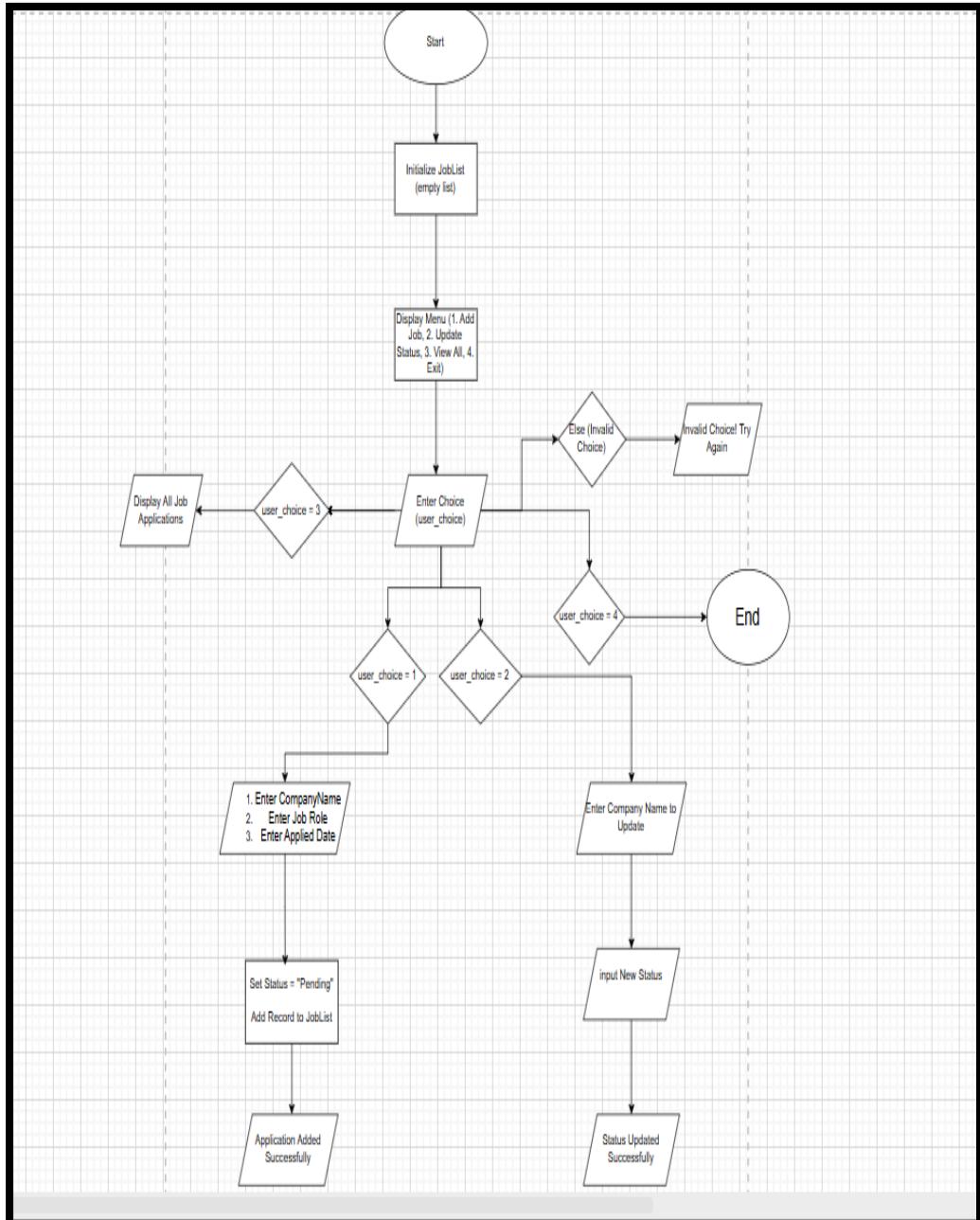
 DISPLAY "Invalid Choice, Please Try Again"

ENDIF

UNTIL user choice == 4

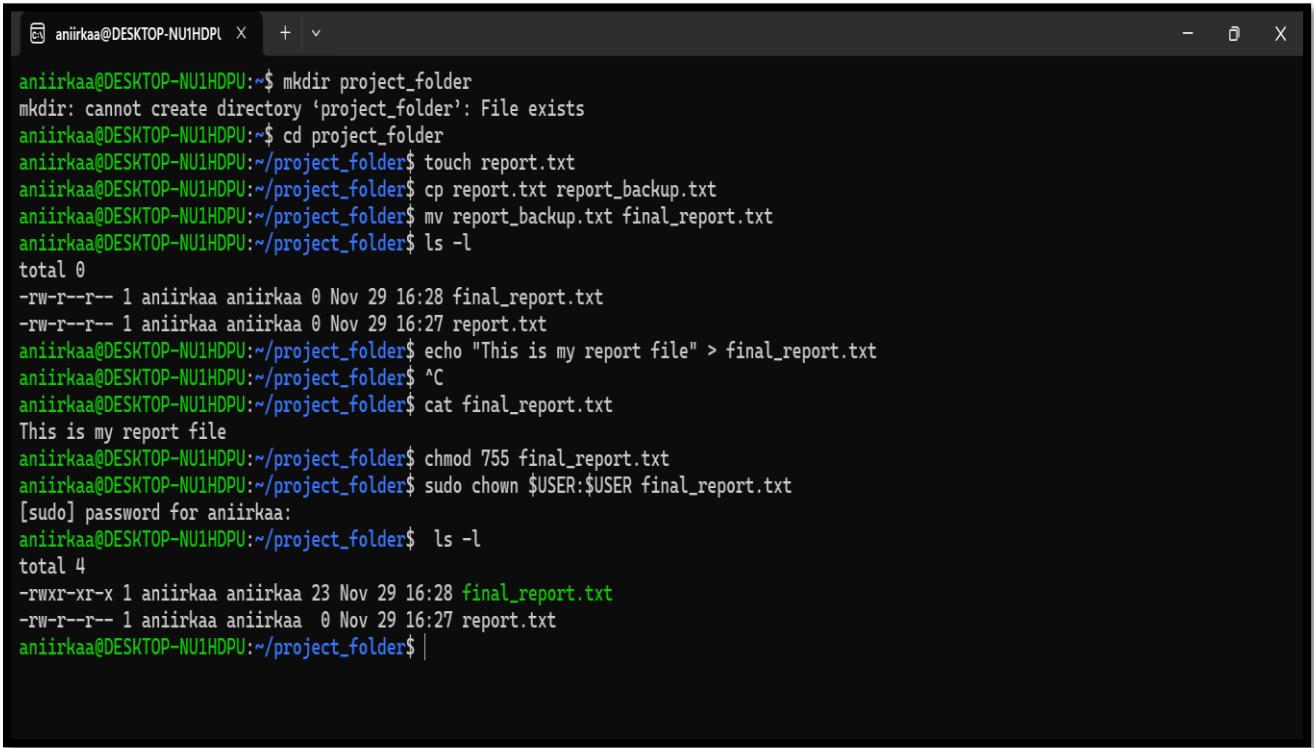
END

Flowchart



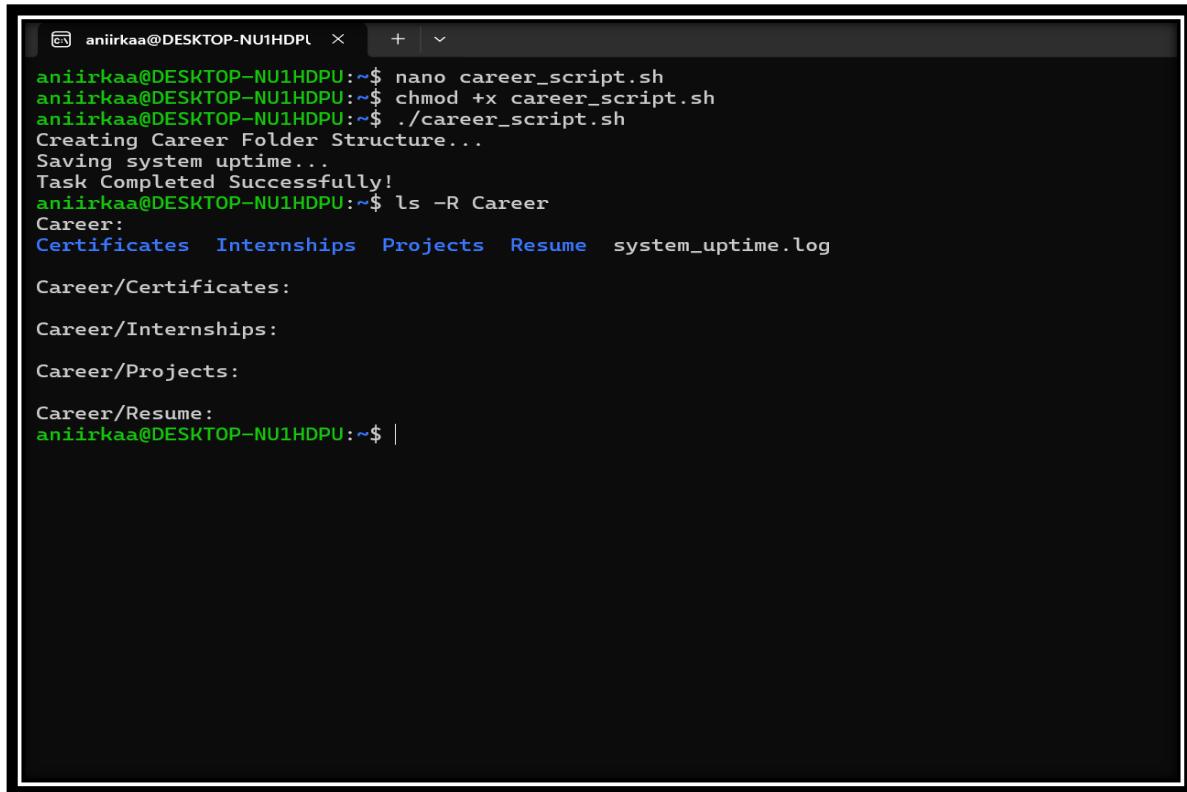
Linux and Automation

- 10 key Linux commands related to file management and permissions



```
aniirkaa@DESKTOP-NU1HDPU:~$ mkdir project_folder
mkdir: cannot create directory 'project_folder': File exists
aniirkaa@DESKTOP-NU1HDPU:~$ cd project_folder
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ touch report.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ cp report.txt report_backup.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ mv report_backup.txt final_report.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ ls -l
total 0
-rw-r--r-- 1 aniirkaa aniirkaa 0 Nov 29 16:28 final_report.txt
-rw-r--r-- 1 aniirkaa aniirkaa 0 Nov 29 16:27 report.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ echo "This is my report file" > final_report.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ ^C
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ cat final_report.txt
This is my report file
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ chmod 755 final_report.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ sudo chown $USER:$USER final_report.txt
[sudo] password for aniirkaa:
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ ls -l
total 4
-rwxr-xr-x 1 aniirkaa aniirkaa 23 Nov 29 16:28 final_report.txt
-rw-r--r-- 1 aniirkaa aniirkaa 0 Nov 29 16:27 report.txt
aniirkaa@DESKTOP-NU1HDPU:~/project_folder$ |
```

- A bash script that automates an academic or project-related task.



A screenshot of a terminal window titled "anirkaa@DESKTOP-NU1HDPU ~". The terminal displays the following command-line session:

```
anirkaa@DESKTOP-NU1HDPU:~$ nano career_script.sh
anirkaa@DESKTOP-NU1HDPU:~$ chmod +x career_script.sh
anirkaa@DESKTOP-NU1HDPU:~$ ./career_script.sh
Creating Career Folder Structure...
Saving system uptime...
Task Completed Successfully!
anirkaa@DESKTOP-NU1HDPU:~$ ls -R Career
Career:
Certificates Internships Projects Resume system_uptime.log

Career/Certificates:
Career/Internships:
Career/Projects:
Career/Resume:
anirkaa@DESKTOP-NU1HDPU:~$ |
```

CLOUD COMPUTING

Technology Overview

Cloud computing is a technology that delivers computing services—such as storage, servers, databases, networking, and software—over the internet (“the cloud”). It enables on-demand access, scalability, cost efficiency, and access from anywhere.

Job Roles & Salary Trends (India)

Popular Job Roles:
Cloud Engineer
Cloud Administrator
DevOps Engineer
Cloud Architect
AWS / Azure Engineer
Cloud Security Engineer

Salary Range (India):
Entry Level: ₹4–7 LPA
Mid Level: ₹8–18 LPA
Senior Level: ₹20–40+ LPA

Certifications in Cloud Computing

Certification 1:
AWS Certified Cloud Practitioner (CLF-C02)
Covers cloud fundamentals, billing, security & AWS services.
Certification 2:
Microsoft Azure Fundamentals (AZ-900)
Covers Azure cloud concepts, workloads, pricing & governance.
Certification 3:
Google Associate Cloud Engineer
Covers Google Cloud deployment, networking, VMs, automation.

Indian Startup Using Cloud Computing

Zoho (Chennai-based Cloud Company)
Zoho uses cloud computing to deliver CRM, finance, HR, email, analytics, and 50+ SaaS products to global customers.
They rely heavily on cloud architecture for scalability, security, and cross-platform access.

SMART GOALS

Short-Term SMART Goal (0–6 Months)

Goal: Complete the AWS Cloud Practitioner Certificate and build one basic cloud project.

- **Specific:** Enroll in an AWS Cloud Practitioner Foundational course and complete at least 30 hours of study.
- **Measurable:** Score 80%+ in 5 practice tests and deploy one simple project using AWS Free Tier.
- **Achievable:** 1–1.5 hours of daily study, weekend labs, and official AWS learning resources.
- **Relevant:** Builds cloud fundamentals needed for future certifications and internships.
- **Time-Bound:** Finish within the next 6 months.

Medium-Term SMART Goal (6–18 Months)

Goal: Earn the Google Associate Cloud Engineer certification and complete 3 intermediate cloud projects.

- **Specific:** Build three cloud-based apps (CI/CD deployment, containerized app, monitoring/backup automation).
- **Measurable:** 3 GitHub repositories, completed Google ACE certificate, and apply for at least 20 internships.
- **Achievable:** Use Google Cloud skill badges, labs, and hands-on tutorials.
- **Relevant:** Strengthens core deployment & cloud engineering skills for real-world roles.
- **Time-Bound:** Complete within 18 months.

Long-Term SMART Goal (2–4 Years)

Goal: Become a Cloud Engineer with an internship + one advanced cloud certification.

- **Specific:** Secure a cloud internship, gain 12 months of experience, and complete an associate/professional-level certification in AWS/Azure/GCP.
- **Measurable:** Internship experience letter, 1 advanced certification, and 5+ production-level projects.
- **Achievable:** By consistent learning, internships, hackathons, and project building.
- **Relevant:** Directly supports long-term career growth in cloud engineering.
- **Time-Bound:** Achieve within 4 years.

Certification Research

AWS Certified Cloud Practitioner (CLF-C02)

- **Provider:** Amazon Web Services (AWS)
- **Duration:** 90-minute exam
- **Cost:** Around \$100 USD (regional tax may apply)
- **Skills Covered:**
 - Cloud concepts & architecture
 - AWS global infrastructure
 - Compute, storage, networking basics
 - Security, IAM, monitoring
 - Billing & cost optimization

- **Relevance to SMART Goals:**

This aligns directly with my short-term SMART goal. It helps me build a strong cloud foundation, learn core AWS services, and prepare for higher-level certifications. It also makes my resume stronger when applying for internships.

Google Associate Cloud Engineer (ACE)

- **Provider:** Google Cloud
- **Duration:** ~120 minutes
- **Cost:** Around \$125 USD
- **Skills Covered:**
 - Cloud deployment & environment setup
 - Virtual machines, Kubernetes basics
 - Cloud storage, VPC networking
 - IAM, monitoring, logging
 - CI/CD pipelines & automation

- **Relevance to SMART Goals:**

This matches my medium-term goal. It forces me to work hands-on with cloud deployments and automation. It's an industry-recognized certification and boosts my internship chances in cloud, DevOps, and SRE.

LinkedIn Update

Profile URL - www.linkedin.com/in/anushka-chhoker-1602b5387

The screenshot shows the LinkedIn profile page for Anushka Chhoker. At the top, there's a navigation bar with icons for Home, My Network, Jobs, Messaging, Notifications (with 14 notifications), Me, For Business, and Try Premium for ₹0. Below the navigation bar is a large profile picture of Anushka. Her name, "Anushka Chhoker", is displayed with a blue "Add verification badge" button. Below her name, it says "Student at K.R Manglam University" and "Alwar, Rajasthan, India · Contact info". There are three buttons: "Open to", "Add profile section", and "Resources". To the right of her profile, there's a section for "Public profile & URL" with the URL "www.linkedin.com/in/anushka-chhoker-1602b5387". Below this is a promotional card for "State Bank of India" with a "Follow" button. Further down, there's a "Suggested for you" section with a question "Which industry do you work in?" and an "Explore Premium profiles" section featuring Rajveer Singh Rathore.

This screenshot shows the same LinkedIn profile page for Anushka Chhoker, but with different sections visible. In the top navigation bar, the "Resources" button is highlighted. Below the profile picture, the "Education" section is shown, listing "K.R Manglam University" as her alma mater, with a degree in "Bachelor of Technology - BTech, Computer Science" from 2025 - 2029. It also lists "Cloud Computing, Python, Linux, Git & Github" as her skills. To the right, there are "Connect" buttons for users Palak Gupta and Jaiveer Y. At the bottom right, there's a banner for "See who's hiring on LinkedIn".

Hackathon proof



Career Roadmap

My long-term goal is to build a successful career as a Cloud Engineer, and this roadmap outlines the step-by-step journey I will follow during my B.Tech program. The plan includes building foundational skills, earning cloud certifications, completing hands-on projects, participating in hackathons, and preparing for placements.

Year 1: Foundation Building

The first year of my B.Tech will focus on strengthening the basics. I will master computer fundamentals such as operating systems, networking basics, and programming languages like Python and C. I will also learn Linux commands and version control using Git and GitHub. During this year, I will begin my cloud journey by learning AWS fundamentals and preparing for the AWS Cloud Practitioner certification. I will also deploy my first project—a simple static website hosted on AWS S3—to gain confidence in cloud platforms.

Year 2: Technical Skill Development

In the second year, I will focus on improving hands-on technical skills. I will learn Docker, CI/CD pipelines, and automation tools. I will simultaneously prepare for the Google Associate Cloud Engineer certification, which requires deeper understanding of cloud deployment, virtual machines, networking, and IAM. I aim to complete 3 cloud-based projects: (1) A task planner with automated reminders, (2) A containerized application deployed using CI/CD, and (3) A monitoring system with cloud storage. These projects will be uploaded on GitHub with documentation to build my online portfolio. This will also be the year when I start applying for internships.

Year 3: Internship and Real-World Exposure

The third year will focus on gaining industry experience. I will apply for cloud and DevOps internships where I can work with real infrastructure and learn best practices. During my internship, I aim to understand cloud security, monitoring, cost optimization, and deployment pipelines. I will also participate in at least one major hackathon such as SIH or Devfolio-based events. Working with teams under deadlines will teach me collaboration and real-time problem solving.

Year 4: Specialization and Placement Preparation

In the final year, I will choose a specialization such as cloud security, cloud automation, or cloud architecture. I will prepare for coding interviews, revise DSA basics, and work on system design fundamentals. I will build at least one major final-year project based on cloud technologies and document all my work on LinkedIn and GitHub. I will also complete one advanced cloud certification depending on the job role I want to target. By the end of this year, I aim to secure a full-time Cloud Engineer or DevOps Engineer role.

Overall, this roadmap ensures continuous growth by focusing equally on learning, practicing, and applying cloud skills through projects and internships.

Reflection

Completing this assignment was a meaningful learning experience and helped me understand different aspects of career preparation in a structured way. One of the major challenges I faced was managing the multiple components of the assignment—such as designing the algorithm, creating the flowchart, practicing Linux commands, preparing the infographic, and writing the career roadmap. Coordinating all these tasks required proper planning and time management, which I initially struggled with but gradually improved as I progressed. Another challenge was researching accurate certification details and identifying the right career goals that aligned with my interests in cloud computing.

Through this assignment, I have improved several important skills. I learned how to use computational thinking to design algorithms, how to work with basic Linux commands, and how automation scripts are created. I also improved my research skills while exploring emerging technology domains and industry-related certifications. Updating my LinkedIn profile and creating my CV helped me strengthen my professional digital presence.

Overall, this assignment has given me a clearer understanding of my academic and career path. I now have defined SMART goals and a structured roadmap for becoming career-ready. The knowledge gained here will guide my future decisions, help me stay consistent with skill-building, and prepare me more confidently for internships and industry opportunities.

GitHub link:

<https://github.com/Anushka-Btech/CSFCP-Assignment-05.git>