Loknete Hon. Hanmantrao Patil Charitable Trust's

ADARSH INSTITUTE OF TECHNOLOGY AND RESEARCH CENTRE ,VITA

MSBTE- 0991

AITRC

FIVTH SEMESTER

(Year: 2023-24)

Micro Project

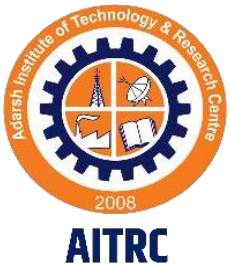
Software Testing (22518)

Title of the Project: Different Testing Tools
Branch: Computer Technology (CM5I)

Members of the Group:

Sr. No.	Name of Student	Roll No.
01	Mulla Asiya Umarfaruk	3133
02	Deepak Nikam Laxman	3134
03	Arman Ikbal Jamadar	3135
04	Satyajeet Laxman Mahind	3136

Loknete Hon. HanmantraoPatil Charitable Trust's
Adarsh Institute of Technology & Research Centre Vita,



CERTIFICATE

This is to certify that he micro project report entitled

"Different Testing Tools"

Submitted by

Sr. No.	Name of Student	Roll No.
01	Mulla Asiya Umarfaruk	3133
02	Deepak Nikam Laxman	3134
03	Arman Ikbal Jamadar	3135
04	Satyajeet Laxman Mahind	3136

For Fivth Semester of Diploma in Computer Technology of course Software Testing (22518) for academic year 2023-24 as per MSBTE, Mumbai curriculum of 'I' scheme.

DIPLOMA OFENGINEERING
(Computer Technology)

SUBMITTED TO
MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION MUMBAI
ACADEMIC YEAR 2023-24

Project Guide	H.O.D.	Principal
Ms.S.B.Kinkar	Prof.A.A.Vankudre	Dr.P.S.Patil

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI

MICRO PROJECT

Progress Report / Weekly Report

Title of the Project: Different Testing Tools

Course: **STE(22518)** Program: **Computer Technology (CM5I)**

Week No	Date	Duration in Hrs.	Work / Activity Performed	Sign of the Faculty
1		2hour	Knowing the basic	
2		1hour	Decide Aim	
3		2hour	Collect the Data	
4		2hour	Prepare project proposal	
5		1hour	Search Literature review	
6		1hour	Analysis of Data	
7		1hour	Discussion over preparing	
8		2hour	Correction in Booklets	
9		2hour	Report writing	
10		1hour	Checking report	
11		1hour	Correction report write	
12		1hour	Rechecking report	
13		1hour	Finalizing report writing	
14		1hour	Final submission	
15		1hour	Oral presentation of micro project	

Teacher Evaluation Sheet for Micro Project

Course Title and Code: - Software Testing (22518)

Title of the Project: Different Testing Tools

Group No: -9
COs addressed by the Micro Project:

CO a:	Apply various software testing methods.
CO b:	Prepare test cases for different types and levels of testing.
CO c:	-
CO d:	-
CO e:	Test software for performance measures using automated testing tools.
CO f:	-

Marks:-

Roll No.	Name Of Student	Marks for Group Work (06)	Marks obtained by the individual based on viva (04)	Total Marks (10)
3133	Mulla Asiya Umarfaruk			
3134	Deepak Nikam Laxman			
3135	Arman Ikbal Jamadar			
3136	Satyajeet Laxman Mahind			

Name and designation of Faculty Member: **Ms.S.B.Kinkar**

Lecturer (Computer Technology Department)

Signature: _____

ACKNOWLEDGEMENT

I express my sincere gratitude to **Ms.S.B.Kinkar.**, Department of **Computer Technology**, for **his/**her stimulating guidance, continuous encouragement and supervision throughout the course of present work.

I would like to place on record my deep sense of gratitude to **Prof.A.A.Vankudre** HOD- Department of **Computer Technology**, for his generous guidance, help and useful suggestions.

I am extremely thankful to Principal **Dr.P.S.Patil** for this motivation and providing me infrastructural facilities to work in, without which this work would not have been possible.

I would like to express my gratitude to all my colleagues for their support, co-operation and fruitful discussions on diverse seminar topics and technical help.

Name of Student	**Sign**
Mulla Asiya Umarfaruk	
Deepak Nikam Laxman	
Arman Ikbal Jamadar	
Satyajeet Laxman Mahind	

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PART A - Micro-Project Proposal

Title of Micro-Project: Different Testing Tools

1.0 Brief Introduction

There are numerous testing tools available to help software development and quality assurance teams ensure the reliability and performance of their applications. These tools serve various purposes and cater to different aspects of the testing process. Here's a brief introduction to some popular testing tools:

Selenium: Selenium is an open-source testing framework primarily used for automating web applications. It allows testers to write scripts in various programming languages to interact with web browsers and perform functional testing, regression testing, and more.

JUnit: JUnit is a widely used testing framework for Java applications. It simplifies unit testing by providing annotations and assertions to validate the behavior of individual code units.

Postman: Postman is a popular API testing tool that simplifies the testing of RESTful web services. It offers a user-friendly interface for sending HTTP requests, validating responses, and automating API testing workflows.

Appium: Appium is an open-source mobile application automation tool that enables testing of Android and iOS apps. It supports various programming languages and allows for cross-platform testing.

JIRA: JIRA is a project management and issue tracking tool often used for managing software development projects. It helps teams track issues, bugs, and tasks through customizable workflows.

LoadRunner: LoadRunner by Micro Focus is a performance testing tool used to simulate and analyze the behavior of an application under different loads. It helps identify bottlenecks and performance issues.

TestRail: TestRail is a test case management and test management tool that allows teams to organize, track, and manage their test cases and test runs. It integrates with various test automation tools.

Cucumber: Cucumber is a behavior-driven development (BDD) tool that facilitates collaboration between non-technical stakeholders and developers. It allows writing test scenarios in plain language and automating them using step definitions.

Katalon Studio: Katalon Studio is a comprehensive automation testing tool that supports web, mobile, and API testing. It offers a user-friendly interface and supports various scripting languages.

2.0 Aim of the Micro-Project

In today's software environment writing bug-free code is a challenging task, which makes software testing an important tool to get quality software. Testing techniques include the process of executing a program or application with the intent of finding software bugs and verifying that the software product is fit for use. Students will learn the way to find bugs by applying types, levels, and methods of software testing on applications with an effective test planning approach. It also covers manual testing.

Intended Course Outcomes

- Apply various software testing methods.
- Prepare test cases for different types and levels of testing.
- **Test software for performance measures using automated testing tools**.

4.0 Literature Review

Review :

there are several testing tools available, each with its unique features and capabilities. The choice of testing tool for a microproject depends on the specific testing requirements, programming languages, and the project's scale. It's essential to consider factors like ease of use, integration capabilities, and the nature of the project when selecting the most suitable testing tool.

5.0 Proposed Methodology

1) **Knowing the basics of the topic.**

2) **Decide aim of the project and collect the data.**

3) **Prepare project proposal.**

4) **Search Literature reviews.**

5) **Analysis of data.**

6) **Discussion over preparing and correction in booklet and report.**

7) **Converting the content of project in report writing.**

8) **Checking and correction in report writing.**

9) **Rechecking and finalizing report writing.**

10) **Final submission and oral presentation of micro project.**

6.0 Resources Required

Sr. No.	Name of Resource/ Material	Specifications	Quantity	Remark
1	**Computer System**	**i-5**	**1**	
2	**Microsoft Word**	**2010**	**1**	
3	**Internet**	**Any**	**1**	

7.0 Action Plan

Sr. No.	Details of activity	Planned start date	Planned Finish date	Name of Responsible Team Members
1	Project Proposal			**All Members**
2	Data Collection & Analysis			**All Members**
3	Preparation of Prototype/ Model			**All Members**
4	Preparation of Report			**All Members**
5	Presentation & Submission			**All Members**

PART B - Micro- Project Proposal

Title of Micro-Project: Different Testing Tools

1.0 Rationale:

Testing Tools: Tools from a software testing context can be defined as a product that helps one or more test activities right from planning, requirements, creating a build, test execution, defect logging, and test analysis.

Course Outcomes Addressed

- Apply various software testing methods.
- Prepare test cases for different types and levels of testing.
- Test software for performance measures using automated testing tools.

3.0 Literature Review
Review:

there are several testing tools available, each with its unique features and capabilities. The choice of testing tool for a microproject depends on the specific testing requirements, programming languages, and the project's scale. It's essential to consider factors like ease of use, integration capabilities, and the nature of the project when selecting the most suitable testing tool.

4.0 Actual Methodology Followed:

Member 1): Name: All Members.
Work: Finalize the group & project

Member 2): Name: Deepak Nikam Laxman

Work: Search information regarding project subject.

Member 3): Name: Mulla Asiya Umarfaruk

Work: Collect information and discuss with group members about proposal.

Prepare proposal and submit to the guide.

Member 4): Name: Arman Ikbal Jamadar

Work: Analyze and finalize the information of the project report

Member 5): Name: Deepak Nikam Laxman
Work: Write project report

Member 6): Satyajeet Laxman Mahind

Work: Prepare rough sketch and final chart

5.0 Actual Resources Used

Sr. No.	Name of Resource/ Material	Specifications	Quantity	Remark
1	**Computer System**	i-5	1	
2	**Microsoft Word**	2010	1	
3	**Internet**	Any	1	

6.0 Outputs of Micro-Projects

Testing Tools: Tools from a software testing context can be defined as a product that helps one or more test activities right from planning, requirements, creating a build, test execution, defect logging, and test analysis

Classification of Tools

Tools can be categorized based on several parameters. They contain:

- The objective of the tool
- The Activities that are supported within the tool
- The Type/level of testing it supports
- The Kind of licensing (open source, freeware, commercial)
- The technology operated

Tools Implementation - a process

- Analysis of the trouble carefully to identify strengths, weaknesses, and opportunities
- Constraints such as budgets, time, and other requirements are stated.
- Evaluating the options and Shortlisting the ones that meet the requirement
- Developing the Proof of Concept which captures the pros and cons
- Make a Pilot Project using the selected tool within a specified team

There are bunches of software testing tools available in the market, and with the plethora of selections, it becomes hard to zero in on the best tool for your project. The following list categorizes, ranks, and grades the different software testing tools in the market

The following tool categories are covered in this list

- Test Management Tool
- Automated Testing Tools
- Cross-browser Testing Tools
- Load Testing Tools
- Defect Tracking Tools

1)Test Management Tool:

These tools help organize the end-to-end test Cycle

1) qTest

qTest by QASymphony is a testing platform designed for enterprise teams practicing Agile and DevOps. This platform has a stylish, browser-based UI that facilitates all testing activities from test management to automation and reporting. q Test also has integrations with development tools likeJiraSoftware, Jenkins,andgitHubfortraceability

Features:

- Real-time integration with Jira
- Seamless test automation scheduling and CI integrations
- Solid reporting and analytics
- Agile test management

- Exploratory and Session-Based Testing

2) Practitest

Practices is an end-to-end test management tool. A common meeting ground for all QA stakeholders, it enables full visibility into the testing process and a deeper broader understanding of testing results.

Features:

- A vast array of third-party integrations with common bug trackers, automation tools, and robust API for the rest.
- Fully customizable & flexible for the ever-changing needs of QA teams: customize fields, views, permissions, issue workflows, and more
- Reuse tests and correlate results across different releases and products.
- Unique hierarchical filter trees - organize everything and find anything quickly.

2)Automated Testing Tools

This variety of tools assists automate functional and Regression Testing of your application under test.

1) Squish Squish is the GUI Test Automation tool of choice for more than 3000 companies worldwide to automate the functional regression tests and system tests of their graphical user interface (GUIs) and Human Machine Interfaces (HMIs). The Squish GUI testing tool, a 100% cross-platform tool,

features

- In-depth support for all major GUI technologies
- Full support for all desktop, mobile, web, and embedded platforms
- Test script recording
- Powerful and reliable object identification and verifications (object-based and image-based)
- No dependency on screenshots or visual appearance
- Powerful integrated development environment (IDE)
- A wide range of popular script languages for test scripting

2) Ranorex

Over 14,000 users worldwide accelerate testing with Ranorex Studio, an all-in-one tool for cross-platform test automation. Ranorex is easy for beginners with a codeless click-and-go interface, but powerful for automation experts with a full IDE.

Features include:

- Robust object identification for reliable tests and reduced maintenance
- Shareable object repository and reusable code modules
- Cross-browser testing
- Automates challenging interfaces like SAP, ERP, Delphi, and legacy applications

3) Cross-browser Testing Tools

This category of tool help in Cross Browser Testing of your site across Chrome, Firefox, IE, Edge, Safari, and other browsers.

1) LambdaTest

LambdaTest is a scalable cloud-based cross-browser testing platform designed to offer all website or web app testing needs to cloud infrastructure. LambdaTest platform helps you to ensure your website pr web app renders seamlessly across every desktop and mobile browser with the support of manual, visual, and automated testing. With LambdaTest, you can access up to 2000+ combinations of desktop and mobile browsers on the cloud.

Features

- Selenium Web Testing Automation
- Live Interactive Browser Compatibility Testing
- Faster Automated Screenshot Testing
- Parallel Testing For Faster Goto Market Launch
- API For Continuous Testing
- Continuous Testing with Continuous Integration tools

2) CrossBrowser Testing:

Cross-browser testing helps to ensure that website or web application functions correctly in various web browsers. With the help of this tool, it is possible to run parallel automated tests, compare screenshots, and remotely debug real desktop and mobile browsers.

Features:

- Run Numerous Tests on Multiple Devices At One Time
- Easily run automated tests against real iOS, Androids, & other desktop browsers
- It allows running testing frameworks like WebDriver.IO, and Nightwatch for superior quality and speed.

Load Testing Tools

These tools help performance/load test a site or application.

1) Web load: WebLOAD is an excellent testing tool that offers many powerful scripting capabilities, that are helpful for testing complex scenarios. The tool supports hundreds of technologies from Selenium to mobile, enterprise applications to web protocols. It is possible to generate load both in the cloud and on-premise using this tool.

Features:

- Building load test scenarios more easily and efficiently with WebLOAD
- It helps you identify performance bottlenecks in your system with more than 80 report types and graphs.
- Performance Testing can run from the cloud by generating load from Amazon EC2.

2) Loadrunner:

It is a load testing tool for Windows and Linux, which allows testing the web application efficiently. It helpful testing tool to determine the performance and result of the web application under heavy load.

Features:

- It offers support for various types of Apps
- This testing tool can work in several enterprise environments.
- All the Vusers can be controlled with just a single dashboard.
- The LoadRunner provides support for several types of protocols.
- The monitoring and analysis are very user-friendly and easy to grasp.

4) Defect Tracking Tools

This category of tools helps in defect/bug management.

1) JIRA:

JIRA is a defect tracking tool that is used for defect/issue tracking as well as project management. This tool is not only used for recording, and reporting but also integrated directly with the code development environment.

Features:

- JIRA Query Language helps to create quick filters with a single click
- Possible to create custom workflows of any size which is helpful to build, test, and release software. • Install plug-and-play add-ons from The Atlassian Marketplace to fit all types of cases.

2) Mantishub:

Mantis is an open-source defect tracking tool that provides a great balance between simplicity and power. The users can easily get started with this tool for managing their teammates and clients effectively.

Features:

- Improve workflow and efficiency of the organization
- Support for internal issue tracking
- This tool allows Single-sign-on using Bitbucket and GitHub

7.0 Skill Developed / learning out of this Micro-Project(in about 150 to 300 words)

This Project is created for improving the testing knowledge of applications.

1. Studying of the different types of testing techniques.
2. Learned how to prepare Test Plan related to that specified application.
3. Learned how to prepare Test Cases to test if the application is working properly or not.
4. Learned about SRS (Software Required Specification) document.
5. Learned about Defect Report and its necessity.

Annexure – III

Teacher Evaluation Sheet

Name of Student: _____ Enrollment No.: _____

Name of Program : _____ Semester:_____

Course Title: _____ **Code:** _____

Title of the Micro-Project: _____

Course Outcomes Achieved:

_____

_____

_____

Evaluation as per suggested Rubric for Assessment of Micro-Project(Please tick in appropriate cell for each characteristic)

Sr. No.	Characteristic to be assessed	Poor (Marks 1 -3)	Average (Marks 4 - 5)	Good (Marks 6 -8)	Excellent (Marks 9 - 10)
1	Relevance to the course				
2	Literature survey / Information collected				
3	Project Proposal				
4	Completion of target as per project proposal				
5	Analysis of data and representation				
6	Quality of prototype / Model				
7	Report Preparation				
8	Presentation				
9	Defense				

Micro-Project Evaluation Sheet

Seat No.	Process assessment		Product assessment		Total Marks 10
	Part A Project Proposal (2 marks)	Project Methodology (2 marks)	Part B Project Report/Working Model (2 marks)	Individual Presentation /Viva (4 marks)	

Note: Every course teacher is expected to assign marks for group evaluation in first 3 columnsand individual evaluation in 4th column for each group of students as per suggestedrubrics.

Comments / suggestion about team work / leadership / inter-personal communication (ifany):

_____

_____

_____

_____

Any other Comment:

_____

_____

_____

_____

Name and designation of faculty member: _____

Signature: _____

Annexure – III

Teacher Evaluation Sheet

Name of Student: _____ Enrollment No.: _____

Name of Program : _____ Semester:_____

Course Title: _____ **Code:** _____

Title of the Micro-Project: _____

Course Outcomes Achieved:

_____

_____

_____

Evaluation as per suggested Rubric for Assessment of Micro-Project(Please tick in appropriate cell for each characteristic)

Sr. No.	Characteristic to be assessed	Poor (Marks 1 -3)	Average (Marks 4 - 5)	Good (Marks 6 -8)	Excellent (Marks 9 - 10)
1	Relevance to the course				
2	Literature survey / Information collected				
3	Project Proposal				
4	Completion of target as per project proposal				
5	Analysis of data and representation				
6	Quality of prototype / Model				
7	Report Preparation				
8	Presentation				
9	Defense				

Micro-Project Evaluation Sheet

Seat No.	Process assessment		Product assessment		Total Marks 10
	Part A Project Proposal (2 marks)	Project Methodology (2 marks)	Part B Project Report/Working Model (2 marks)	Individual Presentation /Viva (4 marks)	

Note: Every course teacher is expected to assign marks for group evaluation in first 3 columnsand individual evaluation in 4th column for each group of students as per suggestedrubrics.

Comments / suggestion about team work / leadership / inter-personal communication (ifany):

_____

_____

_____

_____

Any other Comment:

_____

_____

_____

_____

Name and designation of faculty member: _____

Signature: _____

Annexure – III

Teacher Evaluation Sheet

Name of Student: _____ Enrollment No.: _____

Name of Program : _____ Semester:_____

Course Title: _____ **Code:** _____

Title of the Micro-Project: _____

Course Outcomes Achieved:

_____

_____

_____

Evaluation as per suggested Rubric for Assessment of Micro-Project(Please tick in appropriate cell for each characteristic)

Sr. No.	Characteristic to be assessed	Poor (Marks 1 -3)	Average (Marks 4 - 5)	Good (Marks 6 -8)	Excellent (Marks 9 - 10)
1	Relevance to the course				
2	Literature survey / Information collected				
3	Project Proposal				
4	Completion of target as per project proposal				
5	Analysis of data and representation				
6	Quality of prototype / Model				
7	Report Preparation				
8	Presentation				
9	Defense				

Micro-Project Evaluation Sheet

Seat No.	Process assessment		Product assessment		Total Marks 10
	Part A Project Proposal (2 marks)	Project Methodology (2 marks)	Part B Project Report/Working Model (2 marks)	Individual Presentation /Viva (4 marks)	

Note: Every course teacher is expected to assign marks for group evaluation in first 3 columnsand individual evaluation in 4th column for each group of students as per suggestedrubrics.

Comments / suggestion about team work / leadership / inter-personal communication (ifany):

_____

_____

_____

_____

Any other Comment:

_____

_____

_____

_____

Name and designation of faculty member: _____

Signature: _____

Annexure – III

Teacher Evaluation Sheet

Name of Student: _____ Enrollment No.: _____

Name of Program : _____ Semester:_____

Course Title: _____ **Code:** _____

Title of the Micro-Project: _____

Course Outcomes Achieved:

_____

_____

_____

Evaluation as per suggested Rubric for Assessment of Micro-Project(Please tick in appropriate cell for each characteristic)

Sr. No.	Characteristic to be assessed	Poor (Marks 1 -3)	Average (Marks 4 - 5)	Good (Marks 6 -8)	Excellent (Marks 9 - 10)
1	Relevance to the course				
2	Literature survey / Information collected				
3	Project Proposal				
4	Completion of target as per project proposal				
5	Analysis of data and representation				
6	Quality of prototype / Model				
7	Report Preparation				
8	Presentation				
9	Defense				

Micro-Project Evaluation Sheet

Seat No.	Process assessment		Product assessment		Total Marks 10
	Part A Project Proposal (2 marks)	Project Methodology (2 marks)	Part B Project Report/Working Model (2 marks)	Individual Presentation /Viva (4 marks)	

Note: Every course teacher is expected to assign marks for group evaluation in first 3 columnsand individual evaluation in 4th column for each group of students as per suggestedrubrics.

Comments / suggestion about team work / leadership / inter-personal communication (ifany):

_____

_____

_____

_____

Any other Comment:

_____

_____

_____

_____

Name and designation of faculty member: _____

Signature: _____