**Quality:** Quality assurance is about ensuring that development processes are correct and complete, and the deployed product fulfills customer requirements.

**Why good Quality?**

Neglecting quality assurance will impact the end user.

Teams that fail to adequately test their product can lose time, money, and customers

**Quality Attributes:**

Quality consists of many aspects, ranging from the technical to the aesthetic characteristics of the product

**Functionality**: How well the application is working according to its specifications

**Availability**: Amount of time the application is available to users, fully functional

**Performance:** How quickly and accurately the application completes required functions.

**Testability:** How easily developers and testers can test the application

**Security:** Security features and requirements necessary to protect company and user data—from possible breaches or catastrophic losses.

**Usability:** How easy is the application to use

**Reliability:** Application's capacity to continue operating under specified conditions for a certain amount of time.

**Components of Quality**

Testing is one aspect of quality control

Both testing and quality control fall under the broader category of quality assurance.

A picture containing diagram

Description automatically generated

**Quality Assurance:**

It is a process that monitors each phase of a software product’s life cycle, from development to delivery.

The goal of quality assurance is to ensure the product works according to client specifications

QA focuses on the processes related to planning and maintaining the requirements of a software application, client specifications, and user experience.

**Quality Control:**

Quality control is part of quality assurance.

While quality assurance focuses on the holistic success of the development process, quality control ensures the quality of the software application itself.

The purpose of quality control is to resolve any problems your team identifies through testing or other means.

**Testing**

Software testing is an important aspect of quality control.

The purpose of testing is to ensure that the product is functioning according to technical specifications and requirements, such as functionality or client security standards, and is free of defects

**Benefits of Software QA:**

**Product Quality**: Quality of product will be better with less defects to the end user

**User Experience**: User will have better experience with better testing in place and less bugs

**Types of testing:**

Text

Description automatically generated with medium confidence

Graphical user interface, text, application, email

Description automatically generated

**Testing Methods:**

**White Box testing:** Testing based on an analysis of the internal structure of the component or system

**Black box testing:** This testing is focused only on the interface and does not test the internal structure of the software.

**Grey box testing:** It is a hybrid of white box and black box testing that requires engineers to have access to the database and design documentation

Grey box testing provides a more user experience–centered test.

**Test Plan:** This should be part of documentation that a team maintains for testing. Test plan should include Test plan focuses on the “what” and the “when” of testing

A project-specific impact on testing

The scope of testing

Quality and acceptance criteria

Risk Management

The test team, test schedule, and test deliverables

**Test Strategy:** The test strategy addresses the “how.” Test strategy should include

How the team will organize testing

Which testing types will be in scope to address product risks

Which test design and execution approaches the team will use for a particular testing type