1. **Learning Objectives**
   1. **Primary Objectives**
2. To contribute to quality assurance of projects.
3. To manage work to meet requirements.
4. To work effectively with colleagues
5. To established interest in industrial/commercial activities.
6. To gain work experience enabling the student to apply what he learnt in college and acquire new skills.
   1. **Secondary Objectives**
7. Fundamentals of Testing.
8. Testing Throughout SDLC.
9. Static Techniques.
10. Test Design Techniques.
11. Test Management.
12. Tools Support.
13. **WEEKLY OVERVIEW OF OJT ACTIVITIES**

|  |  |  |  |
| --- | --- | --- | --- |
| **WEEK NO** | **DATE** | **DAY** | **NAME OF THE TOPIC/MODULE COMPLETED** |
| **WEEK NO - 1** | 05-10-2021 | Tuesday | What is software/software testing |
| 05-10-2021 | Tuesday | Need of software testing |
| 05-10-2021 | Tuesday | Seven Principle of Testing |
| 06-10-2021 | Wednesday | Psychology of Testing |
| 06-10-2021 | Wednesday | Code of Ethics |
| 07-10-2021 | Thursday | Fundamental Test Processes |
| 07-10-2021 | Thursday | Test Planning |
| 07-10-2021 | Thursday | Test Specification |
| 07-10-2021 | Thursday | Test Execution |
| 07-10-2021 | Thursday | Test Recording |
| 07-10-2021 | Thursday | Test Completion |
| 08-10-2021 | Friday | What is SDLC |
| 08-10-2021 | Friday | What is STLC |
| 08-10-2021 | Friday | SDLC Models - Waterfall, Spiral, V, Agile |
| 09-10-2021 | Saturday | How to derive expected result |
| 09-10-2021 | Saturday | Test Case format |
| 09-10-2021 | Saturday | Important aspects of Test Cases |
| 09-10-2021 | Saturday | Software testing Levels & Types |
| 09-10-2021 | Saturday | Maintenance Testing |
| 09-10-2021 | Saturday | Software Quality - QA (Static) & QC (Dynamic) |
| 09-10-2021 | Saturday | Review Process |
| 09-10-2021 | Saturday | Tools |
| **WEEK NO - 2** | 11-10-2021 | Monday | Testing Methods Black box |
| 11-10-2021 | Monday | Black box techniques |
| 11-10-2021 | Monday | Decision Tables |
| 11-10-2021 | Monday | White box testing |
| 11-10-2021 | Monday | Grey box testing & comparison |
| 12-10-2021 | Tuesday | Test Organisation |
| 12-10-2021 | Tuesday | Test Estimation |
| 12-10-2021 | Tuesday | How to decide priority |
| 12-10-2021 | Tuesday | Test Monitoring & Control |
| 12-10-2021 | Tuesday | Test Progress |
| 12-10-2021 | Tuesday | Configuration Management |
| 13-10-2021 | Wednesday | Risk & Testing |
| 13-10-2021 | Wednesday | What is defect |
| 13-10-2021 | Wednesday | Defect Priority & Severity |
| 13-10-2021 | Wednesday | Defect Life Cycle |
| 13-10-2021 | Wednesday | Attributes of defect |
| 14-10-2021 | Thursday | Stubs & Drivers |
| 14-10-2021 | Thursday | Types of Test Tools |
| 14-10-2021 | Thursday | Effective Use of Tools |
| 14-10-2021 | Thursday | Introducing Tool into Organisation |

1. **Introduction**

This Year’s OJT was on QA Engineer and to learn the role of QA Engineer, I learnt a lot of skills like Scenarios Writing, Test Cases, Test Management, Defect logging, Testing, Test Leading, Bug Reporting and FRS. As all of them were new skills for me they were quite challenging but, at the end, I managed to understand them properly thanks to our excellent lecturer Mr. Shashikant Karulkar.

On-the-job training (OJT) is training that is delivered while an individual is performing tasks or processes related to their particular occupation. The student typically performs tasks that are essential to their job function with the supervision of a manager, coach or mentor. This type of training is typically used to broaden a student’s skill set and to increase productivity.

On-the-job training is an important topic of human resource management. It helps develop the individual and the prosperous growth of the organization. On the job training is a form of training provided at the workplace. During the training, employees are familiarized with the working environment they will become part of organization. Employees also get a hands-on experience using machinery, equipment, tools, materials, etc. Part of on-the-job training is to face the challenges that occur during the performance of the job. An experienced employee or a manager is executing the role of the mentor who through written or verbal instructions and demonstrations are passing on his/her knowledge and company-specific skills to the new employee. Executing the training on at the job location, rather than the classroom, creates a stress-free environment for the employees. On-the-job training is the most popular method of training not only in the United States but in the most of the developed countries, such as the United Kingdom, China, Russia, etc. Its effectiveness is based on the use of existing workplace tools, machines, documents and equipment, and the knowledge of specialists who are working in this field. On-the-job training is easy to arrange and manage and it simplifies the process of adapting to the new workplace. On-the-job training is highly used for practical tasks. It is inexpensive, and it doesn’t require special equipment that is normally used for a specific job. Upon satisfaction of completion of the training, the employer is expected to retain participants as regular employees.

1. **OJT Discussion**

**Subsection 4.1: How the Objectives were achieved?**

The objectives were achieved by performing the job-related activities in a timely and systematic manner.

1. First, an introduction given about software testing.
2. Why software testing necessary – performed some activities like writing scenarios on ATM machine.
3. Introduction was given about test planning, test specification, test execution.
4. Activities related writing scenarios, execution, bug reporting were performed.
5. Introduction was given about white box, black box, grey box testing techniques.
6. Contribute to quality assurance of project.
7. Provide data/information in standard formats.

**Subsection 4.2: What skills were acquired as per the job role QP during the OJT?**

**4.2.1 What is software testing?**

1. Computer software or just software is any set of machine-readable instructions that directs computers processor to perform specific operations.
2. Software is a set of programs, which is design to perform a well-defined function. A program is a sequence of instruction written to meet a particular requirement.
3. In other words, Computer software is a set of instructions in the form of programs, procedures, functions, data etc. executed to meet desired requirements.
4. IEEE Definitions –
5. Software testing is the process of analysing a software item to detect the differences between existing and required conditions (that is bugs) and to evaluate the features of the software item.
6. Reliability is the ability of a system or component to perform its required functions under started conditions for specified period of time.
7. Software testing can also be started as the process of validating and verifying that a software program/application/product:
8. Meets the business and technical requirements that guided its design and development.
9. Works as expected.
10. Can be implemented with the same characteristics.
11. Testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test.
12. Testing involves any activity aimed at evaluating an attribute or capability of a program or system and determining that it meets its required results.

**4.2.2 Need of software testing**

1. Anything and everything created by humans is prone to have faults and defects. Some errors/faults do not have any severe impact but some faults are critical, which acts as a show-stopper, or will break the whole system.
2. So, in such cases it is important that all such high severity defects/faults are detected and resolved in advance, before the s/w is launched or implemented.
3. Perfection is very difficult.
4. People make errors, Errors can cause problems.
5. Deliverables can be defective.
6. Defects can cause failures; Failure can be a big problem.
7. To Err is human.
8. Error - mistake made, we are not perfect.
9. Fault - the result of an error. Also commonly known as bugs or defects.
10. Failure - the result of wrong behaviour, deviation from the expected.
11. The solution is to TEST (validate) at each stage.
12. Unfortunately, nobody is perfect and we all make mistakes. Sometimes this can be a misunderstanding of what is required of us, we are working under pressure such as delivery deadlines or sometimes we just get it wrong! Errors made early have a nasty habit of growing and getting worse.
13. If errors are present in software, they may cause problems immediately but they can also lie dormant and it may take a while before they surface. When errors have been made and lie undiscovered, the delivered software will be defective, which can lead to failures, which could mean severe problems for the business.
14. E.g. A leading supermarket chain had a '2 for 1' promotion on a hair conditioner. A customer noticed that when she had purchased two conditioners, not only had she only been charged for one of them, but also £3.50 had been deducted from her bill. She performed some further 'research' and discovered that for every one of the special purchases, £3.50 was deducted from the final bill.

Over the next days the woman visited all of the supermarket branches in her area and cleared Ore shelves of the conditioners. She estimated she saved herself £1000 ! This was caused by absence of a simple validation in software