# **Group Project**

This project guides you through a **comprehensive IT analysis and improvement plan** for a real-world company. Over weeks, student teams will evaluate their assigned company's **IT infrastructure, software systems, security risks, and compliance challenges** while considering industry best practices. The project begins with **team formation and industry research**, followed by in-depth **IT system analysis, risk assessments, ethical and legal considerations, and project management evaluation**. Students will then **propose IT enhancements, address change management challenges, conduct ethical hacking tests, and compile their findings into a professional report**. The final deliverable is a **polished IT evaluation report** with actionable recommendations, preparing students for real-world IT consultancy and project management roles.

# **Requirements**

First, you will select an Industry/category of a company from the provided list; based on that, imagine a company or select a real-life company. You need to identify the **IT problem/weakness** in that company and suggest a solution using **software** (from the provided list) to improve its IT infrastructure. Mention the identified problem in week 3 activity.

You will focus on a specific aspect of the project each week, gradually building towards the final presentation and report. Ultimately, you must compile all week-wise activities (using the given templates) to draft a final report. In the final report, the contribution summary of the members is given on the first page. A sample template report for each week is provided on Canvas; however, you can also use your template. **You need to submit a final report (by compiling week-wise report templates) report on the Canvas in week 11.**

You must paste each week's activity output (using a week-wise template) on **Team Work Space on Canvas** (Your tutor will guide you; remember that it is other than a final report submission in week 11). When you paste each week’s activity output to Canvas Team Work Space, also provide details about **members' contributions**.

**Examples:**

**Sample 1 (complete sample is available on Canvas)**

**Project Title:** **Enhancing Cybersecurity in a Financial Institution Using Palo Alto Firewalls**  
**Industry:** **Banking & Finance**  
**Company:** **Fictional Bank (SecureBank)**  
**Software/System:** **Palo Alto Firewalls for Network Security**  
**Group Members:** 5 Students  
**Duration:** 11 Weeks

**Weekly Deliverables and Sample Solutions**

**Week 1: Team Formation & Topic Allocation**

**Deliverable:**

* Team registration and assigned topic: **Cybersecurity in Banking using Palo Alto Firewalls.**
* Initial research on **SecureBank’s IT environment.**

**Sample Solution:**  
SecureBank is a mid-sized financial institution facing cybersecurity challenges due to increased cyber threats (**Problem/weakness**). The bank uses **on-premises and cloud-based services** but lacks **robust network security** measures. Palo Alto Firewalls (**Software as a solution**) is identified as the best solution for **intrusion prevention and network segmentation**.

**Sample 2 (complete sample is available on Canvas)**

**Industry:** **Retail & E-Commerce**  
**Company:** **FastTrack Retail (Fictional)**  
**Software/System:** **SAP ERP for Supply Chain Management**  
**Group Members:** 5 Students  
**Duration:** 11 Weeks

**📅 Weekly Deliverables and Sample Solutions**

**Week 1: Team Formation & Topic Allocation**

📌 **Deliverable:**

* Team assigned to **FastTrack Retail – SAP ERP Implementation**.
* Initial research on **company's supply chain challenges**.

🎯 **Sample Solution:**  
FastTrack Retail is an e-commerce company specializing in **fast delivery services**. Due to **poor inventory visibility** and **manual order processing**, they face frequent **delays and stockouts**. Implementing **SAP ERP** can automate **inventory tracking, supplier management, and demand forecasting**.

So, as a solution, you will carry out all week-wise activities given below:

# Week wise activities

**Week 3: Team Formation & Topic Allocation**

**Deliverable:**

* Register team members (5 students per group) and fill and approve Team capability report, you can download the Sample for Team capability report from canvas
* Receive **assigned company** & **software/system**.
* Conduct **initial research** on the company’s IT landscape.

**Outcome:**

* Team Profile and Capability Assessment Template

**Week 4: Research on Industry Best Practices**

**Deliverable:**

* Investigate **industry standards and regulations** for IT practices.
* Identify **common IT challenges** in the company’s industry.

**Outcome:**

* Understanding of ethical and professional responsibilities in IT.
* Recognizing common IT governance and compliance issues.

**Week 5: IT Infrastructure & Software Analysis**

**Deliverable:**

* Document **existing IT infrastructure** used in the company.
* Identify **current software** and its role in business operations.
* Assess **strengths & weaknesses** of the current system.

**Outcome:**

* A **detailed IT systems map** for the company.
* Identification of **gaps and inefficiencies** in IT practices.

**Week 6: Risk Assessment & Security Concerns**

**Deliverable:**

* Conduct a **risk assessment** of IT security in the company.
* Identify **potential vulnerabilities** (cybersecurity threats, data breaches, compliance risks).
* Research **security best practices** for similar organizations.

**Outcome:**

* Understanding of **risk management frameworks** in IT.
* Awareness of **legal and ethical responsibilities** in IT security.

**Week 7: Ethical & Legal Considerations**

**Deliverable:**

* Investigate **ethical concerns** related to IT use in the company.
* Review **privacy laws, GDPR, data security regulations**.
* Identify **any unethical IT practices** (e.g., surveillance, employee monitoring, AI biases).

**Outcome:**

* Awareness of **professional ethics** in IT.
* A list of **legal regulations** applicable to the case study.

**Week 8: IT Project Management & Software Development Lifecycle**

**Deliverable:**

* Analyze the company’s **IT project management approach**.
* Compare with **Agile, Scrum, Waterfall** methodologies.
* Evaluate how **software updates, patches, and releases** are managed.

**Outcome:**

* Understanding of **SDLC (Software Development Lifecycle)**.
* Identification of **project management gaps**.

**Week 9: Proposal for IT Improvements**

**Deliverable:**

* Draft a **proposal** for upgrading the IT system.
* Suggest **alternative software solutions** (e.g., switching from on-premise to cloud-based solutions).
* Outline **budget considerations and ROI (Return on Investment)**.

**Outcome:**

* A **clear business case** for improving IT practices.
* Technical feasibility of new IT solutions.

**Week 10: Implementation Challenges & Change Management**

**Deliverable:**

* Identify **potential resistance** to IT change.
* Propose a **change management strategy**.
* Assess **employee training needs** for new technology adoption.

**Outcome:**

* A **change implementation plan** with training recommendations.
* Awareness of **organizational behavior in IT adoption**.

**Week 11: Ethical Hacking & Testing the System**

**Deliverable:**

* Conduct a **basic security audit** using ethical hacking principles.
* Identify **potential software/system vulnerabilities**.
* Suggest **cybersecurity solutions** (e.g., penetration testing, multi-factor authentication).

**Outcome:**

* A **security assessment report** with recommendations.
* Understanding of **penetration testing in IT security**.
* Combine all the week-wise activities into a **professional IT report and submit to the Canvas** .

**Project Topics**

Each project will have **two key components, so pick the company first and then the relevant software**:

1. **Industry Sector / Company Type**
2. **Software / System Under Review**

**Industry Sectors (30 Examples, you can bring your own as well)**

1. Banking & Finance
2. Healthcare
3. Retail & E-Commerce
4. Logistics & Supply Chain
5. Government IT
6. Manufacturing
7. Telecommunications
8. Education
9. Hospitality & Travel
10. Cybersecurity Consulting
11. IT Helpdesk Services
12. Social Media & Marketing
13. Real Estate & Property Management
14. Cloud Computing Firms
15. AI & Machine Learning Startups
16. Video Game Development
17. Automotive IT Systems
18. Insurance & Risk Management
19. Renewable Energy & IT
20. Internet Service Providers
21. Entertainment & Media
22. Sports Analytics & IT
23. E-learning Platforms
24. FinTech Companies
25. Smart Cities & IoT
26. HR & Employee Management Systems
27. Cryptocurrency & Blockchain
28. Cyber Forensics & Investigations
29. Data Analytics & Big Data
30. Augmented Reality (AR) & Virtual Reality (VR)

**Software / IT Systems (7 Categories)**

1. **ERP (Enterprise Resource Planning) Software**
   * SAP ERP, Oracle ERP, Microsoft Dynamics
2. **CRM (Customer Relationship Management) Software**
   * Salesforce, Zoho CRM, HubSpot
3. **Cloud & AI Solutions**
   * AWS Cloud, Google Cloud, Microsoft Azure AI
4. **Cybersecurity Software**
   * Palo Alto Firewalls, Cisco Security, McAfee Enterprise
5. **Project Management & Collaboration Tools**
   * Jira, Trello, Monday.com, Asana
6. **HR & Payroll Management Software**
   * Workday, ADP Payroll, BambooHR
7. **Industry-Specific Solutions**
   * Epic Healthcare (for hospitals), Shopify (for e-commerce), Unity (for gaming)

Each group will be assigned **a unique combination of industry + software**.