



Cairo University

Faculty of Computers and Artificial Intelligence

CS213: Object Oriented Programming

Assignment (1)

Task (3)

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National Telecommunication Institute (NTI)

The National Telecommunication Institute (**NTI**), established in 1983, excels in Egypt's education, research, and technical consultation. Aligned with the Ministry of Telecommunication and Information Technology (**MCIT**), NTI recognizes ICT's crucial role in the Egyptian societal advancement. It plays a key role in Egypt's Vision 2030 for digital transformation, supported by the government and industry collaboration. NTI prioritizes high-quality education, training, and innovative research, offering consultancy and technical services.

1. Who offers it and where is it located?

The National Telecommunication Institute (**NTI**), NTI is located at 12 El-Hegaz Street, Roxy, Heliopolis, Cairo, Egypt.

2. What does it offer?

NTI offers a variety of programs, courses, and services aimed at training and developing skills in the telecommunications and information technology sectors. Some of them: Train to Hire, Upskilling Programs, International Academies, Creativa Innovation Hubs, Wazeefa-Tech, Post Graduate Diploma, Research & Development, NTI Scientific Labs.

3. When is it open and how long it is online or offline and the conditions for application?

The Ministry of Communications and Information Technology (**MCIT**), in collaboration with the National Telecommunications Institute (**NTI**) and the Information Technology Industry Development Agency (**ITIDA**), offers a Summer Training initiative for first, second, and third-year university students from engineering, computers, information, and AI faculties.

This 4-week program provides 120 training hours, including 30 hours of soft skills and 90 hours of technical training in fields like Networks, AI, Cloud Computing, Data Analysis, and IoT. The initiative is a free scholarship for outstanding students, preparing them for international certifications and enhancing their technical and professional capabilities.

The summer training program is 120 hours in two parts:

- I. Soft skills / Freelance skills part 30 hours.
- II. Technical part 90 hours.

NTI has 13 technical fields each one will have 90 hours in 3 weeks and some of them have an exam and you pay for it as follows:

- **Big Data Analysis.**

- I. **Personal skills:** Freelancing Skills.
- II. **Prerequisites:** Basic knowledge of programming fundamentals and computer architecture.
- III. **Exam Cost:** 200\$.

- **Red Hat System Administrations.**

- I. **Personal Skills:** Soft Skills.
- II. **Prerequisites:** network fundamentals knowledge and operating systems basics.
- III. **Exam Cost:** 400\$.

- **Web Designer.**

- I. **Personal Skills:** Freelancing Skills.
- II. **Prerequisites:** General background in using computers, managing files, Basic knowledge of programming & internet.
- III. **Exam Cost:** no exam.

- **MEAN-Stack Web Development.**
 - I. **Personal Skills:** Freelancing Skills.
 - II. **Prerequisites:** HTML, CSS, Mid-level proficiency in JS (Familiarity with DOM manipulation and event handling in JS).
 - III. **Exam Cost:** no exam.

- **Data Analysis: Skills for Freelance Professional.**
 - I. **Personal Skills:** Freelancing Skills.
 - II. **Prerequisites:** Fundamental mathematics and statistics, introductory programming knowledge, proficiency in excel, logical and analytical thinking.
 - III. **Exam Cost:** no exam.

- **5G.**
 - I. **Personal Skills:** Soft Skills.
 - II. **Prerequisites:** Basic knowledge of Mobile networks and industry applications.
 - III. **Exam Cost:** 200\$.

- **Digital Design using FPGA.**
 - I. **Personal Skills:** Freelancing Skills.
 - II. **Prerequisites:** Basic knowledge of programming languages.
 - III. **Exam Cost:** no exam.

- **Artificial Intelligence (AI).**
 - I. **Personal Skills:** Freelancing Skills.
 - II. **Prerequisites:** Basic knowledge of programming languages.
 - IV. **Exam Cost:** 200\$.

- **Cyber Ops Associate.**
 - I. **Personal Skills:** Soft Skills.
 - II. **Prerequisites:** Basic Computer Literacy, Basic PC operating systems navigation skills and Basic internet usage skills.
 - III. **Exam Cost:** 300\$.

- **Internet Of Things (IOT) Applications.**
 - I. **Personal Skills:** Soft Skills.
 - II. **Prerequisites:** Basic knowledge of programming & electronic fundamentals.
 - III. **Exam Cost:** no exam.

- **AWS Cloud.**
 - I. **Personal Skills:** Soft Skills.
 - II. **Prerequisites:** Basic computer knowledge, General IT Technical knowledge, and General OT business knowledge.
 - III. **Exam Cost:** 100\$.

- **Cisco CCNA.**
 - I. **Personal Skills:** Soft Skills.
 - II. **Prerequisites:** Basic Computer Literacy, Basic PC operating systems navigation skills and Basic internet usage skills.
 - III. **Exam Cost:** 300\$.

- **Graphic Design.**
 - I. **Personal Skills:** Freelancing Skills.
 - II. **Prerequisites:** Basic Computer Literacy.
 - IV. **Exam Cost:** no exam.

4. The different learning track.

NTI has many tracks like: Networks, Security and Virtualization, Embedded Systems, AI and IoT, Cloud Computing, Information Technology, Fiber Optics, Wireless and Mobile Communication Networks, Career Development.

Information Technology Institute (ITI)

Founded in 1993, the Information Technology Institute (ITI) joined MCIT as an affiliate in 2005. The development of ICT mortal capacity is its primary focus. ITI has been simplifying its training portfolio for more than 30 years by continuously observing emerging global tech trends and the nation's mega and public systems. It maintained an employment chance of 85 for its grades as a result.

Numerous young Egyptians from diverse governorates and academic backgrounds have benefited from the ITI programs, which have helped them apply their academic knowledge to improve their future employment prospects. Apart from development, additional courses cover media and vitality, media design, game development, security, data analytics, and more.

1. Who offers it and where is it located?

The **ITI** is the entity that provides specialized training and courses in information technology and related areas. It is a renowned establishment that is connected to the Egyptian Ministry of Communications and Information Technology.

2. What does it offer?

The **ITI** provides a range of programs and initiatives focused on developing advanced technical skills, improving job opportunities, and promoting innovation in the IT industry. Listed below are the main services provided:

I. 9-Month Professional Diploma:

- I.1. **Target Audience:** Graduates of IT-related fields.
- I.2. **Program Focus:** Intensive, industry-relevant training that covers specializations in areas such as:
 - I.2.1. Software Development.
 - I.2.2. Cybersecurity.
 - I.2.3. Artificial intelligence (AI) and Machine Learning (ML).
 - I.2.4. Data Science and Analytics.

- I.2.5. Game Development.
- I.2.6. Cloud computing.
- I.2.7. Mobile Application Development.
- I.2.8. Internet of Things (IoT).
- I.2.9. Network and Infrastructure.
- I.2.10. Embedded System.

II. Summer Training (Student Training Program):

- II.1. **Target Audience:** Undergraduate students in IT and engineering-related fields.
- II.2. **Program Focus:** Brief summer internships and hands-on technical workshops across a range of topics, providing students with early practical experience.

III. Scholarship Programs:

- III.1. ITI frequently provides scholarships in conjunction with well-known international IT organizations such as IBM, Microsoft, and Oracle for additional training in state-of-the-art technologies and subsequent certification.

IV. Hackathons and Competitions:

- IV.1. ITI organizes hackathons, coding contests, and innovation contests to challenge and encourage students and working professionals to find out-of-box solutions to real-life problems.

V. International Certifications:

- V.1. ITI collaborates with leading multinational tech firms to provide international certifications across different fields, improving job prospects on a local and global scale.

3. When it opens and how long it is and online or offline?

The Information Technology Institute (ITI) Egypt offers multiple programs with varying schedules and delivery modes (online/offline). Here are the details for some of its major programs:

I. 9-Month Professional Diploma:

- I.1. **Application Period:** Typically, applications open once a year, around June to July, with the program starting in September.
- I.2. **Duration:** 9 months
- I.3. **Mode of Delivery:** Traditionally, this program has been offline (in-person) at ITI's campuses, but due to COVID-19 and changing trends, they have integrated online components or adopted a hybrid model combining both online and offline learning.
- I.4. **Format:** Full-time, intensive training program with hands-on projects and collaborative sessions.

II. Summer Training Program (Student Training Program):

- II.1. **Application Period:** Registrations generally open around April-May, and the program takes place during the summer months (July-August).
- II.2. **Duration:** Typically, 1-2 months, depending on the specific track.
- II.3. **Mode of Delivery:** Online, offline, or hybrid, depending on the course and branch offering it.

III. Scholarship Programs:

- III.1. **Application Period:** Varies according to the specific scholarship.
- III.2. **Duration:** Depends on the course covered under the scholarship (can range from weeks to months).
- III.3. **Mode of Delivery:** Can be online, offline, or hybrid based on the sponsoring organization.

IV. Hackathons and Competitions:

- IV.1. **Application Period:** Varies, often announced several weeks or months in advance.
- IV.2. **Duration:** Short-term events, typically lasting a few days a week.
- IV.3. **Mode of Delivery:** Mostly offline, but some events may have online components or be fully virtual.

For specific start dates, you can check ITI's website or follow their social media channels for announcements on program openings and application deadlines.

4. The conditions for application and acceptance and the fees and conditions if any

I. 9-Month Professional Diploma:

I.1. Conditions for acceptance:

- I.1.1. **Nationality:** Must be an Egyptian national.
- I.1.2. **Education:** Applicants should have a university degree (bachelor's or equivalent) in IT-related fields like engineering, computer science, information systems, or communications. Some fields like science or business may also be eligible depending on specialization.
- I.1.3. **Military Service:** For male applicants, they must have completed, exempted, or deferred their military service.
- I.1.4. **Assessment:** Applicants must pass several assessment tests in topics like programming, English, problem-solving, and logic, and complete an interview process.

I.2. Acceptance Process:

- I.2.1. **Online Application:** Submit the application via the ITI portal.
- I.2.2. **Assessment Tests:** If shortlisted, candidates will undergo a series of written and online tests.
- I.2.3. **Interviews:** Shortlisted candidates will be invited for personal interviews to assess their technical knowledge and fit for the program.
- I.2.4. **Final Selection:** Candidates are selected based on their performance in tests and interviews.

I.3. **Fees:**

- I.3.1. **Tuition Fee:** The 9-Month Professional Diploma is free of charge. ITI covers all training costs for accepted students, as it is funded by the Egyptian government. However, students need to commit full-time to the program.

II. Summer Training Program (for undergraduate students):

II.1. **Conditions for Application:**

- II.1.1. **Nationality:** Open to Egyptian university students.
- II.1.2. **Academic Background:** Applicants must be undergraduate students in IT-related fields, such as computer science, engineering, information systems, or electronics.
- II.1.3. **Age and Grade Level:** Typically, students in their 2nd, 3rd, or 4th year are eligible.

II.2. **Acceptance Process:**

- II.2.1. **Online Application:** Apply through the ITI platform during the registration period.
- II.2.2. **Selection Criteria:** Selection is based on academic performance and sometimes a test/interview to assess technical skills.

II.3. **Fees:**

- II.3.1. **Free:** The Summer Training Program is generally free of charge, like the 9-Month program, as it is government-supported.

III. International Certifications and Specialized Programs:

III.1. **Conditions for Application:**

- III.1.1. It depends on the course. In most cases, candidates need to have a suitable background or previous work experience in study (such as software development, data science).

III.2. Fees:

III.2.1. Costs may be incurred for international certification programs, but ITI frequently collaborates with companies such as IBM, Microsoft, and Oracle to offer them at reduced prices or through scholarship opportunities.

5. The different learning tracks.

The Information Technology Institute (ITI) provides a range of training programs tailored to different IT fields and new technologies.

Every track is custom-made to fulfill market needs and provide students with specific abilities.

Below is a summary of the various educational paths available, specifically within the 9-Month Professional Diploma program and other ITI projects:

- I. Software Development Track.
- II. Artificial Intelligence (AI) and Machine Learning (ML) Track.
- III. Data Science and Analytics Track.
- IV. Cybersecurity Track.
- V. Cloud and DevOps Track.
- VI. Internet of Things (IoT) Track.
- VII. Game Development and Digital Media Track.
- VIII. Embedded Systems Track.
- IX. Mobile Applications Development Track.
- X. Network and Infrastructure Track.

6. Select a track that you like and will write why you want this one.

In today's technology-driven world, software development is crucial, combining creativity with problem-solving and providing various career prospects. I am eager to follow the Software Development path to acquire important skills and develop impactful solutions. Below are the main factors behind my decision:

I. Passion for Problem-Solving:

- a. I enjoy taking on challenges and solving them with programming. In software development, I can use my logical thinking in a creative way.

II. High Demand in the Job Market:

- a. Career opportunities are abundant due to high demand for skilled software developers across various industries.

III. Creative Freedom:

- a. I can turn my ideas into reality through creating a website, app, or game, fostering innovation and creativity.

IV. Collaborative Work Environment:

- a. I take pleasure in team collaboration with designers and fellow developers, improving my skills through shared experiences.

V. Flexibility in the Work Environment:

- a. Having the choice to work from home or in different locations contributes to an improved work-life balance in my profession.

VI. Building Scalable Systems:

- a. I aim to develop apps that are efficient, secure, and scalable to meet user demand.

Google STEP Internship Program

1. Who offers it and where is it located?

Google STEP (Student Training in Engineering Program) is offered by Google, a global technology company. The internship is available in various Google offices around the world, including locations in the United States (Mountain View, New York, Seattle), Europe (London, Zurich, Dublin), and Asia-Pacific (Japan, Singapore, Australia). The specific locations may vary each year.

2. What does it offer?

Google STEP offers several benefits:

- I. Hands-on software engineering experience working on real-world projects.
- II. Mentorship from experienced Google engineers.
- III. Skill development through coding and debugging in languages like Python, C++, and Java.
- IV. Team collaboration and exposure to large-scale infrastructure.
- V. Workshops and technical talks on cutting-edge topics.
- VI. Networking opportunities with Googlers and other interns.
- VII. Diversity and inclusion support.
- VIII. Competitive compensation and possible perks such as free meals and transportation.

3. When it opens and how long it is and online or offline

The Google STEP program is typically open during the summer for a duration of 12 weeks. While the internship is primarily in-person at Google offices, there may be hybrid or remote options available, depending on the year and location.

4. The conditions for application and acceptance and the fees and conditions if any.

Eligibility requirements for the Google STEP internship include:

- I. First- or second-year undergraduate students pursuing degrees in computer science or related fields.

- II. Interest in software engineering and coding experience.
- III. Priority is given to students from underrepresented groups in tech.
- IV. There are no application fees, and interns are paid competitive salaries during the program.

5. The different learning tracks.

While STEP focuses broadly on software engineering, there are different types of projects that interns can work on, such as:

- I. Web development.
- II. Mobile app development.
- III. Backend systems and databases.
- IV. Machine learning and artificial intelligence.
- V. Tools and infrastructure.

6. Select a track that you like and will write why you want this one.

I would choose the Machine Learning and Artificial Intelligence track. I have a strong interest in AI, and I have been building my skills in Python and C++. Working on AI projects would allow me to deepen my understanding of machine learning algorithms, and I would love the opportunity to apply my knowledge to real-world challenges at Google. It also aligns with my long-term goal of contributing to impactful AI-driven technologies.