Software Quality and its Importance

- Software quality refers to the degree to which a software program meets the user's expectations and requirements.
- It encompasses factors such as functionality, reliability, usability, performance, and maintainability.

It saves time and money. Software quality assurance ensures that the developers find bugs and errors at the early stages of software development. Therefore, they spend a lot less time and money fixing them.

Stable and competitive software product. Software architects specifically vet each block in the software development process against industry standards. Granular testing for different requirements like reliability, functionality, usability, portability, etc., helps ensure that their product is high-quality.

Protects your company's reputation. Businesses need to ensure that their product works as intended before releasing into the market. If the customers notice the product's errors before you do, it will significantly impact your brand image and reputation.

Ensures security. Software quality assurance helps organizations ensure that their application is efficient, secure, and trustworthy.

Customer satisfaction. Your software application has to fulfill all the needs to satisfy the customers. It has to work smoothly without any malfunctions. With software quality assurance processes in place, you can ensure that your product delivers everything that your audience expects.

Strategies for developing quality software

Requirements gathering and analysis: A thorough understanding of the user requirements is crucial for delivering high-quality software. This involves collecting and documenting requirements from stakeholders, and then analyzing them to identify potential challenges and risks.

Test-driven development: This approach involves writing tests before writing the actual code, ensuring that the software meets the requirements and works as intended.

Code review: Regular code reviews by peers help to identify and fix potential issues before they become problems.

Automated testing: Automated tests can be run frequently, providing quick feedback on the software's functionality and quality.

Continuous integration and continuous delivery: This approach involves continuously integrating code changes, testing them, and delivering the software frequently, reducing the risk of bugs and improving the software's overall quality.

Performance and load testing: This involves testing the software's performance under various conditions to identify and resolve performance issues.

Security testing: Security testing involves identifying and mitigating potential security vulnerabilities in the software.

Communication is key

Have a Risk Registry – identify risks, nature of risks

Use Of Contingent Workers

- A contingent worker is a worker who is hired on a temporary or fixed-term contract basis to provide specific services for a specific project or period of time.
- Contingent workers are not employees and, therefore, do not receive the same rights and benefits as permanent employees.
- A contingent worker does not receive paid time off or health insurance, pays their own taxes and Social Security and often has limited interaction with the services and communications provided to employees.
- Once a contingent worker's contract ends, they will leave the organization, unless they are given a new contract or contract extension.
- Any extension or new contract will be similar in nature to other contracts issued to them.
- Examples of contingent workers include the following:
  - **Independent contractors**. Individuals who operate through a company and provide specific work products, such as construction workers or accountants.
  - **Freelancers.** Self-employed individuals, such as journalists and photographers.
  - **Consultants.** Individuals who operate through a company and provide specialized or expert advice and services, such as IT consultants or management consultants.

Benefits

Increased flexibility: Contingent workers can be hired on a project-by-project basis, allowing organizations to quickly scale up or down as needed.

Access to specialized skills: Contingent workers often bring specific skills and expertise that can be hard to find in a traditional full-time employee.

Reduced costs and time: Hiring contingent workers can be more cost-effective compared to hiring full-time employees, as organizations do not have to provide benefits, insurance, or other perks.

Improved efficiency: Contingent workers can provide additional resources to complete projects or tasks more efficiently, without having to go through the hiring process for a full-time employee.

Increased innovation: By bringing in new perspectives and skills, contingent workers can help organizations stay competitive and generate new ideas.

H-1B Workers

- They are is a temporary (nonimmigrant) worker that are employed in the U.S in a "specialty occupation".
- Require at least a bachelor's degree or the equivalent
- Jobs in fields such as mathematics, engineering, technology, and medical sciences often qualify
- Typically, the initial duration of an H-1B visa classification is three years, which may be extended for a maximum of six years.
- Before an employer can file a petition with USCIS, the employer must take steps to ensure that hiring the foreign worker will not harm U.S. workers.
  - Employers first must attest, on a labor condition application (LCA) certified by the Department of Labor (DOL), that employment of the H-1B worker will not adversely affect the wages and working conditions of similarly employed U.S. workers.
  - Employers must also provide existing workers with notice of their intention to hire an H-1B worker.
- The H-1B visa program has been a controversial topic in recent years, with some arguing that it allows U.S. companies to hire foreign workers at lower wages, while others argue that it allows organizations to access the highly skilled talent, they need to remain competitive in the global market.
- However, the number of H-1B visas granted each year is limited, and the demand for these visas is often much higher than the supply. As a result, obtaining an H-1B visa can be a competitive and complex process.

Outsourcing

- Outsourcing is the process of obtaining goods or services from an external company or individual, rather than producing them internally.
- Outsourcing can take many forms, including outsourcing of specific business processes, outsourcing of entire functions, or outsourcing of entire business units.

Benefits

- **REDUCED RISKS**
- **Focus on core business**

Disadvantages of outsourcing

- Loss of control
- Negative impact on staff
- Data protection and confidentiality risks
- Lack of consistency
- Financial and reputation risks
- Increase dependency

WHISTLE-BLOWING

- Whistleblowing normally has been identified as an action taken by an employee, alerting society to potential or actual damage to the public as a result of present or future actions of the firm.
- It is an effort to attract public attention to a negligent, illegal, unethical, abusive, or dangerous act by an individual or organization.

Types of Whistleblowing

Internal Whistleblowing -is when an employee will first try to notify their superiors of whatever wrongdoing is occurring. The employee will follow the proper channels to notify the upper management in order for their complaint to be heard.

External Whistleblowing -is when an employee will notify the media, public interest groups, or regulatory agencies rather than the management of the firm they work for.

Dealing with a Whistle-Blowing Situation

1. **Assess the Seriousness of the Situation**
   - Before considering whistle-blowing, a person should have specific knowledge that his or her company or a co-worker is acting unethically and that the action represents a serious threat to the public interest.
   - seek trusted resources outside the company and ask for their assessment.
   - Do they also see the situation as serious? Their point of view may help the employee see the situation from a different perspective and alleviate concerns.
2. **Begin Documentation**
3. **Attempt to Address the Situation Internally**
4. **Consider Escalating the Situation Within the Company**
   - escalation occurs when there is an issue that the current staff working on the problem can't resolve and requires assistance from those with more authority and resources.
   - The employee's initial attempt to deal with a situation internally may be unsuccessful.
5. **Assess the Implications of Becoming a Whistle-Blower**
   - Given the potentially high price, do I really want to proceed?
   - Have I exhausted all means of dealing with the problem? Is whistle-blowing all that is left?
6. **Use Experienced Resources to Develop an Action Plan**
7. **Execute the Action Plan**
   - If the whistle-blower wants to remain unknown, the safest course of action is to leak information anonymously to the press. however, is that anonymous claims are often not taken seriously. In
   - Most cases, working directly with appropriate regulatory agencies and legal authorities is more likely to get results
8. **Live with the Consequences**

Why Employees should "blow the whistle

- **Whistle blowers keep businesses honest.**
  they keep businesses from committing illegal activity, which protects local populations and environments.
- **They keep good work environments.**
  Whistleblowing allows communication between low level employees and their managers.
- **It will allow employees to keep not only the company but themselves in check. Which will create a stable work environment**

Cons

1. **Your job/career may be threatened**

It is the case that an employee who brings A whistleblowing claim or otherwise provides information to the government can face retaliation from an employer and may have difficulty in getting hired in related fields going forward.

2. There are cases involving employees who blew the whistle as an act of revenge against their employer or supervisor

3. Conflict of interest

For many whistle-blowers, the conflict of interest between serving one's company, co-worker and friends and the protecting the public is very real and challenging.

Green computing

Green computing refers to the study and practice of designing, developing, using, and disposing of computers, servers, and associated subsystems such as monitors and printers in an environmentally-friendly manner. The goal of green computing is to minimize the environmental impact of computing while maximizing efficiency and performance.

Examples of green computing practices include:

Energy-efficient hardware design: This involves designing computer hardware components and systems that use less energy while maintaining or improving performance.

Virtualization: Virtualization allows multiple operating systems and applications to run on a single physical server, reducing the need for multiple physical devices and thus reducing energy consumption and waste.

Cloud computing: Cloud computing allows organizations to access computing resources over the internet, rather than having to maintain their own physical computing infrastructure. This can reduce energy consumption and waste by centralizing computing resources.

Recycling and disposal: This involve properly disposing of electronic waste, such as computers and monitors, in an environmentally responsible manner, to minimize the impact on the environment.

Power management: This involves reducing the energy consumption of computer systems and devices when not in use, for example, by using power-saving modes or automatically turning off devices when not needed.