"YOUR CHALLENGE, OUR PASSION..."

PFE BOOK 2025

TELNET

stages@groupe-telnet.net

TELNET Holding

Genius of Technology

France, Germany, Russia, USA, KSA, Tunisia

www.groupe-telnet.com

ABOUT US

With almost 30 years and more than 600 talents, we were able to master many fields; namely Embedded Software, Internet Of Things, Artificial Intelligence, Enterprise Applications, Cloud Computing and Electronics & Mechanical Design. We operate in various business sectors such as: Telecom & Media, E-payment, Industry, Network Operators & Enterprises and Aerospace.

Thanks to the success of the Challenge One satellite ‘s mission, we took the first step towards the world of Aerospace and we plan to add other innovative projects to the challenge.

TELNET Holding
Genius of Technology

TOPICS' THEMATICS

- TELECOM
- E-PAYMENT SYSTEMS
- INFORMATION SYSTEMS
- Mechatronics
- ELECTRONICS
- QUALITY
- MEDIA& ENERGY
- SPACE

TELECOM

E-PAYMENT SYSTEMS

INFORMATION SYSTEMS

MECHATRONICS

ELECTRONICS

QUALITY

MEDIA & ENERGIE

SPACE


TELECOM

TELECOM-01. Implementation of an AI Solution for Test Automation and Bug Tracking

FIELD:
Telecom

DESCRIPTION:

Project Objective: Develop an AI-powered platform that integrates CI/CD tools (Jenkins, GitLab) with test management (Jira Xray) to automate test execution, analyze results, and intelligently create or link bugs.

- Integrate Jenkins with GitLab and Jira Xray to automate the execution of functional and regression tests, improving efficiency in the CI/CD pipeline.
- Utilize Jira Xray to automatically track and report test results, linking them directly to relevant test cases and requirements for better traceability.
- Implement AI algorithms to analyze test failures, identify patterns, and intelligently predict the root causes of issues.
- Use AI insights to automatically create or link bugs in Jira, reducing manual efforts in bug tracking and accelerating the resolution process.

REQUIRED THEORETICAL KNOWLEDGE:

- Network
- Programming

REQUIRED PRACTICAL SKILLS:

- **Test Automation:** Selenium, ROBOT framework, Python,
- **CI/CD:** Jenkins, GitLab
- **Test Management:** Jira Xray
- **AI/ML Frameworks:** TensorFlow or Scikit-Learn (for pattern detection and bug prediction)

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

TELECOM-02. Implementation of a Wi-Fi Performance Testing Platform

FIELD:
Telecom

DESCRIPTION:
The goal is to provide an intuitive platform for configuring tests, executing scenarios, and generating detailed reports on application performance indicators.

- Create a simple and intuitive graphical interface that allows users to easily configure and manage performance tests without the need for command-line interaction.
- Integrate with the underlying performance testing engine to execute tests specifically designed to evaluate Wi-Fi KPIs. Resultsshouldberetrieveddirectlywithin the graphical interface.
- Provide real-time graphs and indicators on throughput, response times, and system resource usage, taking into account the specifics of WLAN environments.
- Generate comprehensive post-test reports featuring visual data analysis and actionable insights, with the ability to export in multiple formats (PDF, HTML).

REQUIRED THEORETICAL KNOWLEDGE:

- Network
- RESTful APIs
- Programming

REQUIRED PRACTICAL SKILLS:

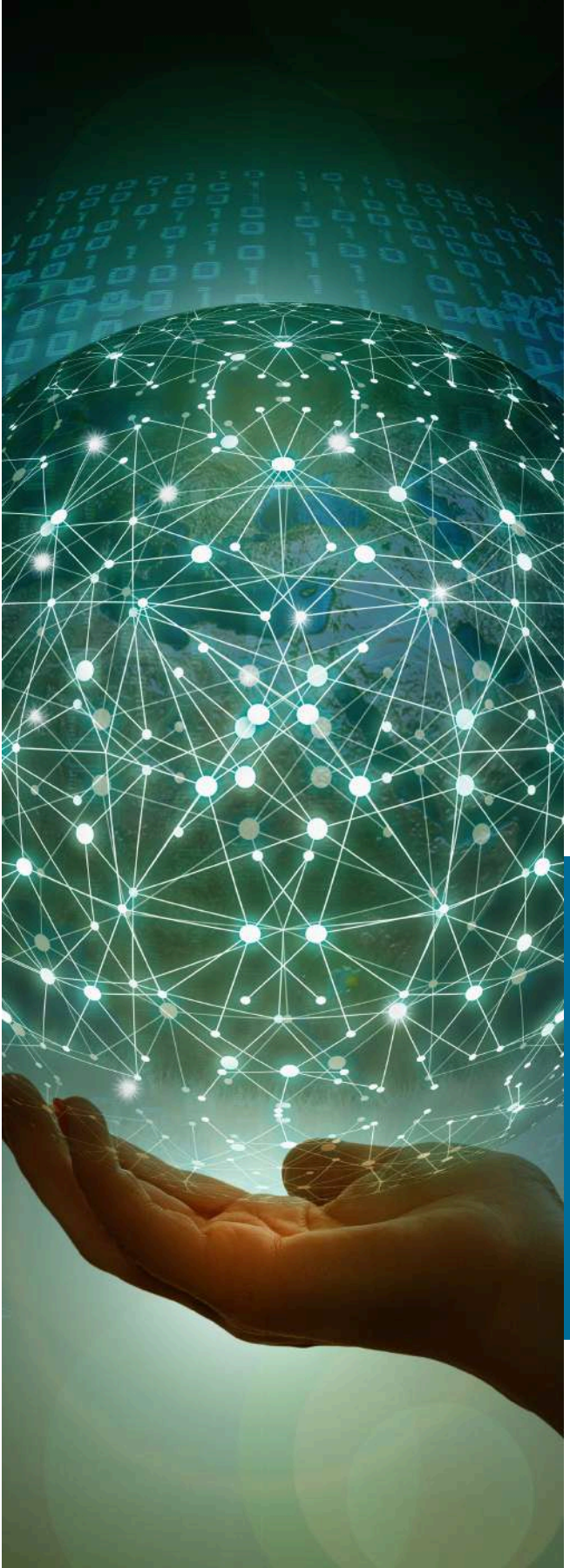
- Linux
- Gitlab, docker
- Python, Java, JavaScript
- Apache JMeter, Locust
- React, PyQT, Tkinter
- Grafana, Tableau
- ReportLab, Pandas
- InfluxDB or Elasticsearch for storing test results

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer



TELECOM-03. Optimisation Réseau et Orchestration des Containers avec Kubernetes, macvlan et Service Mesh

FIELD:
Telecom

DESCRIPTION:
Votre PFE vise à implémenter une infrastructure d'orchestration des containers Docker gérée par Kubernetes sur des instances Proxmox. Le projet inclut également la migration de Pipework vers macvlan pour optimiser les performances réseau, ainsi que l'intégration d'un Service Mesh (ex : Linkerd / Istio) pour améliorer la gestion et la sécurité des communications inter-services.

REQUIRED THEORETICAL KNOWLEDGE:

- oncepts de réseaux TCP/IP et gestion des communications entre containers.
- Bases en Docker et virtualisation.
- Concepts de Kuberneteset de l'orchestration de containers.
- Fonctionnement d'un Service Mesh(ex : Linkerd / Istio).
- Connaissances en sécurité des réseaux et proxy

REQUIRED PRACTICAL SKILLS:

- oncepts de réseaux TCP/IP et gestion des communications entre containers.
- Bases en Docker et virtualisation.
- Concepts de Kuberneteset de l'orchestration de containers.
- Fonctionnement d'un Service Mesh(ex : Linkerd / Istio).
- Connaissances en sécurité des réseaux et proxy

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer /
DevOps / Réseaux

TELECOM-04. Integration of Kubernetes for Monitoring

FIELD:
Telecom

DESCRIPTION:
This project involves integrating Kubernetes with monitoring tools for orchestrating containers, automating crontab jobs, and optimizing network monitoring based on namespaces and labels. The project also focuses on implementing Linkerd for network traffic monitoring and enhancing a personalized Grafana dashboard.

REQUIRED THEORETICAL KNOWLEDGE:

- Kubernetes container orchestration
- Grafana for performance monitoring
- Linkerd for service mesh and traffic monitoring

REQUIRED PRACTICAL SKILLS:

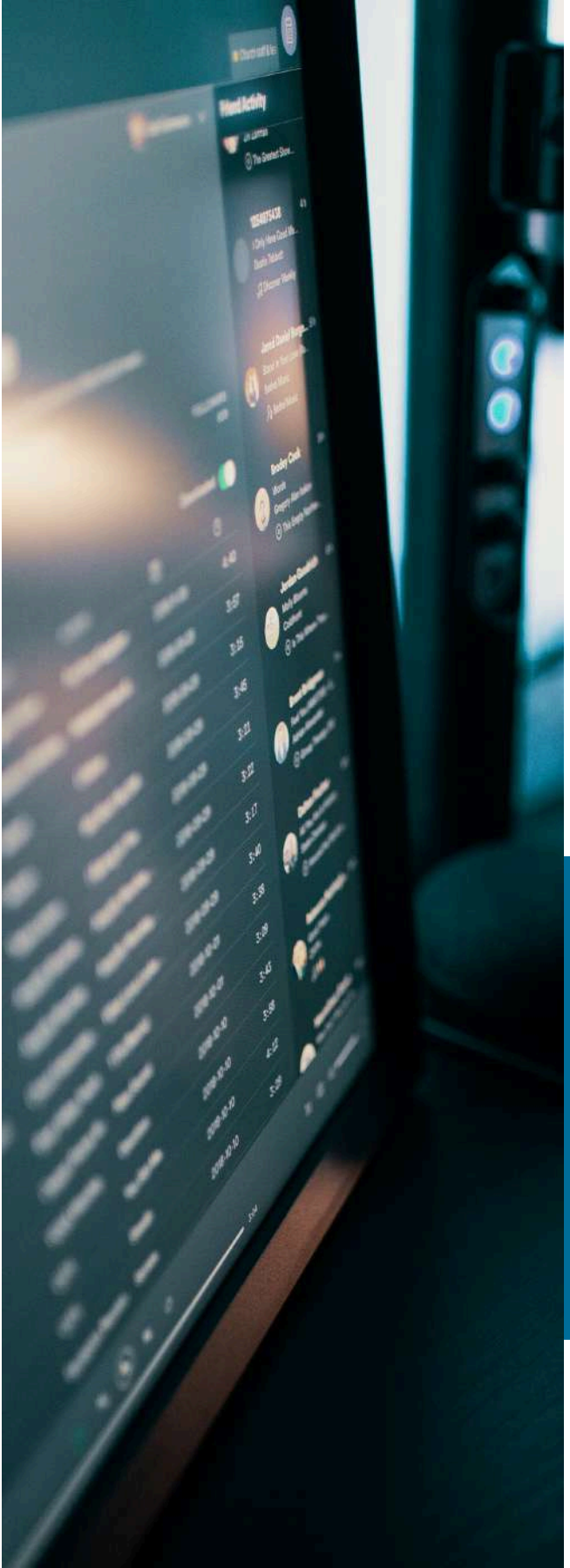
- Hands-on experience with Kubernetes clusters
- Docker for containerization
- Grafana dashboard customization using plugins (nodejs)
- Network traffic analysis and monitoring tools (Linkerd or Istio)

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Telecommunication Engineer



TELECOM-05. Plate-forme de test de la qualité de service

FIELD:
Telecom

DESCRIPTION:
This project focuses on building a web application to test Quality of Service (QoS) in network environments. The application will allow users to generate traffic with custom DSCP/TOS values and simulate TCP/UDP traffic. The traffic will be sent from a WLAN/LAN PC connected to an HGW, and performance measurements will be displayed via the web interface.

REQUIRED THEORETICAL KNOWLEDGE:

- Network Traffic
- QoS
- Performance Measurements
- Knowledge of Web Development

REQUIRED PRACTICAL SKILLS:

- Scapy
- Flent
- Python
- Flask/Django
- Plotly/Matplotlib
- Wireshark/tshark
- tc (contrôle du trafic)
- API

LOCATION
Tunis

DURATION
3-4 months

 # OF INTERNS
1/2

EXPECTED DIPLOMA
Telecom Engineer

TELECOM-06. Implementation of Management System with Real-Time Data Analysis and Visualization

FIELD:
Telecom

DESCRIPTION:
The objective of this project is to develop an automated solution that streamlines the management of test plans. The system will collect detailed information about test executions, analyze the data in real-time, and provide interactive visualizations, such as dynamic graphs and dashboards.
This will allow decision-makers to quickly assess test results, monitor trends, and optimize testing processes, thereby enhancing the overall efficiency and accuracy of decision- making in quality assurance workflows.

REQUIRED THEORETICAL KNOWLEDGE:

- Python, Shell
- HTML, React, CSS
- SQL, ELK
- Jenkins, Jira

REQUIRED PRACTICAL SKILLS:

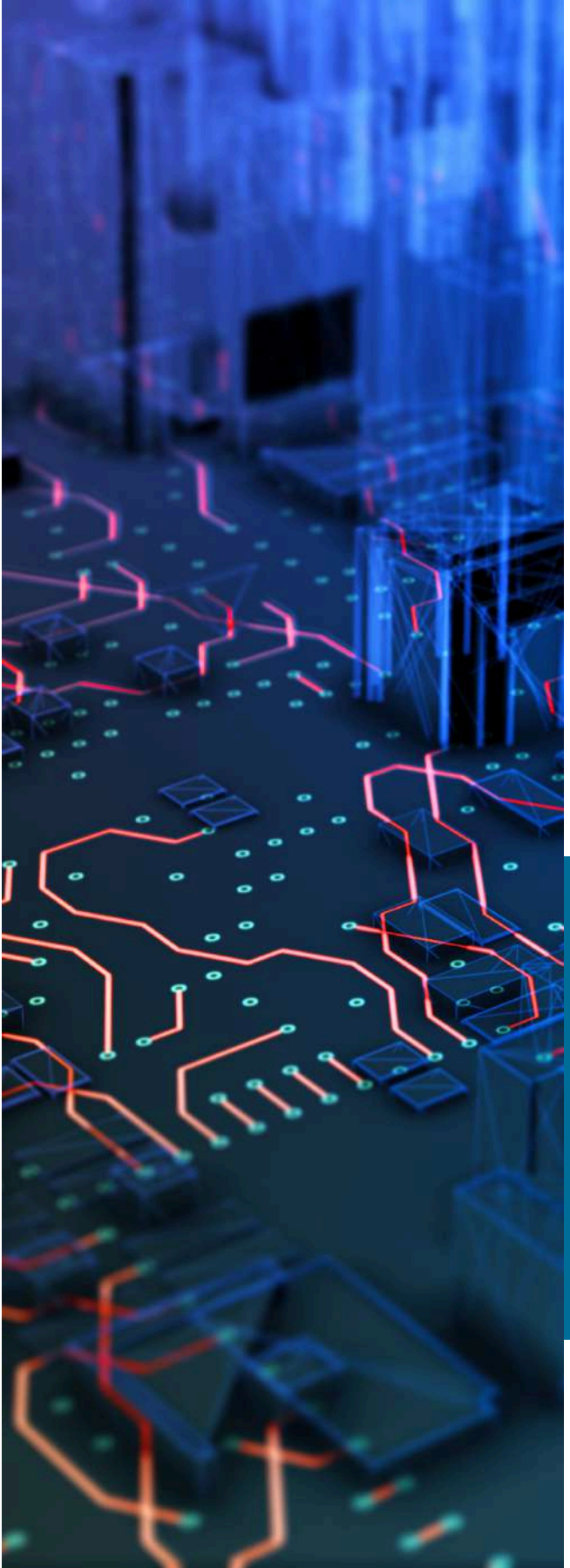
- Scapy
- Flent
- Python
- Flask/Django
- Plotly/Matplotlib
- Wireshark/tshark
- tc (contrôle du trafic)
- API

LOCATION
Tunis

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Ingénieur Informatique
Télécoms



TELECOM-07. Automating system infrastructure backup with Gitlab & Ansible

FIELD:
Telecom

DESCRIPTION:

The aim of the project is to automate the task of backing up our IT infrastructure with GitLab and Ansible.
By combining GitLab and Ansible, you can efficiently automate backup, reducing the risk of data loss and ensuring consistent configuration management. It also enables you to react quickly when restoration is needed.

You'll need to implement:

- GitLab for version management.
- Ansible for automation

REQUIRED THEORETICAL KNOWLEDGE:

- Linux

REQUIRED PRACTICAL SKILLS:

- Ansible,
- GitLab,
- ESXi

LOCATION
Tunis

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Ingénieur


E-PAYMENT
SYSTEMS

E-PAYSYS-01. Develop a cash register application for Android device

FIELD:
E-payment

DESCRIPTION:

The project aims to develop an application for cash register in android payment terminal. The primary objective is to allow users to scan items using the terminal's camera, through barcode scanning, get items prices, calculate the total amount and perform a transaction using payment application

REQUIRED THEORETICAL KNOWLEDGE:

- Programming languages (kotlin)
- Concepts of mobile app development (UI/UX design, accessibility)
- Frameworks (Android SDK)
- Knowledge on database, websockets
- Testing methods (unit tests, integration tests)

REQUIRED PRACTICAL SKILLS:

- Writing and debugging applications in kotlin
- Creating intuitive user interfaces and implementing accessibility features
- Building and deploying Android applications
- Writing and executing unit and integration tests to ensure functionality.

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

E-PAYSYS-02. Electronic Document Signing via Android Payment Terminals

FIELD:
E-payment

DESCRIPTION:

This project aims to develop a solution that allows documents such as contracts, receipts, and forms to be sent from a cash register through electronic cash register protocol (ZVT700) to an Android payment terminal for electronic signing.

The system will include a user-friendly interface, enabling customers to sign documents directly on the terminal. This will help businesses streamline contract approvals, service agreements, and other processes requiring signatures, improving efficiency and security.

REQUIRED THEORETICAL KNOWLEDGE:

- Payment terminal technologies and integration
- Android development principles
- Data exchange and communication protocols between devices

REQUIRED PRACTICAL SKILLS:

- Android application development (Java/Kotlin)
- RESTful APIs

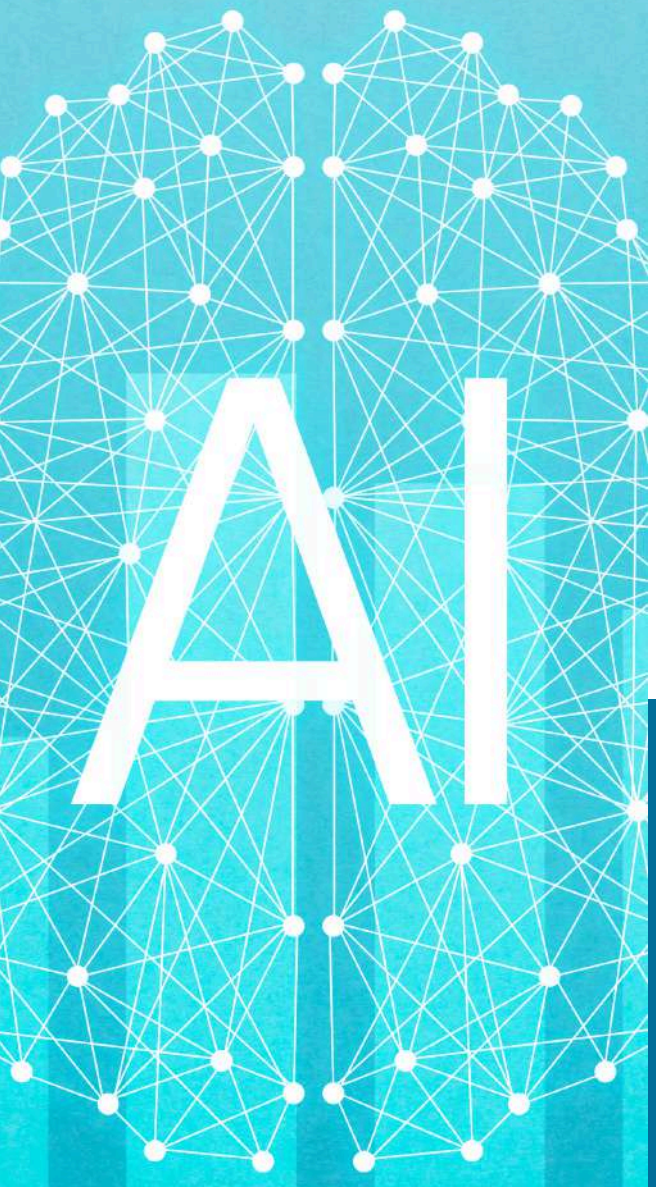
LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA

Software Engineer
IT Engineer
Computer Systems Engineer



E-PAYSYS-03. Development of an Intelligent Digital Receipt Management Server for Storing Electronic Receipts with AI-based Analytics

FIELD:
E-payment

DESCRIPTION:

This project involves developing an iDRM (Intelligent Digital Receipt Management) server designed to receive and store electronic receipts securely. The server will include both a backend for managing receipt storage and retrieval, and a frontend for providing a user-friendly interface to view and manage receipts.

Additionally, an AI-based feature will be integrated to analyze the stored receipts, offering insights such as purchasing trends, customer behavior analysis, and anomaly detection for potential fraud or errors.

REQUIRED THEORETICAL KNOWLEDGE:

- Server architecture
- Data management and storage protocols
- Artificial intelligence and machine learning for data analysis

REQUIRED PRACTICAL SKILLS:

- Server architecture
- Data management and storage protocols
- Artificial intelligence and machine learning for data analysis

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA

Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-04. Design and setting up a CI/CD pipeline to automate the development and deployment of an automatic test environment cycle targeting Android-type electronic payment terminals

FIELD:
E-payment

DESCRIPTION:

- This end-of-studies project involves the design and the setting up a CI/CD pipeline to automate the development and deployment cycle of an automatic test environment targeting Android-type electronic payment terminals.
- The candidate will be required to maintain, control of a versioned automatic test environment and host it in a shared location with secure access so that it can be shared and used by authorized resources.
- Subsequently, a control should be put in place to update the application and upgrade the software loaded in an Android terminal type once a new software version is available. Once the software environment has been updated, the next step is to launch the automatic tests in a nightly build.

REQUIRED THEORETICAL KNOWLEDGE:

- Test Automation

REQUIRED PRACTICAL SKILLS:

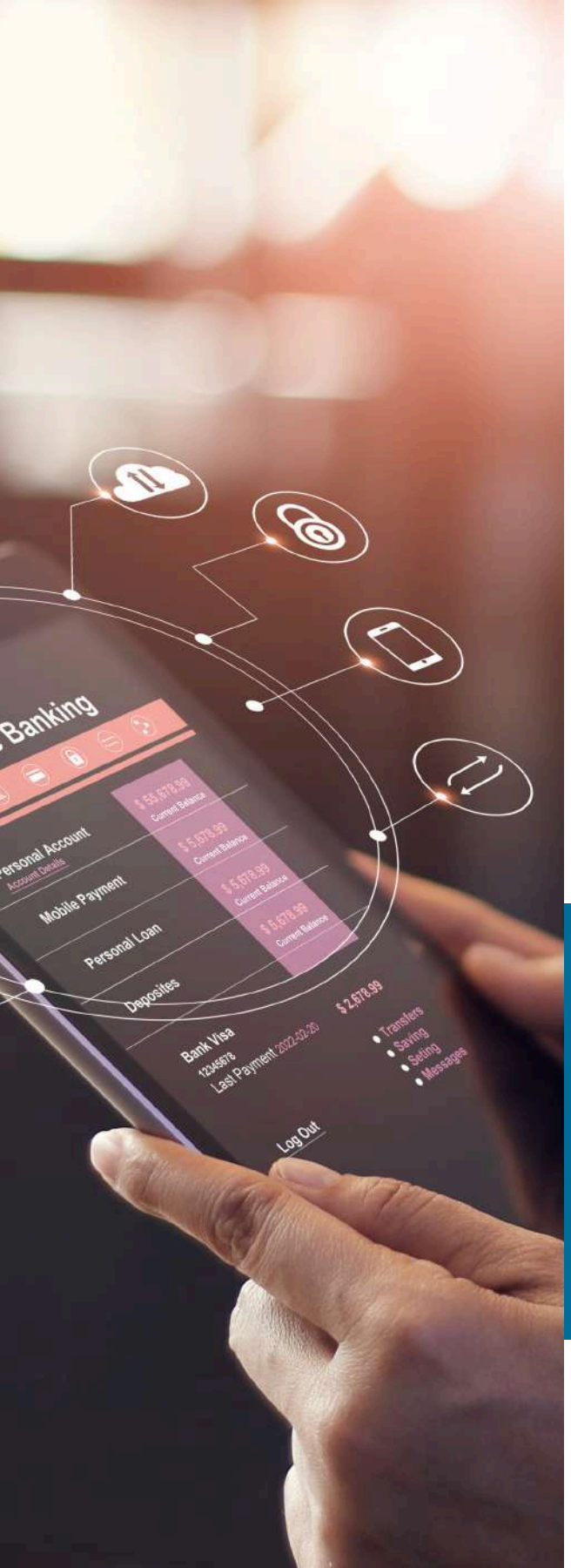
- Configuration tools
- CI tools
- Docker
- Artifactories tool

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer
IT Engineer
Computer Systems Engineer



E-PAYSYS-05. Cash register simulator

FIELD:
E-payment

DESCRIPTION:

Development of a cash register simulator to control a payment terminal based on IFSF protocol

REQUIRED THEORETICAL KNOWLEDGE:

- XML
- IFSF
- TCP/IP
- Socket

REQUIRED PRACTICAL SKILLS:

- Java
- PC
- Android

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

E-PAYSYS-06. Study and development of a log data analyzer

FIELD:
E-payment

DESCRIPTION:

The objective of this internship is to design and implement a solution allowing the analyze of the payment server logging files in order to :

- Report metrics: including number of accepted/ refused transactions, number of online/offline transactions, transactions duration…
- Identify errors: check if log files contain errors based on artificial intelligence and report errors if exist.

This solution must be deployed as a service (web-server) and must provide a web interface to facilitate its configuration and use.

REQUIRED THEORETICAL KNOWLEDGE:

- Artificial intelligence algorithms
- Web service
- Docker

REQUIRED PRACTICAL SKILLS:

- C/C++
- Python

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-07. Local CI/CD runner

FIELD:

E-payment

DESCRIPTION:

The candidate has to Design and develop a tool to run locally gitlab-ci jobs for a given project.

The Gitlab project, with the pipeline to check/run, must be cloned in a directory structure that mimics the gitlab groups: required if it includes pipeline definitions from other projects.

REQUIRED THEORETICAL KNOWLEDGE:

- Devops
- Gitlab CI/CD
- Gitlab Runner
- Docker

REQUIRED PRACTICAL SKILLS:

- Python
- Yaml
- Git

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA

Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-08. Study and development of a payment log analysis tool

FIELD:
E-payment

DESCRIPTION:

The objective of this internship is to design and implement a tool that allows the collect, parse and analyze of payment server log data, including exchanges with electronic payment terminal as well as exchanges with acquirer.
This solution must be able to :

- Collect log data from various sources
- Parse log data to extract relevant information
- Visualize log data in a meaningful way to facilitate the explore and analysis of this data
- Provide search and filtering capability to quickly find specific log data
- Trigger alerts when error occurs or critical incident is detected
- Perform real-time monitoring

REQUIRED THEORETICAL KNOWLEDGE:

- XML
- Docker
- Web service
- TLV

REQUIRED PRACTICAL SKILLS:

- C++
- Python
- Postgresql

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-09. Safe Passage: Development of a Secure Web-Based Sensitive Data Decryptor

FIELD:
E-payment

DESCRIPTION:

In today's digital world, cybersecurity is vital, and protecting sensitive data is crucial for maintaining trust and compliance, especially in the payment industry.
Our focus is on automating the decryption of settlement files containing sensitive customer data, such as card numbers. Currently, these tasks are performed manually, often requiring the simultaneous involvement of multiple security officials, making the process highly complex and challenging. Significant effort and logistics are needed to complete it on time.
This project aims to automate the decryption and anonymization of sensitive data within the payment domain, reducing the logistical load while enhancing operational efficiency. This robust and user-friendly solution ensures data authenticity and security, allowing only authorized users to perform such operations.

The candidate will be required to design and develop the following modules:

- An authentication Module
- An authorization Module
- A decryption Module
- Anonymization Module

REQUIRED THEORETICAL KNOWLEDGE:

- Security
- PGP encryption principles

REQUIRED PRACTICAL SKILLS:

- C++
- Python
- Postgresql

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-10. AI-Powered Unit Test Generator: Revolutionizing C++ Testing

FIELD:
E-payment

DESCRIPTION:

In software development, particularly within the payments sector, maintaining high code quality is essential. The security requirements in this field are critical; any vulnerability can lead to significant repercussions for both users and organizations. Moreover, the rapid evolution of regulations and technology necessitates constant vigilance and regular updates to the code.

As a result, a considerable amount of time is dedicated to developing unit tests, making it crucial to create test functions that accurately cover various scenarios to ensure code stability and security. However, this process can be time-consuming and energy-draining for development teams.

This project aims to exploit large language models (LLMs) to automate the generation of unit tests. By doing so, we can mitigate the burdensome nature of writing unit tests. The goal is to generate accurate and comprehensive test cases, improving overall code quality and reliability. This approach is especially beneficial for maintaining large C++ codebases, minimizing errors and allowing development teams to concentrate on delivering value to customers.

REQUIRED THEORETICAL KNOWLEDGE:

- AI & LLM
- Testing

REQUIRED PRACTICAL SKILLS:

- C/C++
- Python
- Unit testing with gtest
- AI/ML tools

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-11. Study and development of monitoring dashboard of payment production server

FIELD:
E-payment

DESCRIPTION:

In order to make the monitoring of Payment production chain, we need to make a dashboard based on server logs to visualize some metrics and create alerts per mail in case of issue.

The candidate will study and analyze the format and parse the contents of server payment application logs and convert it to a suitable/searchable/queryable format to:

-Setup the dashboard to visualize:

- Transaction metrics
- Erros metrics
- Performance metrics

-To create alerts in case of abnormal metrics

REQUIRED THEORETICAL KNOWLEDGE:

- Syslog logs
- Dashboard

REQUIRED PRACTICAL SKILLS:

- Grok
- Logstack
- Elasticsearch
- Grafana / kibana

LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA

Software Engineer
IT Engineer
Computer Systems Engineer

E-PAYSYS-12. Development of a Mobile application for classification of scanned QR and paper resumes

FIELD:
E-payment

DESCRIPTION:

The candidate is required to specify, design and develop a Mobile application and a Micro-Services based on Artificial Intelligence used for the classification of scanned documents (Example: Resumes) based on QR code or Paper format.

The Mobile application is used to scan an administrative document (Resumes) and to classify them according to predefined profiles while exchanging with Micro-Services which can run in an embedded board like Raspberry PI. These Micro Services are based on Artificial Intelligence (Deep Learning, CNN, LBPH, ADL, etc.). A WEB application can be requested as an option and will be used for an administration purpose and responsible for the configuration and the monitoring of this classification solution.

REQUIRED THEORETICAL KNOWLEDGE:

- Artificial intelligence
- Mobile and WEB development
- Web Services, Web Token

REQUIRED PRACTICAL SKILLS:

- Web 2.0
- Java / Java EE
- TypeScript / Angular
- Flutter / Kotlin
- GIT ...

LOCATION
Sfax

DURATION
4-5 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

E-PAYSYS-13. Agile Velocity Insight - Predictive Analytics for Team Performance

FIELD:
E-payment

DESCRIPTION:
The candidate is required to design and develop a web application based on Angular/Typescript for frontend part and Springboot/Java for the backend, which leverages Artificial Intelligence to analyze historical performance data of Agile teams and providing insights into their velocity and predicting future performance for upcoming sprints.

This application should :

- Gather historical sprints data, including user stories, task completion rates, and team member contributions,
- Integrate with popular project management tools like Jira to automate data collection,
- Utilize statistical methods and AI algorithms to analyze historical velocity trends,

- Include features such as dashboards, graphs, and reports that highlight key insights and actionable recommendations...

REQUIRED THEORETICAL KNOWLEDGE:

- Artificial intelligence
- Mobile and WEB development
- Web Services, Web Token

REQUIRED PRACTICAL SKILLS:

- Web 2.0
- Java / Java EE
- TypeScript / Angular
- Flutter / Kotlin
- GIT ...

LOCATION
Sfax

DURATION
4-5 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

E-PAYSYS-14. Development of a Web application to manage the performance cycle

FIELD:
E-payment

DESCRIPTION:

The candidate has to develop a web application based on Angular/Typescript in frontend part and Springboot/Java for the backend part, for managing the performance cycle workflow.

This application must allow to:

- Set the different stages of the performance cycle,
- Guide the process automatically,
- Collect and consolidation by HR team,
- Delegating steps/tasks to specific users
- Generate KPI's...

This application will be composed of two parts: a Frontend part based on Angular and CSS3 and a Backend part based on Java/Spring Boot. The communication between the different parts is done via REST Web Services.

REQUIRED THEORETICAL KNOWLEDGE:

- WEB development
- HR
- Performance evaluation process
- AGILE

REQUIRED PRACTICAL SKILLS:

- TypeScript/Angular
- PostgreSQL
- Java/Spring Boot
- Git

LOCATION
Sfax

DURATION
4-5 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

E-PAYSYS-15. Development of a Recruitment and Employees Management System

FIELD:
E-payment

DESCRIPTION:

The candidate has to develop a web application that streamlines the recruitment process, manages employee history, and tracks evaluation metrics to enhance HR efficiency.

Your mission will be to :

- Design a user-friendly interface for posting job openings and managing applications.
- Implement features for tracking candidates through various stages, from application to hiring.
- Create a database to store detailed employee records,
- Enable easy retrieval and updating of employee data for HR personnel,
- Develop tools for tracking employee evaluations, performance reviews,
- Generate reports that summarize employee performance over time...

REQUIRED THEORETICAL KNOWLEDGE:

- WEB development
- HR
- Performance evaluation process
- AGILE

REQUIRED PRACTICAL SKILLS:

- TypeScript/Angular
- PostgreSQL
- Java/Spring Boot
- Git

LOCATION
Sfax

DURATION
4-5 months

 # OF INTERNS
2

EXPECTED DIPLOMA
Engineer

E-PAYSYS-16. Management System for Telnet Academy

FIELD:
Resource Management & HR

DESCRIPTION:

Design and develop a comprehensive Management System aimed at streamlining the tracking and management of resources for monthly Telnet Academy sessions.
This tool will enhance the Telnet Academy training experience and support data-driven decisions to optimize program effectiveness. Key features include:

- **Streamlined Registration:** Facilitate an easy registration process for various training sessions, ensuring efficient participant sign-up.
- **Feedback Tracking:** Record and analyze attendee feedback (hot & cold evaluations) to drive continuous improvement.
- **Automated Notifications:** Enable automatic reminders, confirmations, and other notifications to improve communication and organization.

This system will provide a more organized approach to managing training sessions and gathering insights to support ongoing enhancement of Telnet Academy programs.

REQUIRED THEORETICAL KNOWLEDGE:

- Web Development
- Database Design and API Integration
- Software design
- Documenting

REQUIRED PRACTICAL SKILLS:

- Frontend: React.js, Angular, ...
- Backend: Node.js or Spring Boot
- Authentication
- Data base management
- Git

LOCATION
Sfax

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Computer Science Engineer,
Software Engineer

E-PAYSYS-17. Equipment Inventory Management System

FIELD:
Payment System

DESCRIPTION:

Design and Develop a comprehensive Inventory Management System aimed at efficiently tracking and managing inventory items, including materials frequently used by the team. This tool will improve accountability, streamline processes, and minimize loss of critical items through real-time inventory tracking, user authentication, and automated notifications.

REQUIRED THEORETICAL KNOWLEDGE:

- ·Web & Mobile Development
- Database Design and API Integration

REQUIRED PRACTICAL SKILLS:

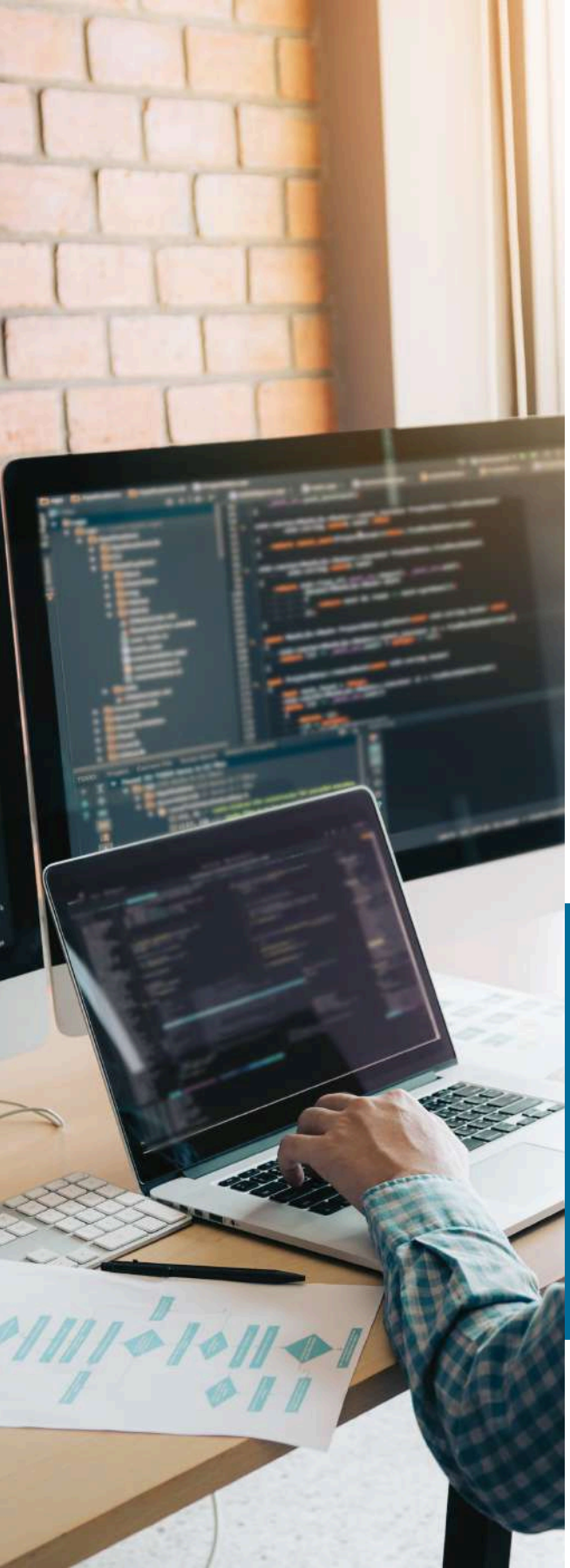
- ·Frontend: React.js, Kotlin
- ·Backend: Node.js or Spring Boot
- ·Authentication: OAuth2/SSO
- Git...

LOCATION
Sfax

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software Engineer



E-PAYSYS-18. Plan2Test

FIELD:
Payment System

DESCRIPTION:
Develop a desktop application for windows that aims to streamline the conversion between test cases and test scripts, providing flexibility for users to create either from the other.

Key Features:

- **Upload Test Cases and Test Scripts**: Users can easily bring in existing test cases or scripts, facilitating integration with current processes.
- **Parse Test Cases and Test Scripts**: The tool will analyze the structure of both elements, ensuring compatibility and clarity during conversion.
- **Review & Validation:** Built-in features will allow users to review and validate test cases and scripts, ensuring accuracy and adherence to standards.
- **Export Test Cases and Test Scripts:** Users can export their work in various formats, making it easier to share and implement across different platforms.

Utility:
By providing these functionalities, the tool will address the common challenges faced with testing environments, enhancing productivity and collaboration between teams.

REQUIRED THEORETICAL KNOWLEDGE:

- Algorithms, Object-Oriented Programming & Data Structures

REQUIRED PRACTICAL SKILLS:

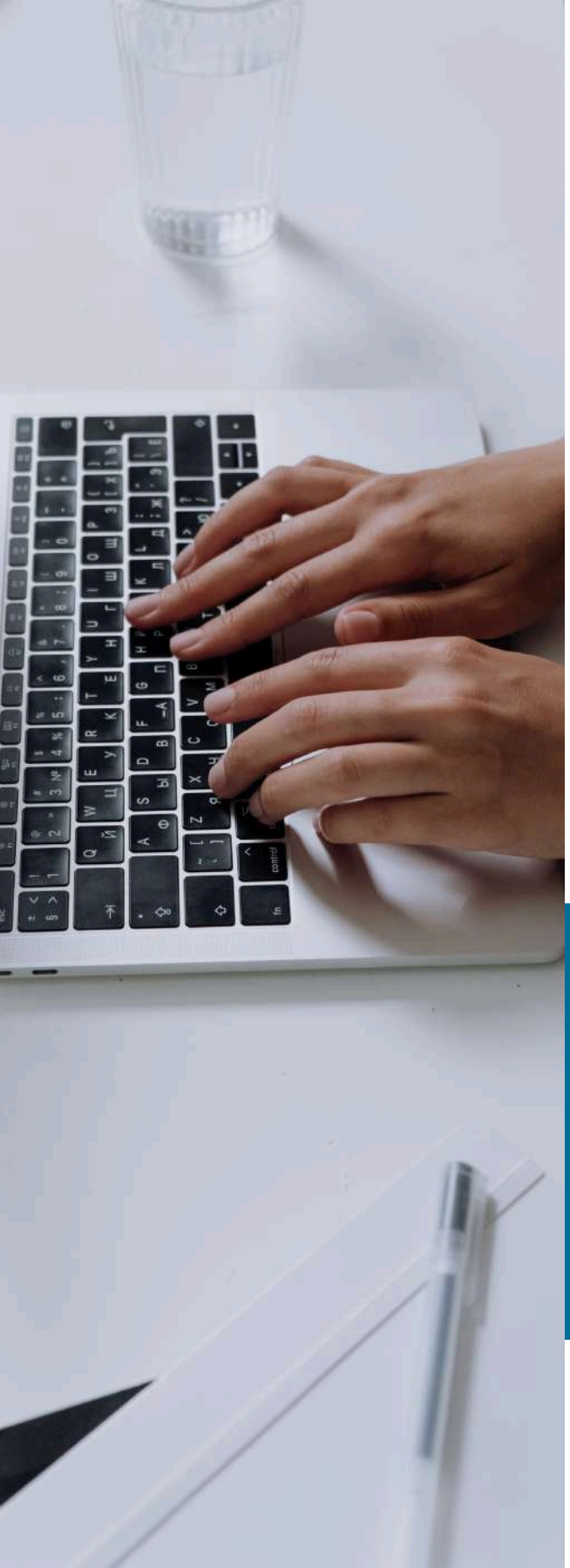
knowledge of Java frameworks and libraries, Agile Methodologies, Java Developer Tool, cucumber framework

LOCATION
Sfax

DURATION
6 months

 # OF INTERNS
2

EXPECTED DIPLOMA
Software Engineer



E-PAYSYS-19. Performance Monitoring Tool

FIELD:
Payment System

DESCRIPTION:
Develop a desktop application for windows which will allow the monitoring of memory usage and execution time during running automated test scripts on Android devices. The main goal is to provide developers and testers with valuable performance insights during the testing process.

Key Features:

- **Integration with Performance Monitoring Tools/Libraries:** The application will support integration with existing performance monitoring solutions, allowing users to leverage established libraries for enhanced data collection.
- **Execution of Tests and Data Collection:** Users can execute automated tests directly through the app, capturing crucial performance metrics related to memory usage and execution time in real-time.

Utility:
By offering these functionalities, the tool enables teams to identify performance bottlenecks and optimize their applications effectively. This monitoring capability can lead to improve application reliability and user experience, making it a valuable asset in the testing toolkit.

REQUIRED THEORETICAL KNOWLEDGE:

- Algorithms, Object-Oriented Programming & Data Structures

REQUIRED PRACTICAL SKILLS:

knowledge of Java frameworks and libraries, Agile Methodologies, Java Developer Tool, Appium

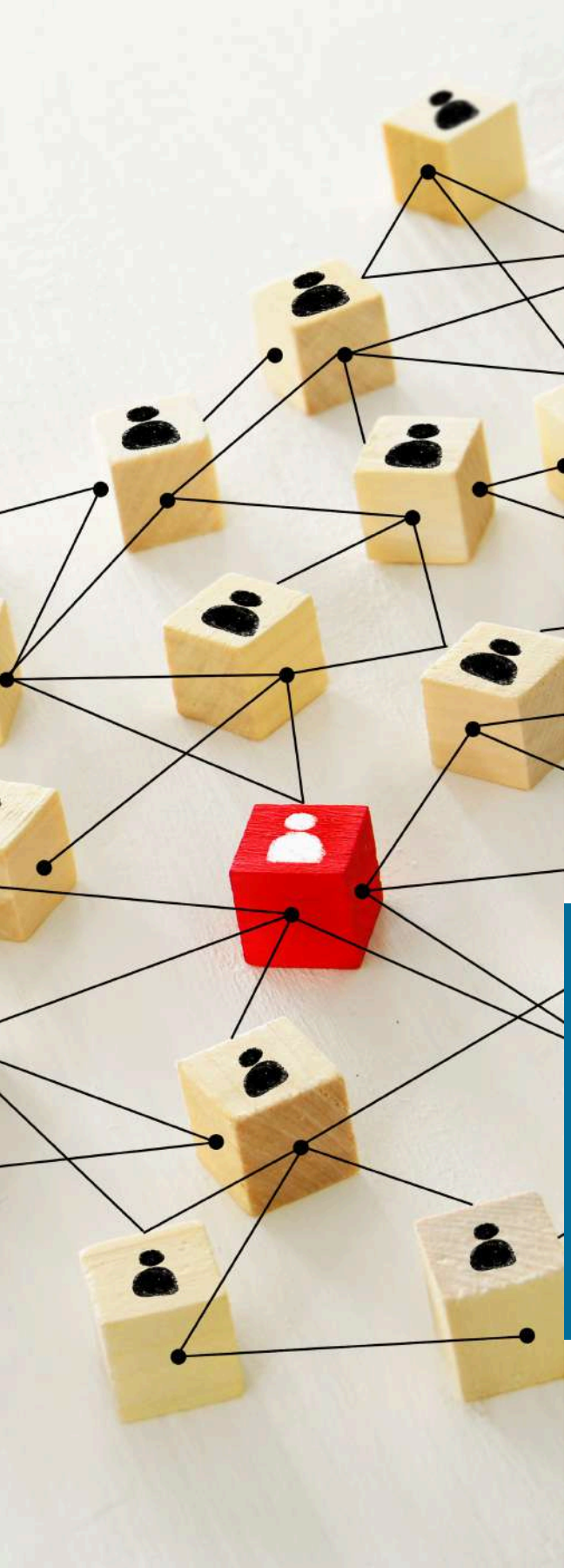
LOCATION
Sfax

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Computer engineer

INFORMATION SYSTEMS



I-SYSTEMS-01. Human Resource Management - Work Time management web application

FIELD:

Information Systems

DESCRIPTION:

Design and development of a web application for managing employee timekeeping.

REQUIRED THEORETICAL KNOWLEDGE:

- Needs analysis and design
- Development of a timekeeping management web application
- Management of employee clock-ins and clock-outs
- Attendance tracking and monitoring
- User management

REQUIRED PRACTICAL SKILLS:

- .Net core
- Angular
- oracle
- PL/SQL
- Git
- Scrum

LOCATION

Tunis

DURATION

4-6 months

 # OF INTERNS

1

EXPECTED DIPLOMA

Full stack developer

I-SYSTEMS-02. Human Resource Management - Management of leaves and absences

FIELD:

Information Systems

DESCRIPTION:

Design and Implementation of a web application for HR Management.

REQUIRED THEORETICAL KNOWLEDGE:

- Needs analysis and design
- Development of leave management web application
- Management of leave requests
- Permission management
- User management

REQUIRED PRACTICAL SKILLS:

- .Net core
- Angular
- oracle
- PL/SQL
- Git
- Scrum

LOCATION

Tunis

DURATION

4-6 months

 # OF INTERNS

1

EXPECTED DIPLOMA

Full stack developer


Mechatronics

Mechatronics-01. Study and design of a test bench for a BLDC engine

FIELD:

Mechatronics

DESCRIPTION:

This project aims to characterize a BLDC motor by studying several key parameters such as RPM, thrust, current consumption, and more.

The study has two main aspects:

1. Software study: Development of software capable of supervising various parameter measurements in real time. The software should allow data to be recorded for future analysis and performance comparisons based on different motor configurations.
2. Mechanical study: Design and optimization of a robust mechanical test bench capable of accommodating different types of propeller, while ensuring stability and accuracy in measurements. The test bench must be designed to minimize mechanical interference (such as vibrations and parasitic noise) that could affect results. The study will also focus on selecting the most suitable electronic components to ensure measurement accuracy and reliability.

The expected outcomes are a database detailing BLDC motor performance as a function of various parameters, along with recommendations for the most efficient configurations for specific applications.

REQUIRED THEORETICAL KNOWLEDGE:

- POO
- Communication protocols
- Instrumentation
- Aerodynamics

REQUIRED PRACTICAL SKILLS:

- C++
- C#
- Stm32
- Catia
- ABAQUS
- Git

LOCATION
Tunis

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA

Mecatronic Engineer

Mechatronics-02. Optimization of Aircraft Structural Design Using Composite Materials

FIELD:
Mechanical

DESCRIPTION:
This project aims to optimize the design of an aircraft structure to enhance performance while ensuring safety and durability.

The study focuses on three main areas:

- Optimizing the existing structure for lightness and strength.
- Exploring various types of composite materials and their impact on aircraft performance.
- Manufacturing a functional prototype.

REQUIRED THEORETICAL KNOWLEDGE:

- Materials
- composite
- Mechanical Design

REQUIRED PRACTICAL SKILLS:

- CAO : CATIA V5
- ABAQUS

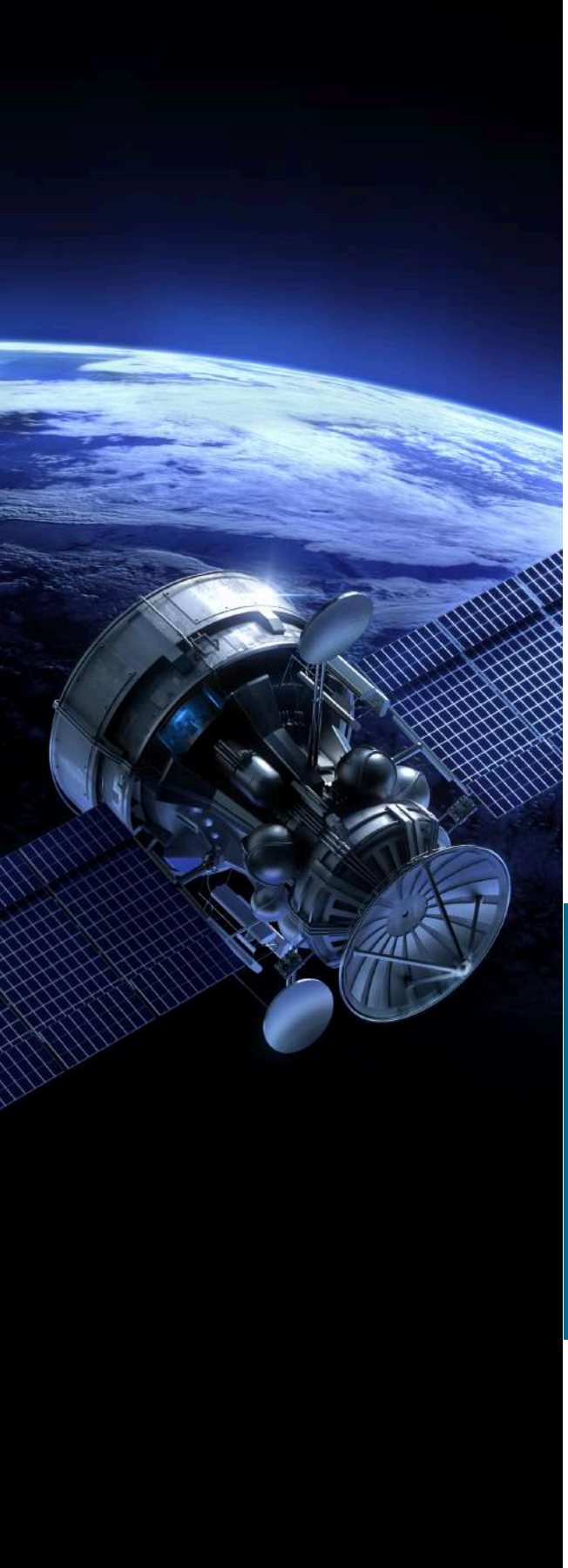
LOCATION
Tunis

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Mechanical Engineer


ELECTRONICS



ELECTRONICS-01. Study and design of a ground control station

FIELD:
Electronics

DESCRIPTION:

The project consists in designing an EPS (Electrical power system) module for a CubeSat satellite.

The project involves the following three phases:

1. RF study: Study and RF dimensioning of the TX and RX chain required to exchange data with the satellite in the UHF band.
2. Electronic study and design: Selection of components and modules, and design of RF electronic boards.
3. Integration and testing: Assembly and integration testing of sub-systems and validation of the solution.

REQUIRED THEORETICAL KNOWLEDGE:

- Solid knowledge of Radio Frequency RF
- Antenna and filter dimensioning
- Analog/digital electronics

REQUIRED PRACTICAL SKILLS:

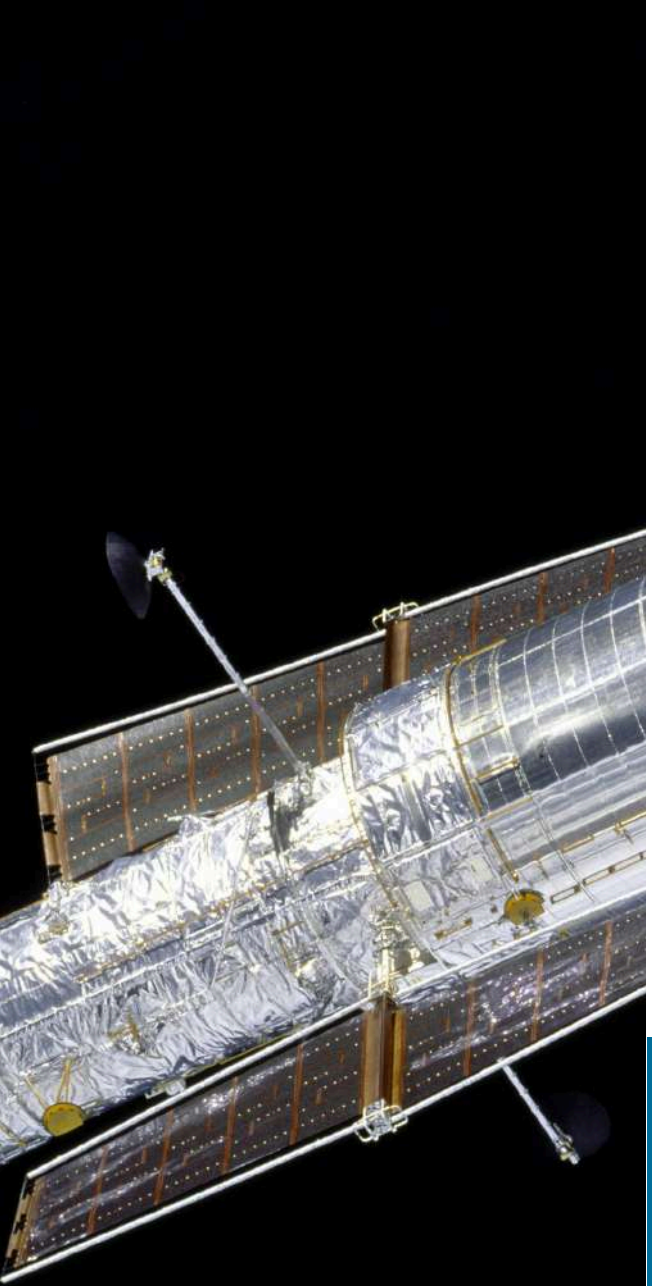
- Electronic CAD tools (Altium or equivalent)
- PCB routing
- RF design and simulation (ADS, ...)

LOCATION
Tunis

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Electronics



ELECTRONICS-02. Study and design of an EPS (electrical Power System) module

FIELD:
Electronics

DESCRIPTION:

The project consists in designing an EPS (Electrical power system) module for a CubeSat satellite.

The project involves the following three phases:

1. Specification: Definition and identification of the requirements necessary for the development of the EPS module.
2. Design: Component selection, schematic and PCB design.
3. Realization: PCB routing, assembly and integration testing of sub-systems and validation of the EPS module.

REQUIRED THEORETICAL KNOWLEDGE:

- Analog/digital electronics
- Measurement instrumentation

REQUIRED PRACTICAL SKILLS:

- Electronic CAD tools (Altium or equivalent)
- PCB routing

LOCATION
Tunis

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Electronics


QUALITY

QUALITY-01. SkillHub: Telnet Competency Management System

FIELD:

Web, Agile,Skills Management

DESCRIPTION:

The main objective of this project is to develop a web application to manage the skills of employees within the Telnet group, based on the internal skills framework. This solution aims to provide a clear and concise view of the available skills, identify training needs, and support career management.

Application Features :

- Skills Management:

Skills Framework: Integration and management of Telnet's skills framework, defining technical, behavioral, and specific skills by role.

Skills Assessment: Functionality allowing managers and employees to evaluate skills, taking into account levels of expertise (beginner, intermediate, expert, etc.).

Skills Tracking: Monitoring of individual skills, with a history of assessments and progress.

- Synthetic Dashboard:

Skills Overview: Display of a global view of existing skills within the group, with key indicators (strong skills, gaps, etc.).

Skills Mapping: Graphical presentation to visualize skills by team, department, or project.

Alerts and Notifications: Setting up notifications to highlight skill gaps or development opportunities (available training, recommendations, etc.).

- Employee Management:

Skills Profile: Creation and management of individual skills profiles for each employee, with the ability to add, modify, and remove skills.

Career Development: Monitoring career paths and developed skills, facilitating the planning of promotions and necessary training.

- Reports and Analytics:

Report Generation: Ability to generate customized reports on skills by individual, team, or department.

Data Analysis: Analysis features to identify trends, training needs, and skill gaps within the group.

REQUIRED THEORETICAL KNOWLEDGE:

- Web service
- Micro service
- DataBase

REQUIRED PRACTICAL SKILLS:

- Dotnet
- Angular
- Oracle
- SQL et PL/SQL
- Architecture N-tiers

LOCATION
Tunis

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

QUALITY-02. Development of a WEB application for risk management

FIELD:

Web development / Project management / Agile / Risk management

DESCRIPTION:

Risk management is a fundamental component of TELNET's Integrated Management Systems, as risks are inherent across all strategic, process, and project activities. This project aims to develop a comprehensive web application to streamline and enhance the risk management process within TELNET.

The application will provide TELNET managers with a digital, efficient, and user-friendly platform to conduct risk assessments, enabling them to identify, analyze, assess, and mitigate risks effectively. By automating and simplifying the risk management workflow, the solution will help save valuable time, improve decision-making, and ensure business continuity.

Key Features

- Risk Identification: Efficient tools to detect and log potential risks across various business areas.
- Risk Analysis: Robust features for evaluating the likelihood and impact of identified risks.
- Risk Assessment: Prioritization of risks based on severity, facilitating focused action.
- Risk Treatment: Strategic planning to mitigate, transfer, accept, or avoid identified risks, with task assignment and progress tracking.
- Risk Mapping: Visual representation of risks, offering a clear overview of the risk landscape within TELNET's operations.
- Risk Dashboard Interfaces: Customizable dashboards for real-time monitoring, data visualization, and alerting, ensuring proactive risk management.

REQUIRED THEORETICAL KNOWLEDGE:

- Web service
- Micro service
- DataBase

REQUIRED PRACTICAL SKILLS:

- Dotnet
- Angular
- Oracle
- SQL et PL/SQL
- Architecture N-tiers

LOCATION

Tunis

DURATION

4-6 months

 # OF INTERNS

1

EXPECTED DIPLOMA

Engineer

QUALITY-03. QUALITY-03. BCM hub: Business continuity management system

FIELD:
Information Security

DESCRIPTION:
Development of a WEB application for the organization, management and monitoring of business continuity

The modules to be developed are:

- Business Impact Analysis
- Continuity Risk Management
- Organization and crisis management
- Continuity tests
- Business Continuity Performance Dashboard

REQUIRED THEORETICAL KNOWLEDGE:

- ISO 22301
- Risk management
- Web service/micro service

REQUIRED PRACTICAL SKILLS:

- Dotnet
- Angular
- Oracle
- SQL et PL/SQL
- Architecture N-tiers

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer

QUALITY-04. Mobile application for business continuity management system

FIELD:
Information Security

DESCRIPTION:
Development of a mobile application compatible with IOS and Android treating the organization, management and monitoring of business continuity in a crisis situation.

The application must:

- Ensure real-time communication with members of the crisis unit
- Synchronize actions between the different stakeholders (member of the crisis unit)
- Communicate with the business continuity management application for reporting and monitoring of the crisis.
- Automate notifications to the member of the crisis unit and to civil organizations.
- Ensure tracking of the different actions according to each role of the continuity members.

REQUIRED THEORETICAL KNOWLEDGE:

- ISO 22301
- Risk management
- Mobile Development (ISO & android)

REQUIRED PRACTICAL SKILLS:

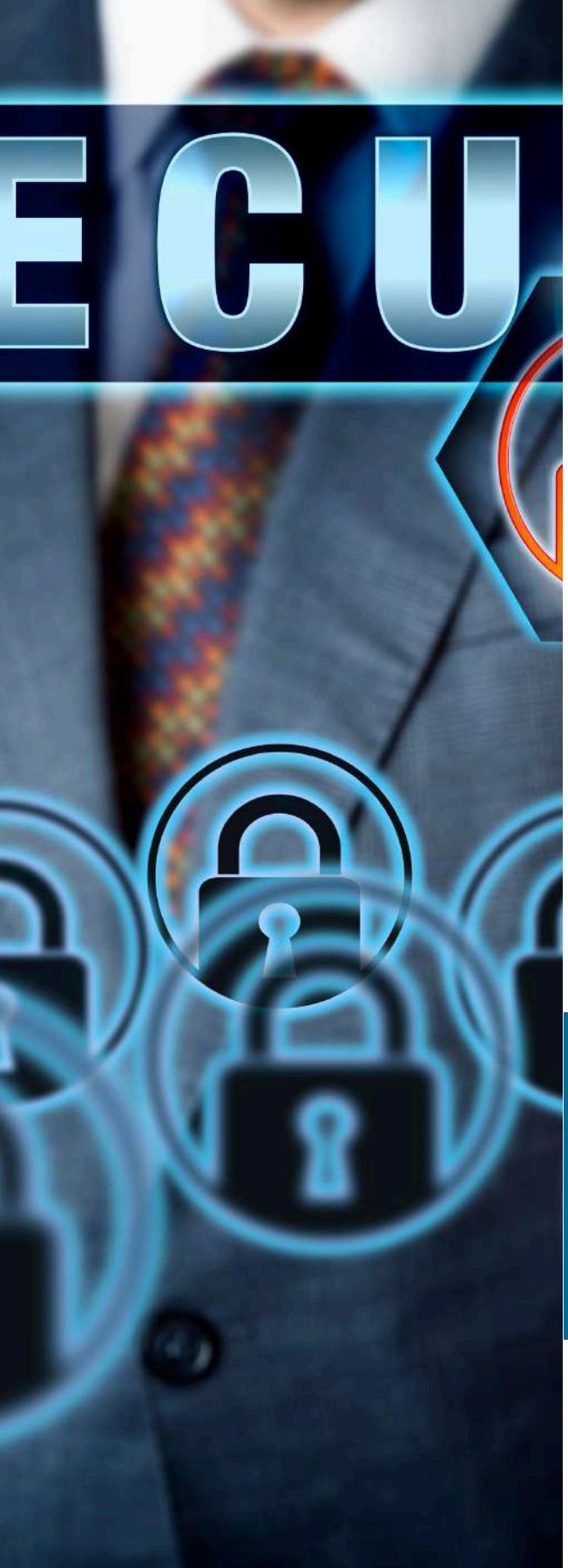
- Dotnet
- Angular
- Oracle
- SQL et PL/SQL
- Architecture N-tiers

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer



QUALITY-05. Development of a web application for quality and information security management system

FIELD:

Quality & Information Security

DESCRIPTION:

Development of a WEB application for the organization, management and monitoring of management system

The modules to be developed are:

- Context analysis (SWOT and PIP)
- Quality and IS objectives monitoring
- Internal audit management
- Process performance monitoring
- Customer satisfaction management

REQUIRED THEORETICAL KNOWLEDGE:

- ISO 9001 & ISO27001
- Web service/micro service

REQUIRED PRACTICAL SKILLS:

- Dotnet
- Angular
- Oracle
- SQL et PL/SQL
- Architecture N-tiers

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Engineer


Media&Energie

Media&Energie-01. WiFi Energy save in Home Gateway

FIELD:

Energy saving

DESCRIPTION:

Today, the electricity consumption of household equipment (Wifi router, Wifi repeater, TV decoder, etc.) is becoming a major subject for stakeholders.

The main challenge would be to reduce energy consumption without impacting the performance of the equipment and thus the user experience.
We propose to set up an Algorithm which should optimize home gateway energy consumtion by reducing the use of WiFi chipsets.

Trainees will:

- Implement the Algorithm which would control different operating modes of the WiFi system
- Develop the different software modules necessary to meet the need,
- Evaluate the energy performance of the solution,
- Prepare and execute the functional validation strategy,
- Deploy the final solution.

REQUIRED THEORETICAL KNOWLEDGE:

- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:

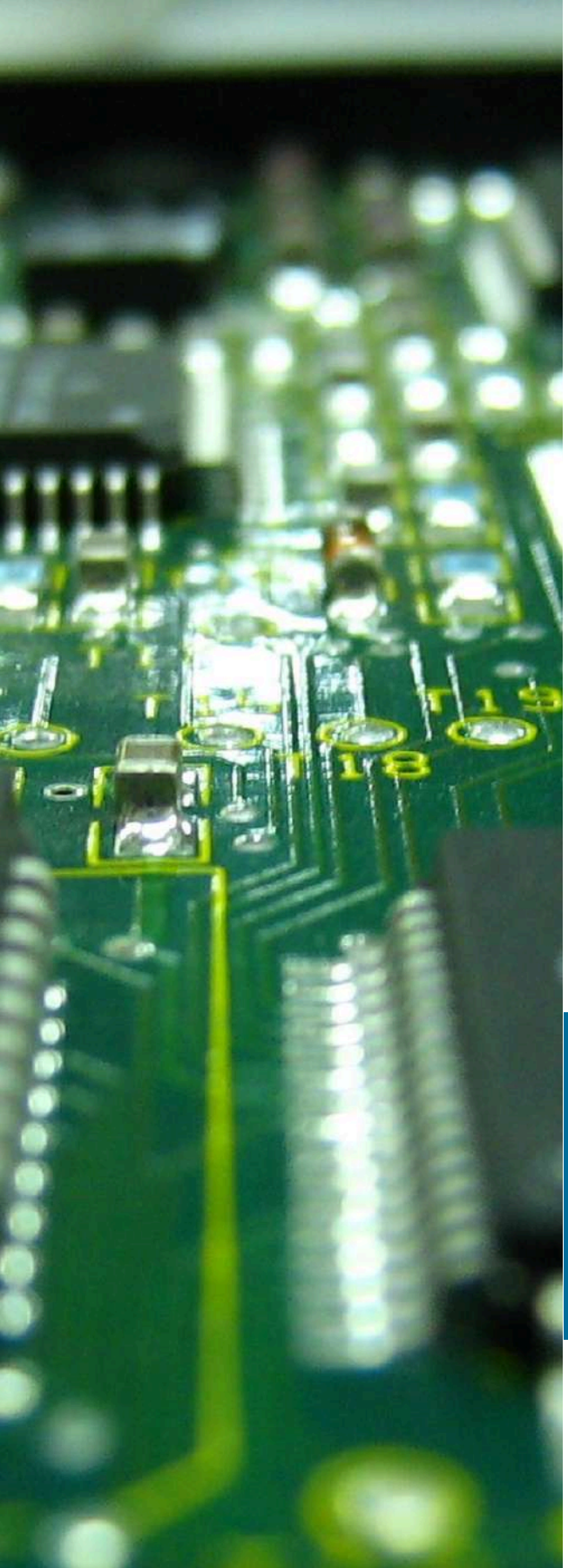
- environment Embedded
- Home gateway
- Wifi module

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer



Media&Energie-02. WiFi Energy save in system Home Gateway and Repeater

FIELD:

Energy saving

DESCRIPTION:

Saving energy is indeed becoming increasingly important, both for environmental sustainability and economic reasons. Many enterprises are recognizing the critical role they play in this challenge and are committing to energy-saving initiatives.

To achieve this, we aim to reduce energy consumption in a system consisting of a home gateway and repeater with two different solutions :

- we propose improving the efficiency and solving the limitations of the existing solution to optimize energy consumption without affecting the user experience.
- we propose developing an other algorithm that optimizes energy consumption without impact in the user experience.

Trainees will:

- solve limitation in existing Algorithm
- Implement other Algorthm
- Improve the efficiency of those algorithms
- Develop the different software modules necessary to meet the need
- Evaluate the energy performance of the solution
- Prepare and execute the functional validation strategy
- Deploy the final solution

REQUIRED THEORETICAL KNOWLEDGE:

- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:

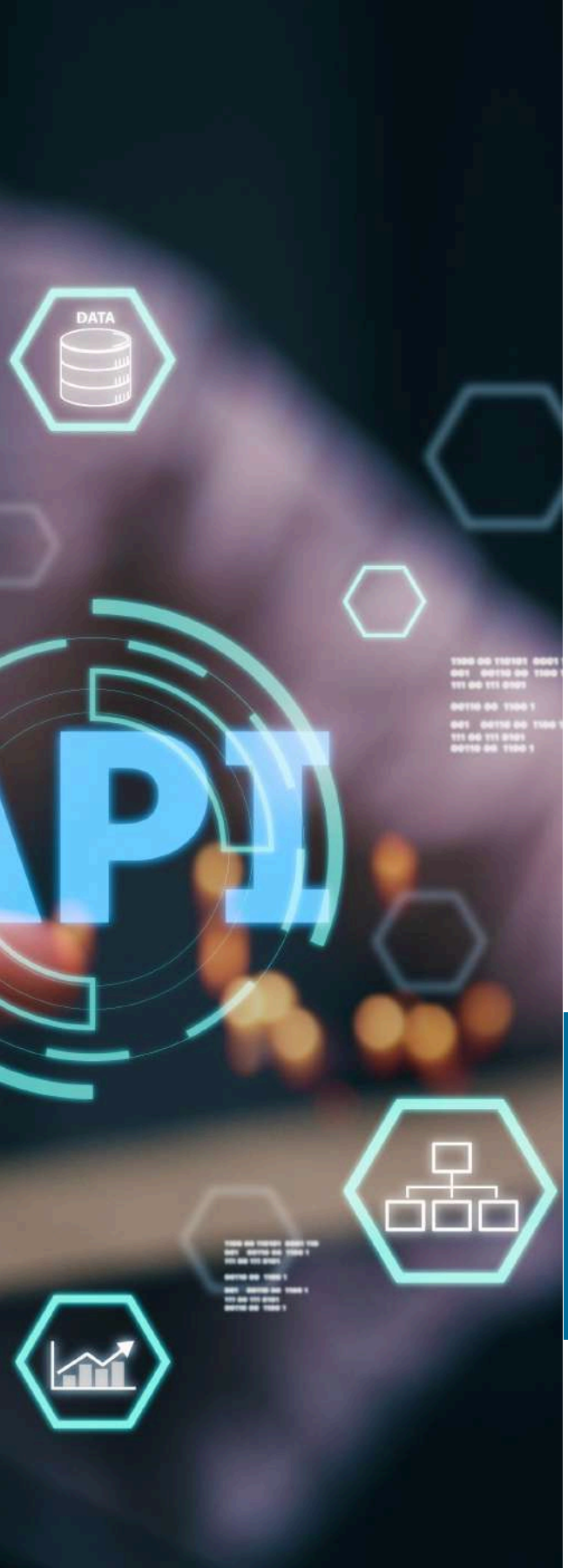
- environment Embedded
- Linux, Embedded C
- Home gateway , Wifi module

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer



Media&Energie-03. Collaborative Task Management System

FIELD:

IT Tools

DESCRIPTION:

The goal of the project is to build a task management platform for teams where users can collaborate, assign, and track tasks in real-time.

The platform should include:

- Real-time notifications,
- User authentication,
- Role-based access control,
- And a dashboard to monitor project progress.

Key Technologies:

- Backend: FastAPI (for REST APIs and gRPC services)
- Frontend: ReactJS
- Database: MySQL
- Protocol: gRPC and REST API (to communicate between services)

Deliverables:

- Fully functioning task management system (backend & frontend).
- API documentation for REST and gRPC.
- Database schema and setup scripts (MySQL).
- Project dashboard with reports and progress tracking.
- Documentation covering architecture, design choices, and user manual.

This project would demonstrate your knowledge in full-stack development, API design, real-time communication using gRPC, and deployment of modern web applications.

REQUIRED THEORETICAL KNOWLEDGE:

- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:

- Full stack environment
- ReactJS, FastAPI, MySQL

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA

Software engineer

Media&Energie-04. Automatic Sports Highlights Summarizer

FIELD:

IA Tools

DESCRIPTION:

The system will automatically generate match highlights by detecting important moments (like goals, touchdowns, or baskets) in a live stream or broadcast of sports events. It will use both video and audio cues to detect key actions and summarize them into highlights.

Key Features:

1. Stream Input and Parsing
2. Action Detection (Goals, Scoring Events, etc.)
3. Summarization
4. Integration with NLP (Natural Language Processing) for Audio
5. Scene Classification
6. Output as Highlight Video
7. Optional

Technologies to Use:

- Video Processing: Use frameworks like OpenCV or FFmpeg for video parsing and analysis.
- Audio Processing: Use libraries like PyDub or librosa for audio feature extraction.
- NLP: Integrate libraries like spaCy or HuggingFace for speech-to-text and keyword detection.
- Machine Learning / Deep Learning: Use models like CNNs for image and video classification (e.g., detecting a goal).
- Data Labeling: Manually label a dataset of sports events with goals, fouls, and other key moments for training purposes.

REQUIRED THEORETICAL KNOWLEDGE:

- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:

- Machine Learning / Deep Learning
- Audio & Video Processing, NLP

LOCATION

Tunis

DURATION

4-6 months

 # OF INTERNS

1

EXPECTED DIPLOMA

Software engineer

Media&Energie-05. Automated Vulnerability Testing and Security Auditing

FIELD:
Cybersecurity

DESCRIPTION:
The aim of this project is to develop an automated framework for cybersecurity vulnerability testing and penetration testing. The solution is targeting embedded systems and industrial communication protocols.

This framework will integrate tools like Nmap, OWASP ZAP, and Modbus TCP Scanner to streamline the identification and resolution of security issues.

Additionally, it will provide automated workflows for conducting brute force and TLS DDoS tests, as well as SSL/TLS certificate validation and correction.

The tool will also support vulnerability analysis in communication protocols such as Ethernet, RS-485, and COM Optique, allowing for comprehensive and efficient security assessments.

REQUIRED THEORETICAL KNOWLEDGE:
- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:
- Embedded systems
- Cybersecurity

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer

Media&Energie-06. Embedded Gateway Configuration Service

FIELD:
Embedded App

DESCRIPTION:
Gateway Configuration Tool Focused on 3 Key Areas:
- Dashboard for Embedded Systems (ARM/aarch64) Development of an application that enables users to remotely configure home gateways. This dashboard would allow the configuration of network settings, firewall rules, DHCP settings, port forwarding, and much more on embedded devices. The application could have an offline mode, storing configurations locally and pushing them to the gateway once the connection is restored.

Dynamic Network Packet Analyzer: Development of a service that captures and analyzes network traffic in real time, providing insights into bandwidth usage, potential network threats, and protocol performance. Include a visualization interface displaying live traffic flow and statistics, using minimal resources.

Network Performance Monitoring Service: Development of a service that can be connected to a network to automatically test and report performance metrics (latency, packet loss). Add a feature that dynamically adjusts the type of network tests based on network conditions or user-defined criteria.

Technologies: Embedded Linux (ARM/aarch64), PrplOS, Buildroot & BusyBox, web interface (via a web server running on the embedded device), Linux networking tools (iptables, dnsmasq).

REQUIRED THEORETICAL KNOWLEDGE:
- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:
- Embedded systems, Embedded Web
- Networking,

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer

Media&Energie-07. AR-Enhanced WiFi Repeater Optimization and Placement Assistant

FIELD:
Augmented Reality

DESCRIPTION:
The app would leverage AR to assist users in finding the optimal location for WiFi repeaters to enhance network coverage and performance in their environment.

By using the camera and AR markers, the app could display real-time feedback on WiFi signal strength, visualize dead zones, and recommend the best placement spots for repeaters.

Features:
- AR-Based Signal Strength Visualization: Display the current WiFi signal strength overlaid on the user's camera feed, allowing them to see weak and strong spots in real-time.
- Optimal Repeater Placement Suggestions: Using signal analysis and algorithms, recommend ideal locations for repeater placement.
- WiFi Performance Monitoring: Continuously track the network's health and alert the user if a repeater needs to be repositioned.
- Interactive Guide for Setup: Provide an interactive AR setup guide that simplifies the installation and configuration of new repeaters.

REQUIRED THEORETICAL KNOWLEDGE:
- Excellent oral and written communication (eng/fr)
- Have a spirit of analysis and synthesis

REQUIRED PRACTICAL SKILLS:
- Mobile development
- Android, Augmented Reality

LOCATION
Tunis

DURATION
4-6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer


SPACE

SPACE-01. Satellite based smart grid meter

FIELD:
Aerospace, embedded IOT

DESCRIPTION:

For users in sparsely inhabited location where electrical grid Failure and authorized electrical grid access is possible smart grid meter are a necessicity to detect measure and govern all authorized/unauthorized distribution paths.

Using TELNET IoT satellite network combined with smart metering techniques the TELNET space R&D Department proposes the developpement of a satellite based smart grid meter capable of measuring power consumption and unauthorized grid access in remote areas

REQUIRED THEORETICAL KNOWLEDGE:

- Embedded system design
- Radio frequency communication
- FSK, LoRa Modulations
- Analyticalskills

REQUIRED PRACTICAL SKILLS:

- C/C++
- RF
- STM32, FreeRTOS
- Communication protocols I^2C, SPI, UART

LOCATION
Tunis

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Electrical engineer
IT engineer
Electronic engineer

SPACE-02. Space IoT based Earthquake Notification System

FIELD:
Aerospace, embedded IOT

DESCRIPTION:

The occurrence of Earthquakes causes serious damage to terrains and threatens the safety of people's properties and lives. However, due to the complex terrain environment, the changeable nature of soil, and the uncertainty/unavailability of measurements in remote areas, traditional earth quake detection methods are sometimes ineffective.

In this context TELNET Group Space Activity Department proposes a satellite based Earthquake Notification System based on a network of data collection IoT nodes capable of earthquake pre-detectionby seismic activities monitoring and authorities notification using the TELNET Satellite communication system

REQUIRED THEORETICAL KNOWLEDGE:

- Embedded system design
- Radio frequency communication
- FSK, LoRa Modulations
- Analyticalskills

REQUIRED PRACTICAL SKILLS:

- C/C++
- RF
- STM32, FreeRTOS
- Communication protocols I^2C, SPI, UART

LOCATION
Tunis

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Electrical engineer
IT engineer
Electronic engineer

SPACE-03. CubeSAT ADCS Simulator

FIELD:
Space, System control

DESCRIPTION:

A spacecraft's ADCS determines the orientation (attitude) of the spacecraft in orbit and will use actuators to maneuver it into the desired orientation. These systems have become important solutions for hardware-constrained small satellites that need the control to point antennas at ground stations and position solar arrays toward the sun.

In this prospect TELNET proposes the development of an ADCS simulator capable of emulating the ADCS response to the satellite's behavior in real time using Matlab/Simulink

REQUIRED THEORETICAL KNOWLEDGE:

- System design
- Orbital Mechanics
- System control
- System Automation

REQUIRED PRACTICAL SKILLS:

- C/C++
- Matlab/Simulink
- TCP/Ip

LOCATION
Tunis

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Electrical engineer
IT engineer
Electronic engineer

SPACE-04. Development of a Web Dashboard for Report generation for Satellite Operations and Passage data Management

FIELD:
Data Management, Web-Developpement

DESCRIPTION:

In the realm of satellite operations, efficient management and timely reporting are critical components for ensuring mission success. This streamlined approach not only enhances the monitoring of satellite activities but also fosters proactive decision-making, reduces operational risks, and ultimately optimizes resource allocation.

In this prospect, TELNET proposes the development of a specialized web dashboard for effective management of satellite operations and the generation of detailed reports on satellite passages alongside insightful analytics.

REQUIRED THEORETICAL KNOWLEDGE:

- Understanding of web development principles
- Familiarity with database management,
- knowledge of data analysis.

REQUIRED PRACTICAL SKILLS:

- Next.Js
- MongoDB
- nodeJs

LOCATION
Tunis

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer
IT engineer
Computer Science engineer

SPACE-05. Development of a Satellite-Based Smart Grid Meter Dashboard

FIELD:
Aerospace, Web-Developpement

DESCRIPTION:

In the realm of energy management for remote and sparsely inhabited regions, a groundbreaking project merges satellite technology with smart grid meters. This initiative revolutionizes power consumption monitoring and unauthorized grid access detection in areas with limited traditional infrastructure. By uniting innovative satellite-based solutions with smart metering techniques, a new era of enhanced energy governance and distribution is ushered in for challenging environments.

In this prospect, TELNET proposes the development of a comprehensive dashboard for monitoring power consumption and managing grid access in remote locations using satellite-based smart grid meters. The dashboard will offer real-time insights into energy usage, unauthorized grid access, and distribution paths, empowering efficient control and informed decision-making in the field of energy management.

REQUIRED THEORETICAL KNOWLEDGE:

- Understanding of web development principles
- Familiarity with database management,
- knowledge of data analysis.

REQUIRED PRACTICAL SKILLS:

- Next.Js
- MongoDB
- nodeJs

LOCATION
Tunis

DURATION
6 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Software engineer
IT engineer
Computer Science engineer

SPACE-06. Development of an Advanced Inventory Management System with QR Code Labeling for Space Team Operations

FIELD:

Inventory Management and Material Labeling Solution for Space Teams

DESCRIPTION:

This project focuses on creating a sophisticated inventory management system tailored for space teams.

The system will incorporate QR code generation for efficient material labeling, streamlined material reservation processes, and robust inventory tracking capabilities.

The objective is to enhance resource optimization and operational efficiency within the unique context of space missions.

REQUIRED THEORETICAL KNOWLEDGE:

- Web Development
- DataBase Systems
- QR Code Technology

REQUIRED PRACTICAL SKILLS:

- NodeJS, ReactJS
- MongoDB
- MySQL
- Required Theoretical Knowledge
- Web Development
- DataBase Systems
- QR Code Technology

LOCATION

Tunis

On-site or Remote

DURATION

4 months

 # OF INTERNS

1

EXPECTED DIPLOMA

Bachelor's degree in Computer Science
Bachelor's degree in Software Engineering

SPACE-07. Development of a Mobile Application for Streamlined Invoice Scanning and Purchase Tracking

FIELD:
Mobile Application for Invoice Scanning and Purchase Management

DESCRIPTION:

This project entails the development of a mobile application designed to scan, store, and manage invoices effectively.

Users can input total amounts, specify currency exchange rates, and select preferred currencies, with the app calculating cumulative totals for open purchase sessions.

The goal is to simplify purchase processes and financial tracking through a user-friendly mobile interface.

REQUIRED THEORETICAL KNOWLEDGE:

- Mobile Development
- DataBase Systems
- QR Code Technology

REQUIRED PRACTICAL SKILLS:

- Flutter, Cross-Platform
- Mysql
- MongoDB
- Android,IOS

LOCATION
Tunis
On-site or Remote

DURATION
4 months

 # OF INTERNS
1

EXPECTED DIPLOMA
Bachelor's degree in Computer Science
Bachelor's degree in Software Engineering

HOW TO APPLY

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