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Learning Aim A

Understand the software development and testing methodologies commonly used during the development life cycle to quality assure software.

UNIT 13 SOFTWARE TESTING

Assignment 1

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# Introduction

Throughout this unit I will explore the importance of software testing and development process as well as different types of testing the tools and techniques used to perform them. In this paper I will be focusing on the fundamental principles of software testing. This paper will aim to document the various types of testing, their significance in the software development life cycle, and the importance of using different testing tools and techniques in order to ensure that the quality of the final product is maintained. Finally, this paper will also document use cases of different testing methodologies.

# User requirements and typical software job roles

## User requirements

The user requirements of the specific needs, wants, and expectations of the stakeholders who will be using the software system. Understanding these requirements, such as through gathering or defining them, is a vital step in the software development life cycle. This is due to the fact that it ensures the software system is designed undeveloped with its initial intended audience at the forefront of development.

From the perspective of a software tester, it is crucial to have an in depth understanding over the user requirements. This will ensure that when software testing, the software tester will be able to ensure that the software is meeting the user requirements. Furthermore an in depth understanding of the user requirements would allow the software tester to review and analyse them, giving them the opportunity to identify any potential issues or conflicts and raising these issues with the development team.

Finally an in depth understanding of user requirements will aid in identifying the scope of testing, such as how complex or critical the testing should be of the software, and therefore help in developing appropriate testing strategies for the software. Through the identification of different parts of the software such as features, functions, or other relevant aspects the end users might interact with, the software tester can develop different test cases that will aid in the applicable use cases and scenarios.

## Typical job roles

### Software developers

One typical job role in a software development team is a software developer. Among others, some of the job responsibilities of a software developer include:

* Developing software applications, this is where software developers design, develop, and maintain software through the use of different tools such as programming languages and other available development tools.
* Write and maintain code, This is why software developers writing and maintain code from the software applications that will later be used in testing.

Some typical skills of a software developer include:

* Programming skills
* Problem solving skills
* Communication skills
* Attention to detail
* Time management skills
* Adaptability

A combination of all of these things allow software developers to play a vital role in the software development life cycle, including job duties like designing, developing, and maintaining the software applications that they create.

### Testers

### Business analysts

### Project managers

### Product owners

# Characteristics of common software testing methodologies

## Unit testing

## Acceptance testing

## Functional testing

## Performance testing

## Security testing

## Regression testing

## Stress testing

## Usability testing

# Features of testing for different software development methodologies

## Agile testing methodology

## Waterfall testing methodology

## Kanban testing methodology