Experiment No: 1

Aim

Case study on project and system management.

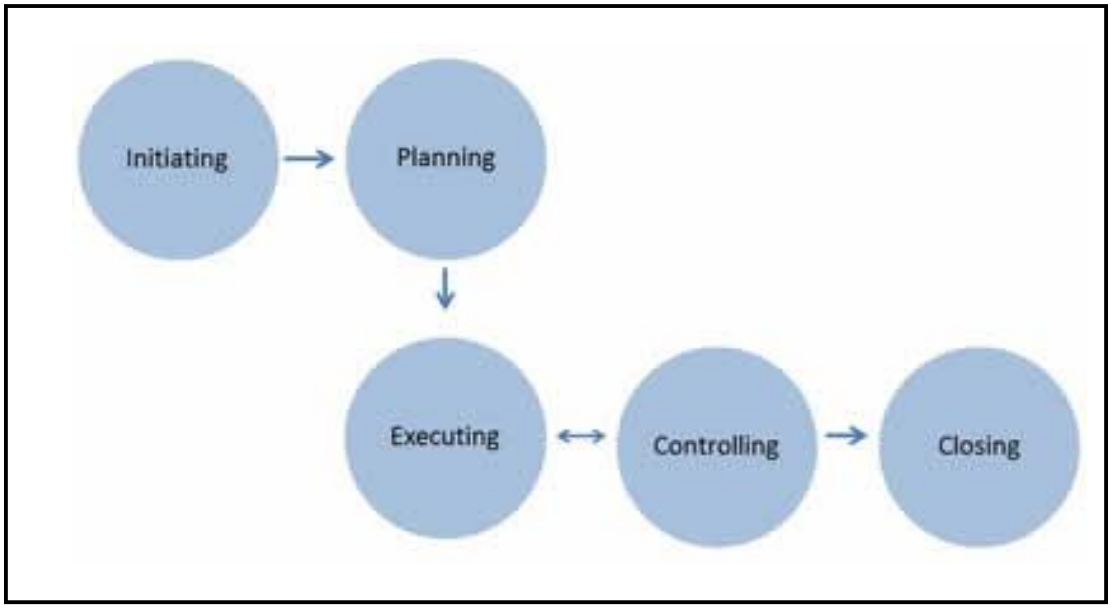
Introduction:

Project management is the application of processes, methods, knowledge, skills and experience to achieve the project objectives.

A project is a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits. A project is usually deemed to be a success if it achieves the objectives according to their acceptance criteria, within an agreed timescale and budget.

A key factor that distinguishes project management from just 'management' is that it has this final deliverable and a finite timespan, unlike management which is an ongoing process. Because of this a project professional needs a wide range of skills; often technical skills, and certainly people management skills and good business awareness.

Steps of Project Management:



1. Project Initiation

Initiation is the first phase of the project lifecycle. This is where the project's value and feasibility are measured. Project managers typically use two evaluation tools to decide whether or not to pursue a project:

Business Case Document – This document justifies the need for the project, and it includes an estimate of potential financial benefits.

Feasibility Study – This is an evaluation of the project's goals, timeline and costs to determine if the project should be executed. It balances the requirements of the project with available resources to see if pursuing the project makes sense.

2. Project Planning

Once the project receives the green light, it needs a solid plan to guide the team, as well as keep them on time and on budget. A well-written project plan gives guidance for obtaining resources, acquiring financing and procuring required materials. The project plan gives the team direction for producing quality outputs, handling risk, creating acceptance, communicating benefits to stakeholders and managing suppliers.

3. Project Execution

This is the phase that is most commonly associated with project management. Execution is all about building deliverables that satisfy the customer. Team leaders make this happen by allocating resources and keeping team members focused on their assigned tasks.

Execution relies heavily on the planning phase. The work and efforts of the team during the execution phase are derived from the project plan.

4. Project Monitoring and Control

Monitoring and control are sometimes combined with execution because they often occur at the same time. As teams execute their project plan, they must constantly monitor their own progress.

To guarantee delivery of what was promised, teams must monitor tasks to prevent scope creep, calculate key performance indicators and track variations from allotted cost and time. This constant vigilance helps keep the project moving ahead smoothly.

5. Project Closure

Teams close a project when they deliver the finished project to the customer, communicating completion to stakeholders and releasing resources to other projects. This vital step in the project lifecycle allows the team to evaluate and document the project and move on the next one, using previous project mistakes and successes to build stronger processes and more successful teams.

Although project management may seem overwhelming at times, breaking it down into these five distinct cycles can help your team manage even the most complex projects and use time and resources more wisely.

Benefits of Project Management:

- **Improved Efficiency**
  Enabling a project manager to accurately determine the requirements of a project and to assess the available resources and make best use of those resources. This ensures the scope, schedule and budget are accurately set from the start.

- **Enhanced Confidence**
  Learning about how to identify risks in projects, and how to manage, them helps build a project manager's confidence and ability to manage projects effectively.

- **Consistent Delivery**
  Confident, efficient project managers who are able to deal effectively with risks will consistently and reliably deliver successful projects avoiding wasted time, effort and money.

- **Customer satisfaction**
  When the tools and techniques are used to deliver projects reliably; deliver what was required and within budget then the customer will be satisfied.

- **A Fresh Perspective**
  Experienced project managers can improve their PM knowledge with new techniques but can also simply learn to approach a familiar scenario with a new perspective.

- **Behavioral Changes**
  Project Management is not just about experience, tools and techniques but also learning how to influence others and resolve conflict.

Problem Statement

Nowadays, the current penetration testing and hacking tools such as conventional Wi-Fi PineAP are being modified to be made more advanced due to current security needs and policies. This modification has led to a significant increase in the cost of such tools and more man power is required to carry out such tasks by professionals.

With our automated network penetration device/bot we'll be able to perform major operations through the means of an automated scripts with built-in failsafes which can be performed by any professional ethical hacker. This ensures that routine jobs are performed more precisely as compared to any hired professional, thus, eliminating the threat of man-made errors.

Objectives

- Develop a system that can replace the conventional penetration testing system.
- Develop a tool which analyses incoming and outgoing traffic.
- Perform tests to eliminate vulnerabilities.
- Create an easy user interface for users to trace and perform tests.
- Help perform attacks like Man-in-the-Middle, eavesdropping, etc.
- Combined with social engineering for better results.

Existing System

- In the existing the professional has to manually monitor all the traffic and generate reports.
- Wi-Fi PineAP is considerably costly and is thus, avoided by small-scale organizations.
- Not fully automated.

Proposed System

SpyD is an automated network penetration device which will perform all major operations through the means of an automated script with built-in failsafe which can be performed by any professional hacker, thus, providing automation at a lower cost and eliminating any man made errors at the same time.

SpyD aims at providing an automated solution towards the previously used network scanners and packet sniffers like Nmap, Aircrack-NG, and Tcpdump.

Functional Requirement

Hardware specification

- Network interface card (WLAN)
- Wi-Fi Radio which allows monitoring and injection.
- USB powered or built-in battery
- Processor: Intel i5, or any other equivalent processor.

Software specification

- Operating System: Windows 8.1 or above.
- Automation tool: NMap, Karma
- Report generation tools like forms, docs, etc.

Non Functional Requirements

•Usability Requirement

The system shall allow the users to access the system from the Application and the Hardware device.

•Availability Requirement

The system is fully functional and available to the users at all times.

•Performance Requirement

The system performs with the same efficiency as the conventional tools at a comparatively lower cost frame.

•Reliability Requirement

The system is completely reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. All the generated reports can be trusted.

Conclusion

Hence, project and system management has been thoroughly studied.