

## Diploma Project Academic Year 2023 / 2024

**Project code:** 202306

**Project Title (English):**  
Network Automation in Software Defined Networks (SDN)

**Project Title (Arabic):**

استخدام التشغيل الالى للشبكات في الشبكات المعرفة بالبرمجيات

**Project Advisor:**

Name: Associate Prof. Asmaa Mahmoud Saafan  
email: asmaa.safan@nti.sci.eg

**Project Objectives:**

1. The open ecosystem of the computing industry brings booming development of multiple fields, such as Commercial Off-the-Shelf (COTS), operating systems, virtualization, middleware, cloud computing, and software applications. The network industry is also seeking transformation and development. Software Defined Networking (SDN) and Network Functions Virtualization (NFV) are mainly used.
2. This project aims to help engineers understand the development of SDN and NFV.
3. Network openness and programmability are prerequisites of intent-driven networks.
4. Network automation means that tools are used to implement automatic network deployment, operation, and maintenance, gradually reducing the dependency on human resources.

**Project Outcomes:**

After completing this project, the studies will be familiar with:  
The control plane for all network components is unified, it's easier to automate tasks across the entire data center network using a single automation script. This is impossible to achieve using decentralized, legacy network hardware and software. Also this will transform business networks, enhancing agility, scalability, and fostering innovation.