BASAVARAJESWARI GROUP OF INSTITUTIONS

Ballari Institute of Technology & Management

AUTONOMOUS INSTITUTE UNDER VISVESVARAYA TECHNOLOGICAL UNIVERSITY JNANA SANGAMA, BELAGAVI 590018

INTERNSHIP

Report On

SOFTWARE ARCHITECTURE VISUALIZATION TOOLS

Submitted in partial fulfillment of the requirements for the award of degree of

Bachelor of Engineering

In

COMPUTER SCIENCE AND ENGINEERING

Submitted by

SADIYA FARHAD

3BR22CS415

Internship Carried Out By

EZ TRAININGS & TECHNOLOGIES PVT.LTD

HYDERABAD

Internal Guide

Mrs. VARADA ALEKHYA

Asst. professor, CSE

Mrs. STEFFI NIVEDITA

Asst. professor, CSE

External Guide

Er. Y V D CHANDRA SEKHAR

Sr. Technical Trainer

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

NACC Accredited Institution*

(Recognized by Govt. of Karnataka, approved by AICTE, New Delhi & Affiliated to Visvesvaraya Technological University, Belagavi)

"Jnana Gangotri" Campus, No.873/2, Ballari-Hospet Road, Allipur, Ballar1-583 104 (Karnataka) (India) Ph: 08392 – 237100 / 237190, Fax: 08392 – 237197

2022-2023

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(Karnataka)(India) Ph: 08392 – 237100 / 237190, Fax: 08392 –237197

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Internship entitled **"SOFTWARE ARCHITECTURE VISUALIZATION TOOLS"** has been successfully completed by **SADIYA FARHAD** bearing USN **3BR22CS415** a bonafide student of Ballari Institute of Technology and Management, Ballari. For the partial fulfillment of the requirements for the **Bachelor's Degree in COMPUTER SCIENCE AND ENGINEERING** of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, Belagavi during the academic year 2022-2023.

Signature of Internship Co-ordinator

VARADA ALEKHYA
Asst. professor, CSE
STEFFI NIVEDITA
Asst. professor, CSE

Signature of HOD

Dr. R N KULKARNI
HOD Dept of CSE

Basavarajeshwari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
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Ph: 08392-237167/237153 Fax: 237197, e-mail: bitmbly@gmail.com
Website: www.bitm.edu.in

Department of Computer Science and Engineering

Certificate

This is to certify that Mr./Ms. SADIYA FARHAD bearing USN: 3BR22CS415 has completed Internship – 2 entitled "**PYTHON**" during **30th Oct 2022** to **29th Nov 2023** for the partial fulfilment of requirements for the award of bachelor's degree in COMPUTER SCIENCE AND ENGINEERING of Visvesvaraya Technological University, Belagavi.

Signature of Internal Guide

Signature of External Guide

Signature of HOD

Signature of Principal

DECLARATION

I, **SADIYA FARHAD,** third year student of Computer Science and Engineering, Ballari Institute of Technology and Management, Ballari, declare that Internship entitled **"SOFTWARE ARCHITECTURE VISUALIZATION TOOLS "** is a part of Internship Training successfully carried out by **EZ TECHNOLOGIES & TRAININGS PVT.LTD, Hyderabad** at "**BITM, BALLARI".** This report is submitted in partial fulfillment of the requirements for the award of the degree, Bachelor of Engineering in Computer Science and Engineering of the Visvesvaraya Technological University, Belagavi.

Date :
Place :

Signature of the Student
SADIYA FARHAD

ACKNOWLEDGEMENT

The satisfactions that a company the successful completion of my internship on "**SOFTWARE ARCHITECTURE VISUALIZATION TOOLS**" would be incomplete without the mention of people who made it possible, whose noble gesture, affection, guidance, encouragement and support crowned my efforts with success. It is my privilege to express my gratitude and respect to all those who inspired me in the completion of my internship.

I am grateful to our respective coordinator "**VARADA ALEKHYA, Asst. professor, CSE and STEFFI NIVEDITA, Asst. professor, CSE**" for their noble gesture, support co-ordination and valuable suggestions given to me in the completion of Internship.

I also thank **Dr. R N KULKARNI,** H.O.D. Department of **COMPUTER SCIENCE AND ENGINEERING** for extending all his valuable support and encouragement.

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CHAPTER1

COMPANY PROFILE

Company name: EZ Trainings and Technologies Pvt. Ltd.

Locations: Bangalore, Hyderabad.

Destination Technologies is a one-stop solution for Graduates looking to get skilled and be a part of the IT Industry. They train the candidates as per the expectations of the IT Industry in various technologies like C, C++, Java, Python, .NET and Manual / Automation Testing. They are passionate about providing indispensable career guidance and core competency skills to budding youngsters so that they can keep abreast of the latest developments in the world of dynamic and challenging careers. Join hands with them to build a skilled nation. Destination provides internship training on latest cutting-edge technologies in the industry for easy placements of students. They provide hands-on experience on our real time projects to expose the students on the real-world challenges and industry standards of implementing a project. They provide uniquely designed learning experiences with certified internship programs for technical graduates in the field of any programming languages.

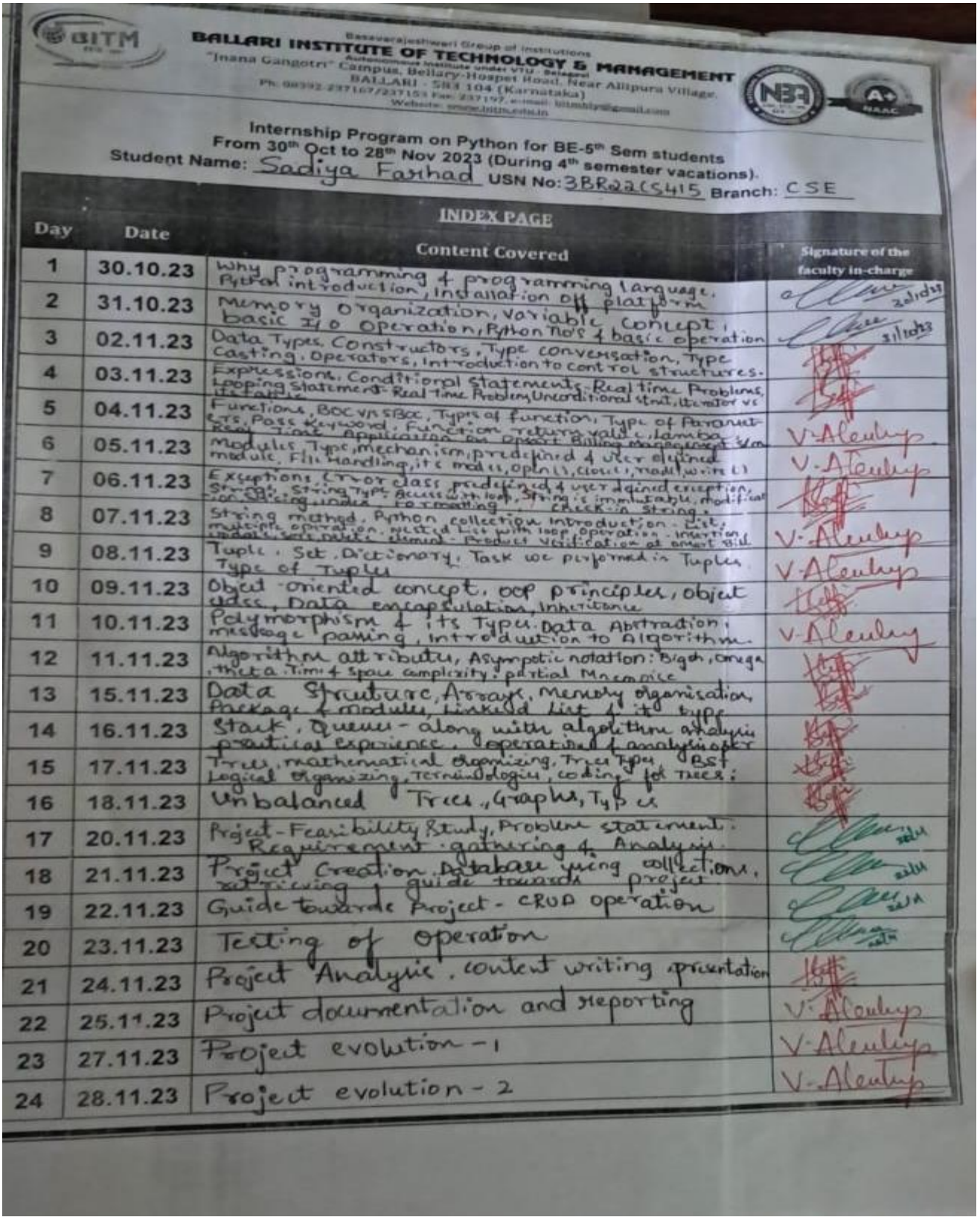
Below is a brief insight into them.

They train the candidates as per the expectations of the IT Industry in various technologies and here are their products:

1. Java Full Stack Course
2. Python Full Stack Course
3. Internship Course
4. Aptitude Course
5. Testing Course
6. Database Course
7. Web Technologies
8. Soft skill Course
9. C++
10. C
11. Projects and internships

CHAPTER2

DAY TO DAY ACTIVITIES



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Ph: 08392-237167/237153 Fax: 237197, e-mail: bitmblr@gmail.com Website: www.bitm.edu.in

Internship Program on Python for BE-5th Sem students
From 30th Oct to 28th Nov 2023 (During 4th semester vacations).

Student Name: Sadiya Farhad USN No: 3BR22CS415 Branch: CSE

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Day	Date	Content Covered	Signature of the faculty in-charge
1	30.10.23	Why programming & programming language, Python introduction, installation of platform	30/10/23
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3	02.11.23	Data Types, Constructors, Type conversation, Type Casting, Operators, Introduction to control structures.	
4	03.11.23	Expressions, Conditional Statements, Real time Problems, Looping Statements, Real time Problem, Unconditional stmt, Iterator vs Iterable	
5	04.11.23	Functions, BOC vs SBC, Types of function, Type of Parameters, Pass Keyword, Function returns value, lambda, Real Time Applications on Smart Billing management system	V. Aleukya
6	05.11.23	Modules Type, mechanism, predefined & user defined module, File Handling, its modes, open(), close(), read(), write()	V. Aleukya
7	06.11.23	Exceptions, Error class predefined & user defined exception, Strings, String Type, Access with loop, String is immutable, modification, Slicing, Index, Formatting, Check in String.	
8	07.11.23	String method, Python collection introduction - List, multiple operation, nested List with loop, operations - insertion, update, sort, pop, clear, Product verification at smart bill	V. Aleukya
9	08.11.23	Tuple, Set, Dictionary, Task we performed in Tuples, Type of Tuples	V. Aleukya
10	09.11.23	Object oriented concept, OOP principles, object class, Data encapsulation, Inheritance	
11	10.11.23	Polymorphism & its Type. Data Abstraction, message passing, introduction to Algorithm.	V. Aleukya
12	11.11.23	Algorithm attributes, Asymptotic notation: Bigoh, Omega, Theta, Time & Space complexity, partial Mnemonics	
13	15.11.23	Data Structure, Arrays, Memory organisation, Package & modules, Linked List & its type	
14	16.11.23	Stack, Queue - along with algorithm analysis practical Experience, operation & analysis of	
15	17.11.23	Tree, mathematical Organizing, Tree Type, BST, Logical Organizing, Terminologies, coding for Trees:	
16	18.11.23	Unbalanced Trees, Graphs, Types	
17	20.11.23	Project - Feasibility Study, Problem statement, Requirement gathering & Analysis.	
18	21.11.23	Project Creation, Database using collections, retrieving guide towards project	
19	22.11.23	Guide towards Project - CRUD operation	
20	23.11.23	Testing of operation	
21	24.11.23	Project Analysis, content writing, presentation	
22	25.11.23	Project documentation and reporting	V. Aleukya
23	27.11.23	Project evolution - 1	V. Aleukya
24	28.11.23	Project evolution - 2	V. Aleukya

CHAPTER3

ABSTRACT

This software architecture visualization tool provides a comprehensive solution for analyzing and presenting complex software structures. Leveraging advanced visualization techniques, it offers an intuitive interface to explore, understand, and communicate intricate software architectures. The tool enables users to interactively navigate through components, dependencies, and relationships, fostering a deeper comprehension of the system's design. With support for various visualization modes and customizable views, it facilitates effective communication among stakeholders, aiding in decision-making processes and enhancing overall system understanding.

CHAPTER4

INTRODUCTION OF THE PROJECT

The Software Architecture Visualization Tool are essential to successful application development. Through graphical code rendering Visualization gives developers a common blueprint to built from a clearly define breakdown of modules and documentation of a software functionality.

A software architecture visualization tool is a crucial instrument in the field of software engineering, offering a graphical representation of the architecture, structure, and components of a software system. This tool aids in comprehending the complexities of software designs, fostering communication among development teams, and facilitating informed decision-making throughout the software development life cycle. By leveraging visual diagrams, such as UML diagrams, dependency graphs, or architectural blueprints, these tools provide a holistic view of how different modules and components of a software application interact. This visual representation enhances understanding, making it easier to identify potential bottlenecks, design flaws, or areas for optimization. Key features of software architecture visualization tools often include the ability to generate and update visualizations automatically based on the codebase, track dependencies between modules, and support various architectural styles. These tools play a vital role in maintaining architectural integrity, ensuring that the implemented design aligns with the intended structure and goals. In essence, a software architecture visualization tool serves as a visual guide for developers, architects, and stakeholders, promoting collaboration and aiding in the creation of robust, scalable, and maintainable software systems.

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CHAPTER5

MODULE DESCRIPTION

This is a project we are developing to provide a list of software architecture visualization tool for customer . Among them they can select any of the tool according to their requirement and can purchase for their further use.

In project , we defines a database of software tools using a dictionary named ‘software_database’. Each tool is represented by a unique key, and its details are stored as a dictionary containing name, property, and price.

The code also includes a set of functions for CRUD(Create, Read, Update, Delete) operations on the software tools:

1. ‘get_software_database()’: Returns the software database.
2. ‘display_menu()’: Displays a menu for CRUD operations and prompt the user for a choice.
3. ‘create_tool()’: Adds a new tool to the database.
4. ‘read_tool()’: Displays details of all software tools in the database.
5. ‘update_tool()’: Updates information for an existing tool.
6. ‘delete_tool()’: Deletes a tool from the database.
7. ‘print_bill()’: Print a bill for selected software tools including client name ,email and total price.
8. ‘main()’: Main function to run the CRUD operations in a loop based on user input.

CHAPTER6

ALGORITHM

1) Start
import tools
print tool 1 - 1
print tool 2 - 1
print tool 3 - 1
print tool 4 - 1
print tool 5 - 1
print tool 6 - 1
print tool 7 - 1
print tool 8 - 1
print tool 9 - 1
print tool 10 - 1
def user import tools(self): - n
amount = 0 - 1
while (choice <=10): - n+1
if choice == 1: - n
print tool1 - 1
elif choice == 2: - n
print tool2 - 1
elif choice == 3: - n
print tool3 - 1
elif choice == 4: - n
print tool4 - 1
elif choice == 5: - n
print tool5 - 1
elif choice == 6: - n
print tool6 - 1
elif choice == 7: - n
print tool7 - 1
elif choice == 8: - n
print tool8 - 1
elif choice == 9: - n
print tool9 - 1
elif choice == 10: - n
print tool10 - 1
else:
print(“invalid choice”) - 1
break;

print(“do you want to purchase??”’) - 1
print(“1. for yes”) - 1
print(“2. for no”) - 1
while (i<=2): - n+1
if i==1: - n
amount=(selected tool) - 1
print(amount) - 1
elif i==2: - n
amount=0 - 1
else:
exit
2) Stop

16n+30

Time Complexity:

- Worst case : O(n)
- Best case : Ω (1)
- Average case : Θ(n)

CHAPTER7

RESULT

OUTPUT 1

```
Software Tools Details!!:
1. Microsoft Visio, $1500
2. Autodesk Reuit, $1000
3. Archicad, $200
4. Enterprice Architect, $1500
5. Lucidchart, $2500
6. Visual Paradigm, $1000
7. Graphuiz, $500
8. Draw.io, $600
9. Cloudcraft, $130
10. Rhino 3D, $500

Software Tools CRUD Operations Menu:
1. Create Tool
2. Read Tools
3. Update Tool
4. Delete Tool
5. Print Bill
6. Exit
Enter your choice (1-6): 1
Enter tool name: AutoCAD
Enter tool property: Software design
Enter tool price: 700
Tool 'AutoCAD' added successfully!
```

OUTPUT 2

```
Software Tools Details!!:
1. Microsoft Visio, $1500
2. Autodesk Reuit, $1000
3. Archicad, $200
4. Enterprice Architect, $1500
5. Lucidchart, $2500
6. Visual Paradigm, $1000
7. Graphuiz, $500
8. Draw.io, $600
9. Cloudcraft, $130
10. Rhino 3D, $500
11. AutoCAD, $700

Software Tools CRUD Operations Menu:
1. Create Tool
2. Read Tools
3. Update Tool
4. Delete Tool
5. Print Bill
6. Exit
Enter your choice (1-6): 2

Software Tools Database:
--------------------------------------------------------------------------------
1. Microsoft Visio - Property: its diagram software, Price: $1500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
2. Autodesk Reuit - Property: its software suite, Price: $1000
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
3. Archicad - Property: its BIM software, Price: $200
```

```
4. Enterprice Architect - Property: It provides systemic design, Price: $1500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
5. Lucidchart - Property: it diagramming tool, Price: $2500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
6. Visual Paradigm - Property: Shows whole development process., Price: $1000
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
7. Graphuiz - Property: uses graph visualization., Price: $500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
8. Draw.io - Property:  creating diagrams, Price: $600
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
9. Cloudcraft - Property: uses Architecture diagramming, Price: $130
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
10. Rhino 3D - Property: create 3D models, Price: $500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
11. AutoCAD - Property: Software design, Price: $700
--------------------------------------------------------------------------------
```

OUTPUT 3

```
Software Tools Details!!:
1. Microsoft Visio, $1500
2. Autodesk Reuit, $1000
3. Archicad, $200
4. Enterprice Architect, $1500
5. Lucidchart, $2500
6. Visual Paradigm, $1000
7. Graphuiz, $500
8. Draw.io, $600
9. Cloudcraft, $130
10. Rhino 3D, $500
11. AutoCAD, $700

Software Tools CRUD Operations Menu:
1. Create Tool
2. Read Tools
3. Update Tool
4. Delete Tool
5. Print Bill
6. Exit
Enter your choice (1-6): 3

Software Tools Database:
--------------------------------------------------------------------------------
1. Microsoft Visio - Property: its diagram software, Price: $1500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
2. Autodesk Reuit - Property: its software suite, Price: $1000
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
3. Archicad - Property: its BIM software, Price: $200
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
```

```
4. Enterprice Architect - Property: It provides systemic design, Price: $1500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
5. Lucidchart - Property: it diagramming tool, Price: $2500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
6. Visual Paradigm - Property: Shows whole development process., Price: $1000
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
7. Graphuiz - Property: uses graph visualization., Price: $500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
8. Draw.io - Property:  creating diagrams, Price: $600
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
9. Cloudcraft - Property: uses Architecture diagramming, Price: $130
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
10. Rhino 3D - Property: create 3D models, Price: $500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
11. AutoCAD - Property: Software design, Price: $700
--------------------------------------------------------------------------------
```

```
Enter the tool ID to update: 11
Enter new tool name (press Enter to keep the same): AutoCAD
Enter new tool property (press Enter to keep the same): Software design
Enter new tool price(press Enter to keep the same): 1000
Tool ID 11 updated successfully!
```

OUTPUT 4

```
Software Tools Details!!:
1. Microsoft Visio, $1500
2. Autodesk Reuit, $1000
3. Archicad, $200
4. Enterprice Architect, $1500
5. Lucidchart, $2500
6. Visual Paradigm, $1000
7. Graphuiz, $500
8. Draw.io, $600
9. Cloudcraft, $130
10. Rhino 3D, $500
11. AutoCAD, $1000

Software Tools CRUD Operations Menu:
1. Create Tool
2. Read Tools
3. Update Tool
4. Delete Tool
5. Print Bill
6. Exit
Enter your choice (1-6): 4

Software Tools Database:
--------------------------------------------------------------------------------
1. Microsoft Visio - Property: its diagram software, Price: $1500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
2. Autodesk Reuit - Property: its software suite, Price: $1000
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
3. Archicad - Property: its BIM software, Price: $200
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
4. Enterprice Architect - Property: It provides systemic design, Price: $1500
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
5. Lucidchart - Property: it diagramming tool, Price: $2500
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
6. Visual Paradigm - Property: Shows whole development process., Price: $1000
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
7. Graphuiz - Property: uses graph visualization., Price: $500
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
8. Draw.io - Property:  creating diagrams, Price: $600
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
9. Cloudcraft - Property: uses Architecture diagramming, Price: $130
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
10. Rhino 3D - Property: create 3D models, Price: $500
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
11. AutoCAD - Property: Software design, Price: $1000
--------------------------------------------------------------------------------
Enter the tool ID to delete: 11
Tool ID 11 deleted successfully!
```

OUTPUT 5

```
Software Tools Details!!:
1. Microsoft Visio, $1500
2. Autodesk Reuit, $1000
3. Archicad, $200
4. Enterprice Architect, $1500
5. Lucidchart, $2500
6. Visual Paradigm, $1000
7. Graphuiz, $500
8. Draw.io, $600
9. Cloudcraft, $130
10. Rhino 3D, $500

Software Tools CRUD Operations Menu:
1. Create Tool
2. Read Tools
3. Update Tool
4. Delete Tool
5. Print Bill
6. Exit
Enter your choice (1-6): 5

Software Tools Database:
-------------------------------------------------------------------------------
1. Microsoft Visio - Property: its diagram software, Price: $1500
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
2. Autodesk Reuit - Property: its software suite, Price: $1000
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
3. Archicad - Property: its BIM software, Price: $200
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
4. Enterprice Architect - Property: It provides systemic design, Price: $1500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
5. Lucidchart - Property: it diagramming tool, Price: $2500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
6. Visual Paradigm - Property: Shows whole development process., Price: $1000
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
7. Graphuiz - Property: uses graph visualization., Price: $500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
8. Draw.io - Property:  creating diagrams, Price: $600
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
9. Cloudcraft - Property: uses Architecture diagramming, Price: $130
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
10. Rhino 3D - Property: create 3D models, Price: $500
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
11. AutoCAD - Property: Software design, Price: $1000
--------------------------------------------------------------------------------
```

```
Enter the tool IDs for the bill (comma-separated): 1
enter client name:Sadiya
enter your email id  :sadiyafarhad709@gmail.com

Bill:
************************************************************
PURCHASED TOOL IS :
Client Name: Sadiya
TOOL NAME: Microsoft Visio - $1500.00
Mail ID : sadiyafarhad709@gmail.com

Total Price: $1500.00
************************************************************
```

CHAPTER8

CONCLUSION

The choice of a software architecture visualization tool depends on specific project requirements, team preferences, and scalability needs. Factors such as ease of use, support for various diagram types, collaboration features, and integration capabilities play crucial roles. Conducting a thorough evaluation based on these criteria will help identify the most suitable tool for a given context.

CHAPTER9

REFERENCE

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