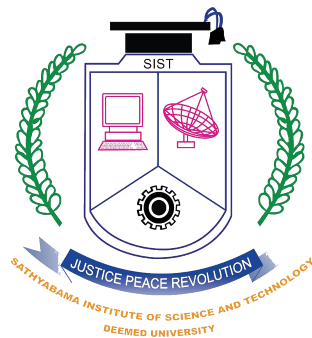


INTERNSHIP REPORT

**SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF
BACHELOR OF SCIENCE – FASHION DESIGN**

by

KARTHIKA. J (41105004)



**DEPARTMENT OF FASHION DESIGN
SCHOOL OF BUILDING AND ENVIRONMENT**

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

Accredited with “A++” by NAAC

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI – 600119

JULY 2023

SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF FASHION DESIGN

INTERNSHIP REPORT (S105AINT)

2023 – 2024

Name of the Student: KARTHIKA. J

Reg No : 41105004

Semester : V

Batch : 2021-2024



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited "A++" Grade by NAAC | 12B Status by UGC | Approved by AICTE

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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF FASHION DESIGN

INTERNSHIP REPORT (S105AINT)

2023 – 2024

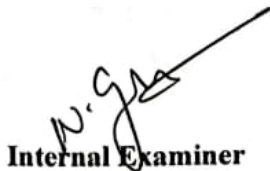
VIVA –VOCE EXAMINATION

This is to certify that the Internship (S105AINT) is the work of KARTHIKA.J - 41105004, during semester V, is a student of Fashion Design department had undergone training in EHA SILKS has been monitored by the continuous assessment from 15/05/2023 to 04/06/2023.

Submitted for Viva Voce examination held on: 06/09/2023


Mentor


Class Coordinator


Internal Examiner


External Examiner


Head of the Department

Head of the Department
Fashion Design
Sathyabama Institute of Science and Technology
Chennai-600 119.



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DECLARATION

I KARTHIKA.J here by declare that the Internship (S105AINT) for 21 days from 15/05/2023 to 04/06/2023 done by me under the guidance of Mrs. N. GAYATHRI, is my original work and is prepared based upon the data and information collected during my internship period is submitted in partial fulfillment of the requirements for the completion of practical training session.

Date: 06/09/2023

Place: CHENNAI

SIGNATURE OF THE CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY** for their kind encouragement in doing this Internship and completing it successfully. I am grateful to them.

I convey my thanks to **Dr. DEVYANI GANGOPADHYAY** Dean, School of Building and Environment for providing me constant support and guidance. Your dedication to fostering a positive and nurturing academic environment has made a significant impact on my personal and professional growth.

I express my deep sense of gratitude to **Mrs. S. KRITHIKA** Head of the Department, Department of Fashion Design, School of Building and Environment, for providing me the assistance and knowledge at the right time during the progressive review.

I would like to extend my sincere gratitude to **Mrs. POORNIMA KOTA** for giving me the chance to be a part of your esteemed organization and gain practical experience in the industry. I admire, the great opportunity that has provided to us and all the elements that made a contribution toward my understanding throughout this period.

I would like to express my sincere and deep sense of gratitude to **Mrs. N. GAYATHRI** for her valuable guidance, suggestions and constant encouragement. I feel privileged to have the opportunity to be under your guidance, that paved way for the successful completion of my internship.

Last but not the least, I would like to thank all my **FAMILY MEMBERS, FRIENDS AND RELATIVES** for their support during the Internship period.

BONAFIDE CERTIFICATE FROM COLLEGE



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

Ref: SHD/2023/04/24/46

24 April, 2023

BONAFIDE CERTIFICATE

This is to certify that Ms. KARTHIKA J, Register Number 41105004 is a Bonafide student of our Institution pursuing 2nd year BACHELOR OF SCIENCE in FASHION DESIGN during the academic year 2022-2023. She will be completing the course in the year 2024.

This certificate is issued for the purpose of Applying INTERNSHIP.


DEAN (STUDENT AFFAIRS)

Dr. G. SUNDARI, M.E., Ph.D.,
DEAN (STUDENT AFFAIRS)

SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Jeppiaar Nagar, Rajiv Gandhi Salai
Chennai - 600 119.

MAIL REQUEST FROM DEPARTMENT TO COMPANY

Internship of our students regarding



Inbox



GAYATHRI N 24 Apr

to ehacare@gmail.com, FASHION, ...



Dear Sir/Madam,
I am N. Gayathri, working as Assistant Professor in the Fashion Design department of Sathyabama Institute of Science and Technology. Students pursuing B.Sc. Fashion Design degree from our department needs to complete their internship for 21 days in their Second year as a part of their curriculum. We request you to kindly permit our students for their internship in your esteemed organization for 21 days from 11th May to 3rd June 2023. Kindly confirm your acceptance by mail.

please find the attached students name list with their register number.

Karthika.J - 41105004

Yapadinne Sai Varshitha - 41105018

Best Regards

N. Gayathri
Assistant Professor
Department of Fashion Design
Sathyabama Institute of Science & Technology
Chennai - 600119

MAIL ACCEPTANCE FROM COMPANY



GAYATHRI N 24 Apr

Dear Sir/Madam, I am N. Gayathri, working as Assistant Professor in the Fashion Design



GAYATHRI N 28 Apr

to me, saivarshithareddy67503 ▾



Best Regards

N. Gayathri
Assistant Professor
Department of Fashion Design
Sathyabama Institute of Science & Technology
Chennai - 600119

----- Forwarded message -----

From: **EHA Silks** <ehacare@gmail.com>

Date: Mon, Apr 24, 2023 at 5:10 PM

Subject: Re: Internship of our students regarding

To: GAYATHRI N <gayathri.design@sathyabama.ac.in>

Cc: FASHION HOD <fashionhod@sathyabama.ac.in>

Hello Gayathri,

Good to hear from you on intership program and thank you for approaching us.

We encourage new generation and support them to learn new aspects of current market fashion and trends.

Will surely support your student to pursue new learning opportunities and their dreams.

Thanks & Regards
Poornima
Eha Silks

PERFORMANCE REPORT

DEPARTMENT OF FASHION DESIGN

INTERNSHIP REPORT 2023

(Continuous progress report of the trainee for the period of 21 days in the industry to be submitted to HOD by the Trainee Incharge of the Organization)

1. Name of the Industry: EHA SILKS
2. Address : 8-86, Anand Complex, Main Road, Uppada-533448.
Kothapalli Mandal, E.G. District, A.P.
3. Name of the student : Karthika. J
4. Duration : 15-05-2023 to 04-06-2023
5. Total No. of days : 21 days

Evaluation of performance criteria shall be on

Note: Kindly grade the student as per her overall performance in the office during the assessment days, which will be converted to the allotted 40 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding the Units		✓			
Participation in the Industry	✓				
Handling the given work		✓			
Punctuality		✓			
Coordination With Other Workers		✓			
Oral communication			✓		
Attitude		✓			
OVERALL PERFORMANCE	Good designing skills & learning skills.				

Any other Remarks :

Signature of the Head of the Office:

For EHA SILKS

Partner

CERTIFICATE



INTERNSHIP DETAILS

1. INDUSTRY / ORGANIZATION: EHA SILKS

Mentor Name : **Mr. Srinivas**

Designation of the mentor: **Design Incharge**

Contact Number : **9493748773**

Address : **8-86, Anand Complex, Main Road,
Uppada – 533448 U. Kothapalli Mandal, E.G. District, A.P.**

2. INSTITUTION: SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Mentor Name : **Mrs. N. Gayathri**

Designation of the mentor: **Assistant Professor**

Student Name : **Karthika. J**

Department : **Fashion Design**

Address : **Jeppiaar Nagar, Rajiv Gandhi Salai,
Chennai- 600119 Tamil Nadu, INDIA.**

DAILY REPORT

DATE	REPORT
15/5/2023	Visiting Company's Showrooms
16/5/2023	Visiting Weavers and Weaving Unit
17/5/2023	Design Department
18/5/2023	Basic Design Development
19/5/2023	Design Department
20/5/2023	Motif Development
21/5/2023	Motif Development on Graph
22/5/2023	Design Department
23/5/2023	Weaving Unit
24/5/2023	Design Development on Graph
25/5/2023	Design Department
26/5/2023	Design Development on Graph
27/5/2023	Weaving Unit
28/5/2023	Design Department
29/5/2023	Dyeing Unit
30/5/2023	Design Development on Graph
31/5/2023	Weaving Unit
01/6/2023	Dyeing Unit
02/6/2023	Design Department
03/6/2023	Design Department / Weaving Unit
04/6/2023	Weaving Unit

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**DOCUMENT ON EHA SILKS IN
HANDLOOM WEAVING**



(Logo of Eha Silks)

1. INTRODUCTION

This document is a concise report on handloom design unit, Uppada. This internship aims to prepare a practical knowledge, skills and attitudes for handloom unit. This report is made by observing, discussing with related people, knowing the basic fundamentals of the handloom unit. There where various units in handloom industry like designing, dyeing and weaving units. A comprehensive overview of my experience and discoveries during my time period through detailed exploration, the fundamentals of weaving, the art of designing fabric patterns and motifs. The motif design unit was a vibrant and forward-thinking team dedicated to transforming ideas into visually captivating realities. They strive to create unique and engaging motifs that transcend the ordinary and push the boundaries of what's possible. Working under a dyeing unit was an exciting and essential role within the textile and manufacturing industry. It has given the hands-on experience in handling dyes and chemicals, understanding the importance of safety protocols, and maintaining a clean and hazard-free workspace. Sustainability and environmental consciousness were the key considerations in their work. They adopt eco-friendly practices, such as water recycling and waste reduction, to minimize their ecological impact. This internship experience has enriched my understanding of textile production and the insights gained at the handloom design unit have broadened my perspectives on the potential of woven fabrics as a medium of artistic expression. This internship of handloom unit with looms and skilled designers and weavers, has provided me the unique opportunity to gain the experience and knowledge about the industry. Where weavers, designers and artisans work in harmony to create fabrics that encapsulate creativity and craftsmanship. This report will also shed light on the dedication of the team to deliver the fabrics of the highest quality. Working under a handloom design unit was a fulfilling and culturally enriching experience. It combines artistic expression, technical expertise, and a commitment to preserving traditional craftsmanship, making it a remarkable journey about textiles and design. It was a great opportunity to gain first hand and experience about various activities and knowledge, about how a handloom unit works.

2. COMPANY PROFILE

” VENKATA RAMA LAKSHMI FABRICS” established in the year 1979 in UPPADA, Year of Registration – 30 June 1980. This Organization has been around for 43 years.



Figure 1

Lolla Venkata Rao
(Founder)

LOLLA VENKATA ROA, founder of the Organization, has begun his career in the weaving sector in 1940 and he was one of the Original Director of Kothapalli Handloom Board. In 1986 they began manufacturing and selling Traditional Jamdhani Sarees. They started supplying for government showrooms and Art and Craft Exhibition (with the support of NGO). They expanded their organization by displaying their Uppada Jamdhani Sarees and began to distribute all over the states like Vijayawada, Kakinada, Hyderabad, Madras etc. Later they extended their branches for marketing in Bombay, Delhi and Venkatagiri. In 2008 the Uppada Saree has given the Geographical Indication (GI) status, which recognizes its origin.

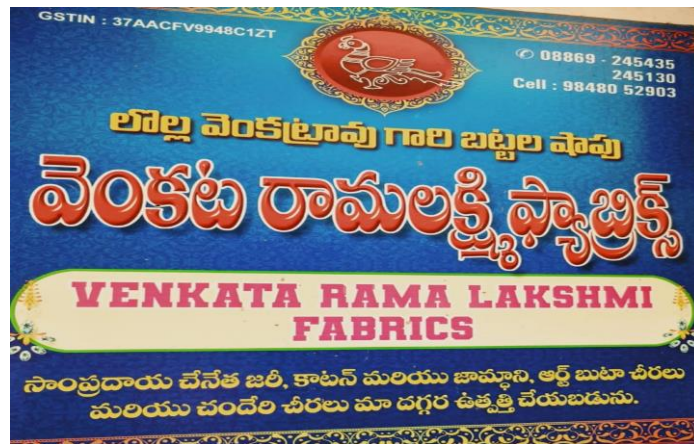


Figure 2

Venkata Rama Lakshmi Fabrics



Figure 3



Figure 4

Venkata Rama Lakshmi Fabrics – Retail Shop

This village has around 250 families, out of which 150 family members are working for Eha Silks, they have 400-500 weavers and more than 1200 handlooms in Uppada Village. They produce about 36,000 sarees per year.

Weavers earn 10,000 – 25,000 depending on the number of sarees they can produce in a month. This Organization has both wholesale and retail marketing all over the states. The cotton or silk Uppada saree's cost depend on the pattern of the saree, which starts from 5,500 to more than 2 Lakhs.



Figure 5

Eha Silks – Uppada

Following, Lolla Venkata Rao his son LVV. SATYANARAYANA and Grand Daughter POORNIMA KOTA who have been running the organization.

They established the Sister Organization called EHA SILKS in 2016 at Chennai and later another branch at Uppada in the year 2021. It has exclusive women's wear collections and developing men's wear collections.

This organization has special place for itself in the Indian textile market by creating and offering a beautiful selection of Ladies Silk Sarees with the assistance of VRLF fabrics, which was founded in 1945. In the year 1988, VRLF reintroduced a centuries-old weaving technique known as jamdani in a small village named Uppada in Andhra Pradesh and as a result, a new brand known as "Uppada Sarees" emerged, enjoying almost a decade of soaring popularity. Heavy Jamdani silk sarees, designer silk sarees, printing sarees, Khadi sarees, and more are all part of this assortment.

Designer party wear sarees, fancy sarees, clothing materials, and all types of handwoven textiles, assortment of clothes, which come in a variety of hues, patterns, designs, and embroidery. They can be customized to the needs of the customer. Since the skilled designers and weavers are working so hard to create a variety of distinctive styles while producing the product, they have gained the respect of a large clientele, which includes India's top designers, boutiques, and global presence. Where they are planning to open a new branch in Coimbatore.



Figure 6

Eha Silks (Showroom) - Uppada

2.1 MARKETING CENTERS

They distribute all over the states mainly in – Hyderabad, Madras, Vijayawada, Vizag, Bangalore, Bombay, Delhi, Calcutta, Nagpur, Venkatagiri.

2.2 UNITS

- Weaving Unit - Uppada
- Stitching Unit – Kolkata, Jaipur.

2.3 CERTIFICATIONS

- National Merit Certificate award (Marketing) in 2016.
- National Award (Marketing) in 2018.

2.4 VISION

To work towards developing a textile ecosystem in which handloom weaving and the handloom weavers, on the one hand, both become productive contributors to the society's overall economy and, on the other hand, the handloom weaving is preserved and developed alongside proportionate development in the socioeconomic circumstances of the weaver families and their skill sets.

2.5 MISSION

To establish a viable, successful organization that promotes handloom weaving using modern designs, preserves and improves handloom weavers' skills, provides income, education, and dignity to handloom weaving communities across clusters, and increases the number of people who use handlooms in society.

2.6 COMPANY FACT SHEET

Basic Information

- Nature of Business - Manufacture, Wholesale & Retail.
- Additional Business - Manufacturer, Exporter, Wholesale, Trader.
- Company Partners - Poornima Lolla, Satyanarayana K, LVV Satyanarayana.
- Address - 8-86, Anand Complex, Main Road, Uppada, AP
PIN – 533448
- Industry - Indian Ethnic wear for Women.
- Total Number of Employees - 20-25
- Year of Establishment - 2021 (EHA SILKS – Uppada)
- Main Managing Partner - Mrs. Poornima Lolla.
- Annual turnover - 2022 – 23 Rs 2 Crore Approx.

2.7 STATUTORY PROFILE

- Banker - HDFC BANK
- GST No - 37AAJFE1013G1ZV

2.8 VISITING CARDS

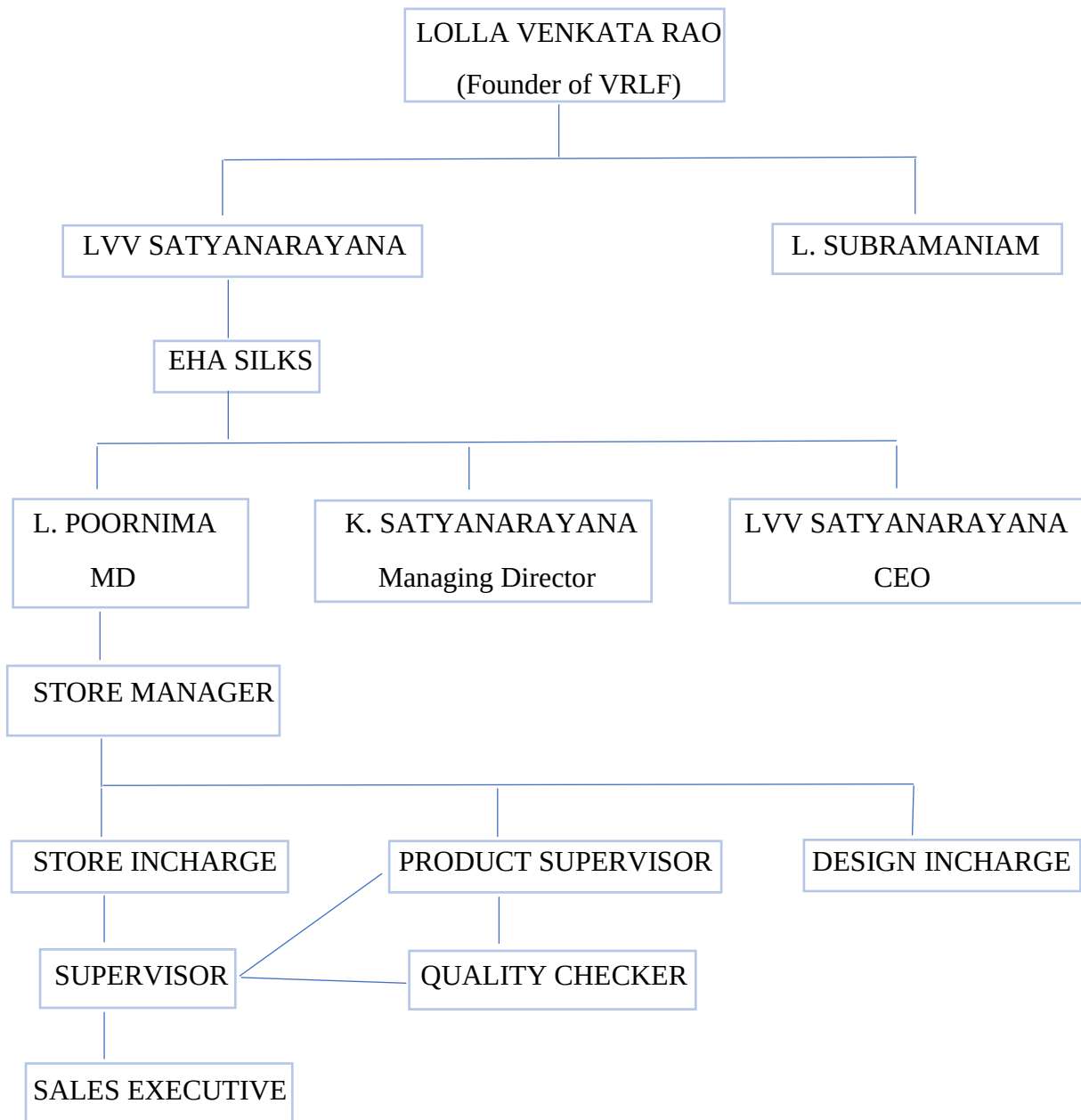


Figure 7

2.9 WEBSITES

- Mail ID - ehacare@gmail.com
- Google Website - www.ehaonline.com
- Instagram - ehasilks
- Facebook - eha.india
- WhatsApp - 070109 17427

3. ORGANIZATIONAL CHART



PROJECT

4. DESIGN DEPARTMENT

This organization produces the famous Uppada Jamdhani sarees, where they create the popular motifs which are named as Panna, Hajar, Dubli, Jal, Butidar, Tera, Charkona, Fulwar, Duria, belwari etc.

Some new designs include "Dublajal" (like a fish net), "Phultesri" (floral pattern), "Jalarnaksha" (an all over pattern) and others. Only selected new motifs are drawn on the graph sheets. Mostly floral, birds and geometrical patterns are used in these sarees. They work on the design from their memory, and express their creative genius. Each pattern is woven with mathematical precision.



Figure 8

National Award-Winning Design

4.1 MOTIF DEVELOPMENT

Motifs were the fragment or recurring elements, which is used to create larger work by joining together. Motifs are first drawn in the sheets to get the approval.

Nearly 300–500 designs are made for a single design to weave. After getting the approval the motif designs are drawn on the graph sheet.



Figure 9
Motif Discussion

Motifs are created by using both traditional and contemporary designs mostly with the combinations of birds, animals and floral patterns.

Creating reflectional symmetry motifs on a graph sheet involves designing patterns that are mirrored along a specific axis. Sketching the base motif on one side of the reflection axis, the base motif should be symmetrical in itself, as it will be reflected on the other side of the axis while weaving the saree.

4.2 DESIGN DEVELOPMENT PROCESS

Creating Motifs

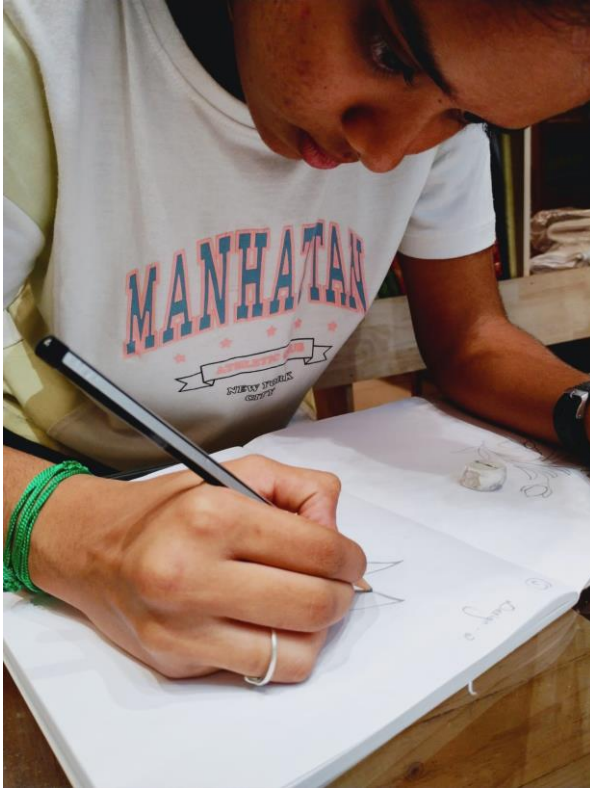


Figure 10



Figure 11

Design Development



Figure 12

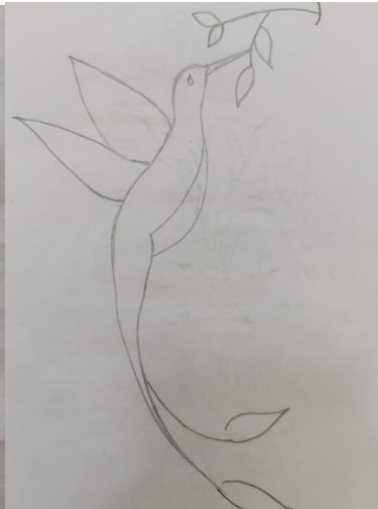


Figure 13



Figure 14



Figure 15



Figure 16

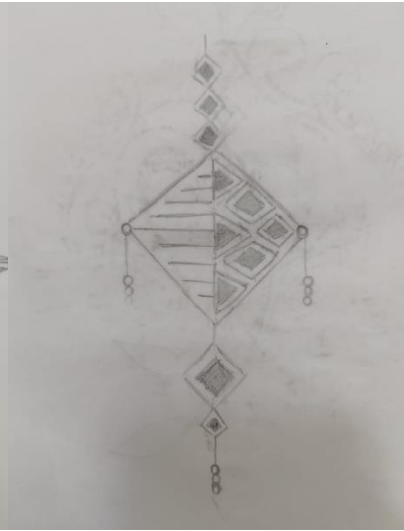


Figure 17

Combination of Traditional and Contemporary Motifs

These designs are called as Modern Classic Style motifs, which consists of both traditional and modern style designs. This design gives them the transitional look to the saree. They create various designs in contemporary style according to the current trend in the market.

Design Development on modern Classic Style



Figure 18



Figure 19

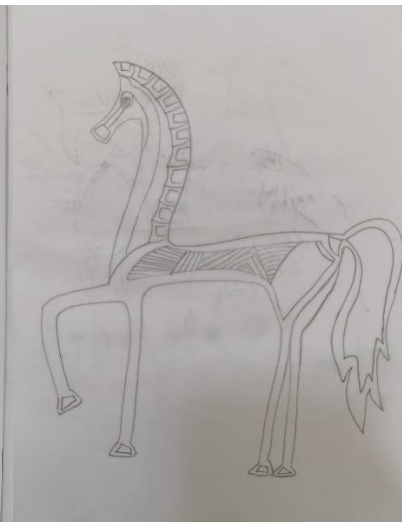


Figure 20

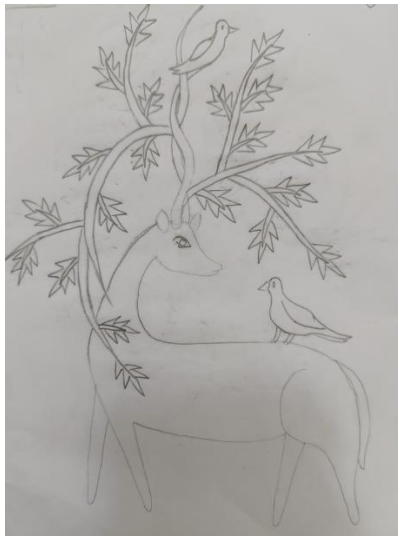


Figure 21

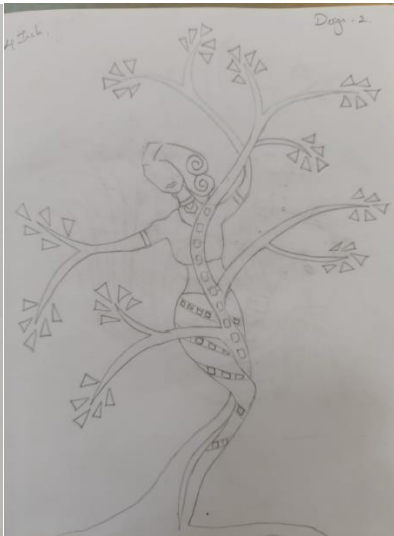


Figure 22

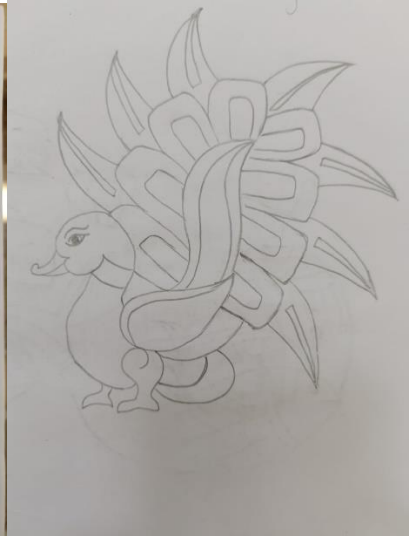


Figure 23

Contemporary Design / Motifs

These motifs consist combinations of two or more contemporary designs together to create a new motif.

Which gives the modern look to the woven saree. In jamdani saree's maximum designs are from the traditional inspirations where they are converted into the contemporary motifs which includes traditional look in it.

Design Development on Contemporary Style

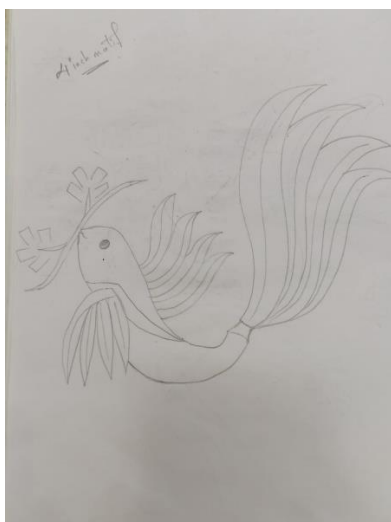


Figure 24

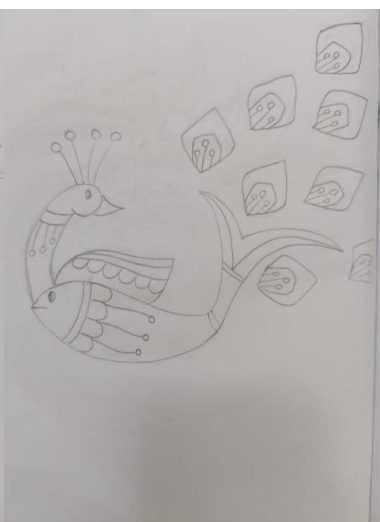


Figure 25

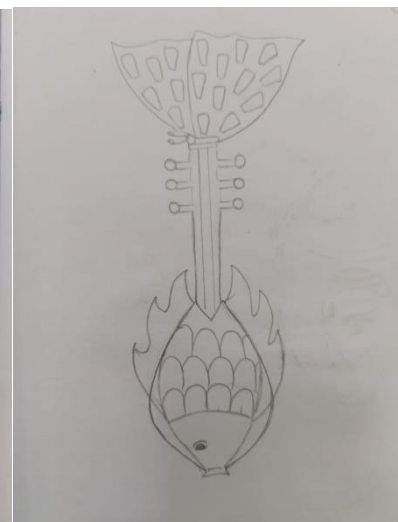


Figure 26

Symmetrical Motifs

These patterns are made by merely creating a single face of the motif, they grow into the complete motif when they are weaved. This process is made to consume less amount of time by drawing half of the design. Which makes the designer to create many numbers of motifs. Mostly this technique is used in creating the Butta patterns and repeated motifs in saree.

Motif Works

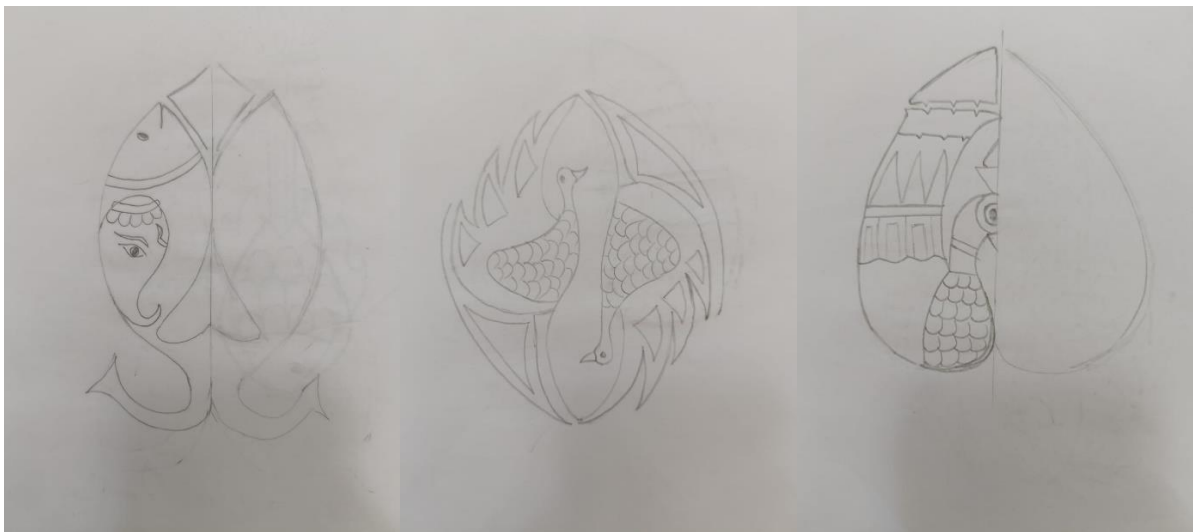


Figure 27

Figure 28

Figure 29

Butta Designs

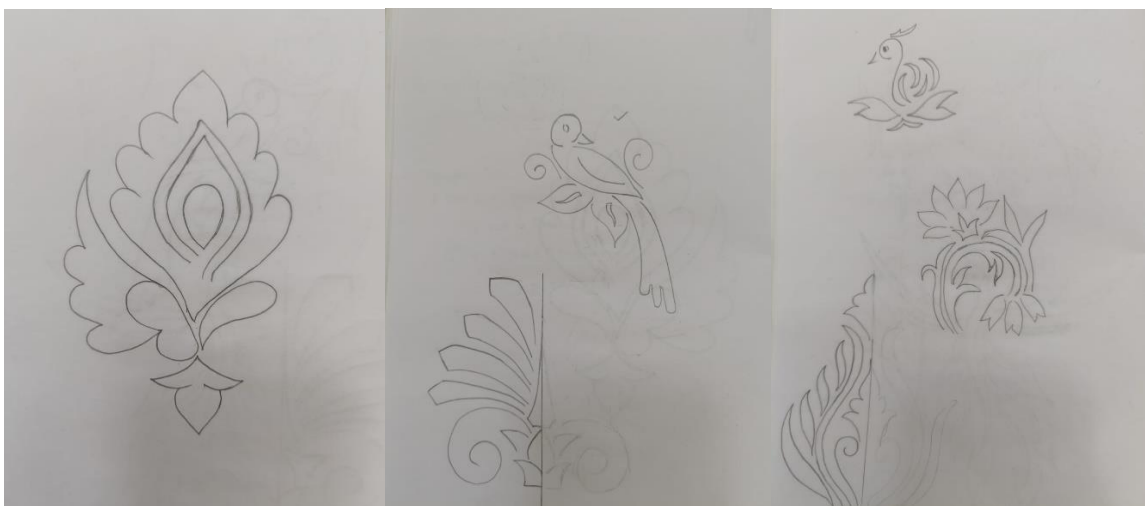


Figure 30

Figure 31

Figure 32

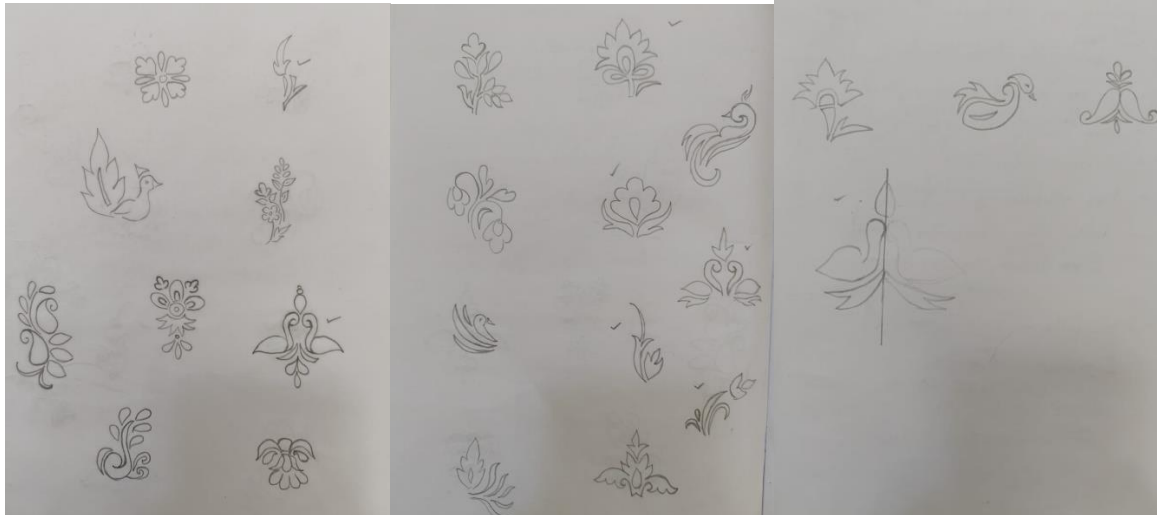


Figure 33

Figure 34

Figure 35

4.3 GRAPH DESIGN DEVELOPMENT

Designs are drawn on the graph sheets to weave on the saree, graph sheets provide a structured framework for creating intricate designs, and each square (grid) on the graph paper represents a single unit of the weaving pattern.

The mathematical calculations involved in designing on graph sheets for weaving depend on several factors, including the desired pattern complexity, the type of weave, and the size of the motif.

Graph:

Each small square box in the graph sheet represents 1 inch, and within each small square box, they hold 10 more smaller boxes.

In detail, for 4*4 motif we have to use 4 vertical box and 4 horizontal boxes.

Where this 4*4 boxes increase by the motif sizes.

1-inch motif = 4 * 4 boxes (4 inches)

2-inch motif = 8 * 8 boxes (8 inches)

4-inch motif = 16 * 16 boxes (16 inches) etc,

This means that each box in the motif represents 1 inch as well. So, for a 1-inch motif, it would fit within a 4 * 4 grid, for a 2-inch motif, it would fit within an 8 * 8 grid, and for a 4-inch motif, it would fit within a 16 * 16 grid.

Mostly Butta's are made in 1-inch and the boarder of the sarees are made in 16-inch designs. When we sketch the motif designs in 4-inch boxes. while weaving, the motif will be at 1 inch.

By sketching the motifs in larger boxes, it allows the weaver to visualize and plan the finer details more easily. However, when it comes to actual weaving, the motif is woven in a smaller scale, fitting within a 1-inch grid. The use of a larger sketch with 4-inch boxes also helps ensure that the design remains clear and distinct when woven in a smaller size. The reduced scale allows for more intricate patterns and delicate details to be woven into the fabric. Mostly in the geometrical shapes, straight lines are used on the design. The practice of leaving specific distances between boxes in the design plays a significant role in achieving the desired shape and ease of weaving. In the curve parts of the design, it is essential to maintain a maximum of 3 box distance between the individual boxes. This close spacing helps in creating smooth and well-defined curves when the design is woven. It allows for a higher level of detail and precision in the final woven pattern. For geometrical patterns, a minimum of 2 box distance is typically left between the boxes. In some cases, a single box distance may be used, but this is relatively rare. This spacing facilitates straightforward weaving of geometric shapes and enables the weaver to follow the pattern smoothly.

Creating motifs on graph



Figure 36



Figure 37
Zig Zag pattern on design

4.4 WORKS ON GRAPH SHEETS

1-inch Motifs (4 * 4 box)

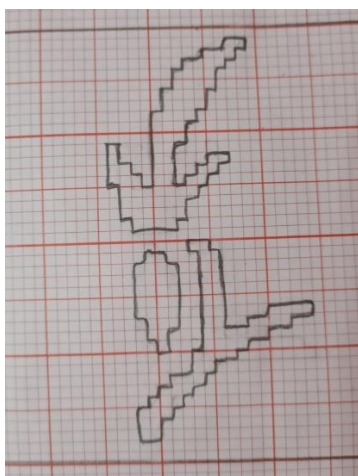


Figure 38

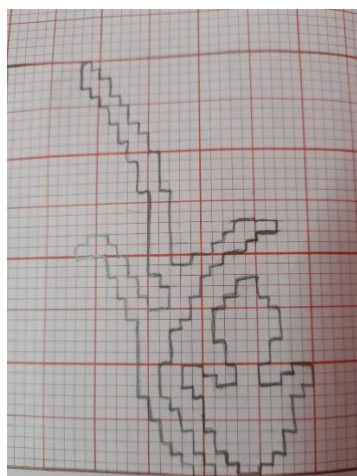


Figure 39

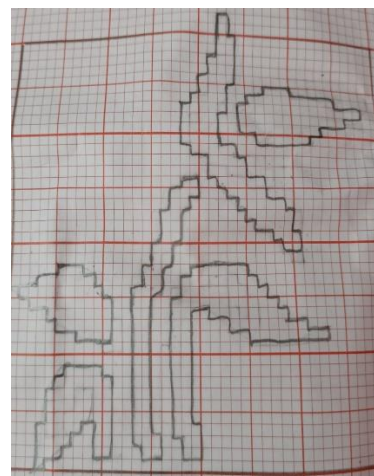


Figure 40

1-inch Motifs (4 * 4 box) - Symmetrical Motifs

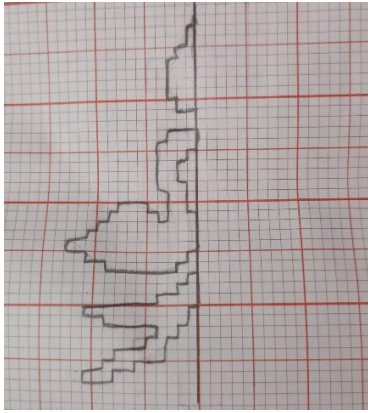


Figure 41

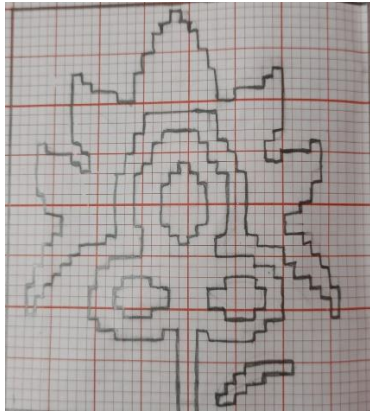


Figure 42

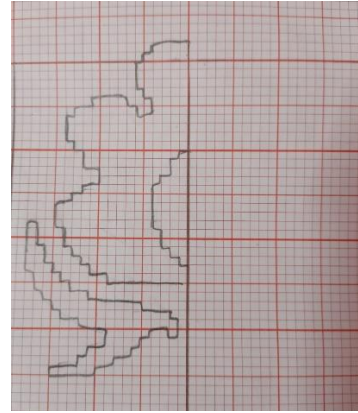


Figure 43

Symmetrical Motifs

2-inch Motif (8 * 8 box)

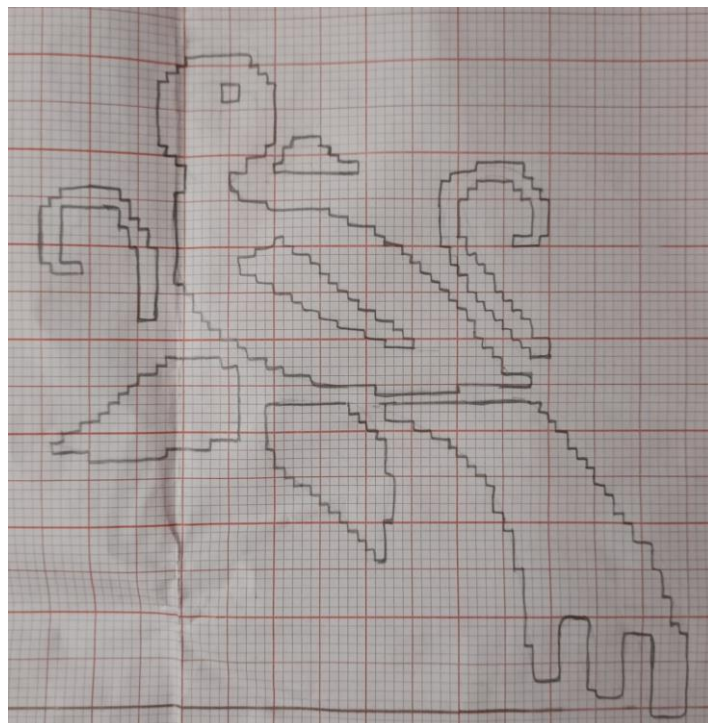


Figure 44

4-inch Motifs (16 * 16 box)

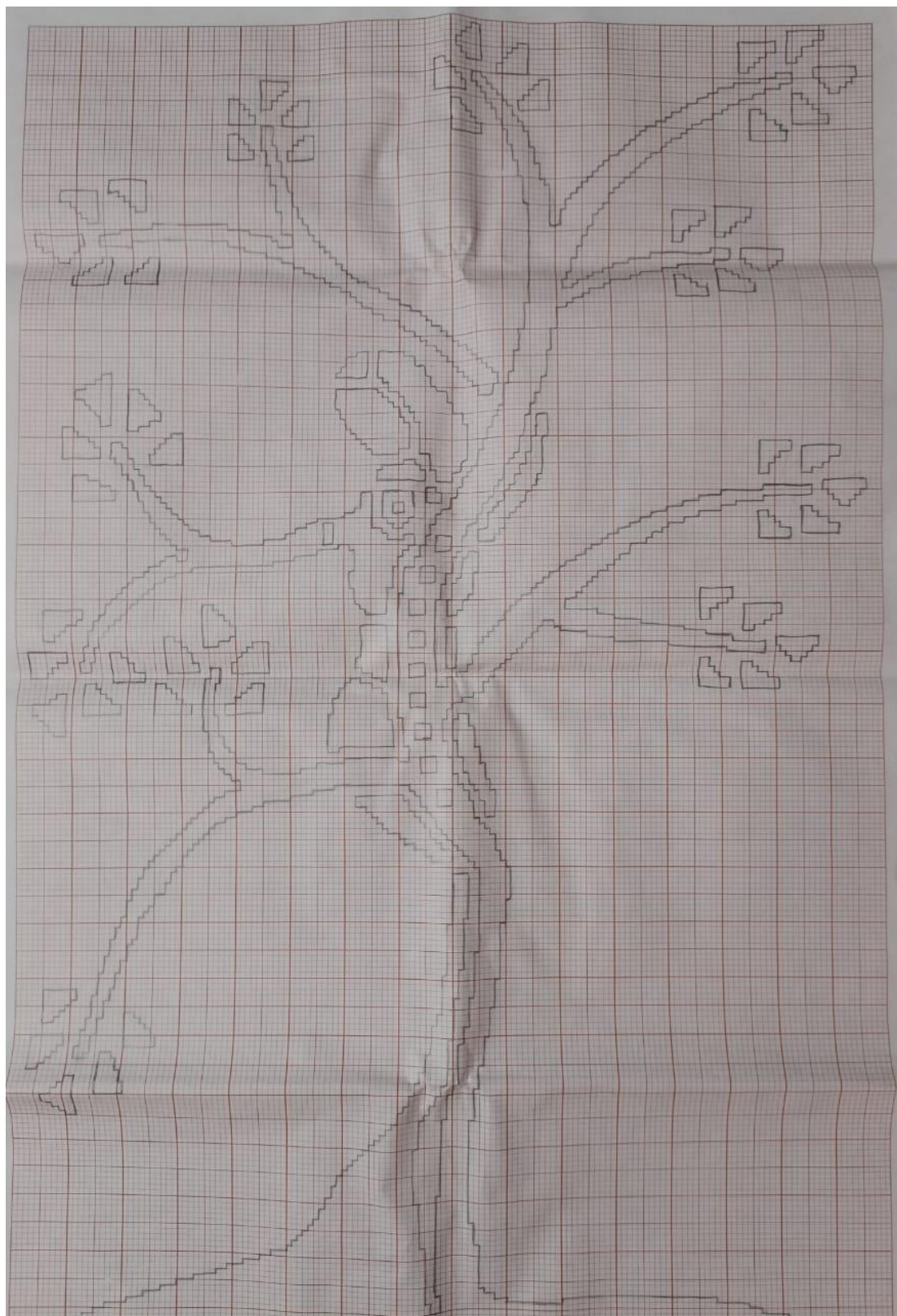


Figure 45

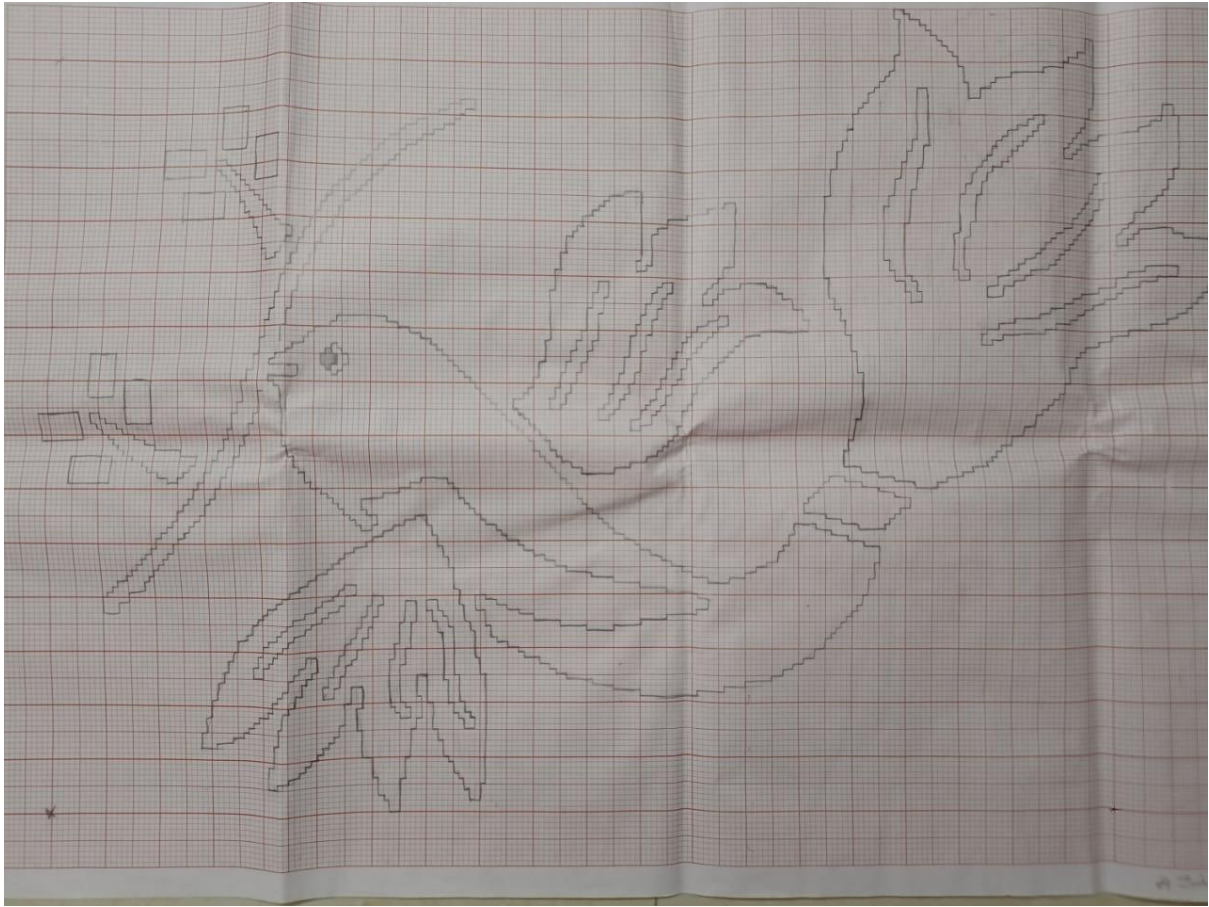


Figure 46

Zig-zag patterns are developed in both the vertical (warp) and horizontal (weft) lines. These patterns are carefully planned and woven to create the desired visual effect and texture in the fabric.

Each single box on the graph paper is crucial in the design process for weaving. As mentioned earlier, these boxes represent 1-inch increments and help the weavers lock the design precisely on the handloom. The accuracy and attention to detail in using each box contribute to the intricacy and beauty of the final woven pattern.

5. DYEING UNIT

In this dyeing process, the yarns are dyed first before the weaving stage. These are the following steps in Dyeing process.

- Bleaching
- Marking (pallu and Body)
- Dyeing
- Drying
- Beating



Figure 47
Dyeing Unit

5.1 HEATING PROCESS

They use rice husks as a source of fuel for heating water was an interesting approach to utilize natural waste effectively. Rice husks are the waste materials left after the rice grains have been removed.

20 sets of wrap yarns require 2 to 3 bags of rice husks to burn. after burning, the husks turn into ash, which is a one-time-use product for the burning process.



Figure 48
Heating



Figure 49

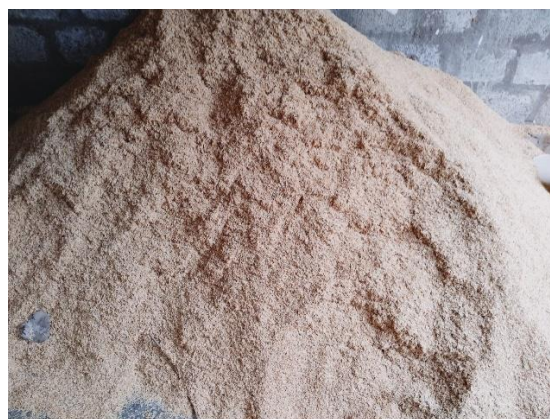


Figure 50

Rice Husks – Before Burning



Figure 51



Figure 51

Rice Husks – After Burning

5.2 BLEACHING

Bleaching is the process of whitening the yarns by removal of the natural coloring matter. The natural coloring matters present in the silk yarns are associated mainly with sericin and hence are eliminated during degumming.

This is the pre-treatment method in textile industry to remove the original color of the fibers, some chemicals are used in this process for degumming.

- It removes the natural color from textile materials.
- It brings the textile materials permanent white in color.
- Improves the absorbency of the textile materials.
- Produce textile materials for the next process.

A combination of white soaps and soda is used for bleaching. These materials are boiled at the maximum temperature of heat for 15 minutes. The purpose of this step is to remove any natural color or impurities from the raw silk yarns and make them white. After the boiling process, the hot water containing the white soaps and soda is ready for degumming. The raw silk yarns are slowly dipped into the hot water and kept there for 15-20 minutes. During this time, the sericin, a natural silk gum or adhesive protein, is removed from the yarns. The bleaching and degumming process not only whitens the raw silk yarns but also improves their softness. The removal of sericin contributes to the increased softness of the yarns, making them more suitable for further processing and use.



Figure 52



Figure 53

White Soap and Sodium



Figure 54

Boiling water with white soap and sodium



Figure 55



Figure 56

Before Bleaching - After Bleaching

The weight of the raw silk yarns before and after bleaching is as follows:

Before Bleaching: Weight of raw silk yarns = 1 kg

After Bleaching: Weight of raw silk yarns (after removing the gum and after drying) = 750 grams (0.75 kg)

So, after the bleaching process, the raw silk yarns weigh 0.75 kg, which means approximately 25% (250 grams) of the initial weight (1 kg) was lost during the bleaching and degumming process. This weight loss is likely due to the removal of sericin and other impurities during the treatment.

5.3 MARKING – PALLU AND BODY

The yarns are separated and marked to indicate the sections for the body and the pallu of the saree. This marking helps in distinguishing the two parts during the dyeing process. Once the yarns are marked, they are laid from one end to another, with approximately 8 sarees (of the same color) marked and dyed together. This grouping allows for efficient dyeing of multiple sarees simultaneously.

The length measurement for the pallu and blouse sections is mentioned as "2 Gajam," which is equivalent to 2 meters. For each saree, 2 meters of yarn are marked as the pallu and blouse sections, respectively.

This process is done for identifying the body and the pallu of the saree for dyeing.

The yarns are continuously laid out from one end to another end, forming a long and continuous length of yarn. As the yarns are laid out, they are marked at specific intervals to indicate where the pallu, blouse, and body of each saree will be located along the length of the yarn. Separation and Tying: After the marking are complete, the yarn is separated and tied at the marked intervals to create individual segments for each saree for dyeing. Each segment will consist of the yarns needed for the pallu, blouse, and body of one saree.



Figure 57



Figure 58

Marking Process



Figure 59
Yarns after Marking

The segments representing the body and pallu of each saree are knotted to differentiate them from each other for the dyeing process. This ensures that the colors of the body and pallu remain distinct. After knotting, the blouse and pallu segments of each saree are packed separately in plastic covers. The packing is done tightly to prevent the color from the body of the saree from transferring to the pallu during the dyeing process.



Figure 60
Blouse and pallu are packed in the plastic cover

5.4 DYEING PROCESS

The dyeing process involves the interaction of a dye with a fiber as well as the migration of the dye inside the fiber. A dyeing procedure entails the adsorption where color is transferred from a solution to the surface of the fiber, and diffusion where color is absorbed by the fiber.

The yarns are dyed first before the fabric manufacturing stage. Initially, only the body of the saree is dyed, later the pallu and blouse are dyed.

The yarns are soaked in the hot water for approximately 15 to 20 minutes to allow the dye to penetrate the fibers. Steel rods are used to lift the yarns up and down in the dye bath. This process helps ensure even and thorough dyeing of the yarns, as the movement of the yarns allows the dye to distribute evenly.

Once a particular color dyeing is done, the same water is used to dye other yarns. The process of dyeing multiple colors is done sequentially in the same dye bath without any wastage of water. After dyeing one set of yarns, different colors are added to the same water to dye the next set.

Different colors in Dyeing



Figure 61
Gold Colour



Figure 62
Sky Blue Colour



Figure 63
Pink Colour



Figure 64
Orange Colour



Figure 65
Violet Colour



Figure 66
Hydrogen powder (white)

For white color, hydrogen peroxide is used for dyeing.

And to get the Tusshar color, Brown, Yellow and Sky Blue are mixed for dyeing.

Colors are mixed in the same boiling water of the previous color to reduce wastage of water. This practice is known as "progressive dyeing" or "successive dyeing." It involves using the same dye bath for dyeing multiple batches of material. As each batch is dyed, the color in the dye bath becomes lighter. By starting with the lightest shades and moving towards darker shades, the process minimizes water wastage and maximizes the use of the dye bath.

Hydrogen peroxide is an oxidizing agent that can be used to lighten the dye.

Additive and subtractive color mixing are different methods used to create new colors or adjust the darkness of colors, depending on whether we are dealing with light or pigments.

After each component of the saree (body, pallu, and blouse) has been dyed, they are set aside for drying. The dyed yarns need to be dried completely to ensure that the colors are properly set and will not bleed or fade easily.



Figure 67



Figure 68

Adding of Colours

The yarns need to stay in the dye bath for a minimum of 15 minutes to allow enough time for the dye molecules to bond with the fibers and impart the desired color. After dyeing the saree body, pallu, and blouse fabric, the dyed yarns are set aside for drying. Drying is a crucial step to ensure that the dye molecules have fully bonded with the fibers and that the colors are permanent and won't easily wash out or fade.



Figure 69



Figure 70

Yarns are dipped into the boiling water

Gloves are worn to protect their skin from heat and chemicals while dyeing because of the high temperature.



Figure 71

After the yarns have been immersed in the dye bath, a steel rod or similar tool is used to twist the yarns upwards and downwards. This twisting action helps the dye penetrate deeper into the yarn fibers, ensuring even color absorption and distribution. Periodically they turn and twists the yarns every 2 minutes. This consistent movement helps the dye to reach all parts of the yarn, minimizing any potential uneven coloring.

After multiple turns and twists, they tightly twist the yarns for a final period of 15-20 minutes. This step is likely done to remove excess water from the yarns.



Figure 72



Figure 73

Turning and twisting of the yarns



Figure 74
Draining the water by twisting

5.5 WASHING AFTER DYEING

After dyeing the yarns are kept for drying nearly for 10 min. Later, the yarns are washed in the cool water, it ensures the potential unbinding of dye occurs at a very slow rate. Because hot water dilates the fibers and cause the dye to come out. So, using cool water for colors protect from damaging of the colors from fibers.

The yarns are dipped into the cold water at first and later in acid water and washed thoroughly. Acetic Acid is used in the water to wash the yarns after dyeing.

For every wash acid should be added, by using acid while washing the yarns increases the luster in the yarns and gives softness to the yarns.

It is used to neutralize the yarns to not impact the color shade of the yarns, it controls the Ph value in wash bath.

It keeps the yarns to contain its colour without losing it from washing. Washing of yarns through hands with very little agitation without rubbing or twisting the yarns will assure to maintain its colour with softness and luster. Hot water dyes have a dye temperature of at least 60 degree C (Better 80-85 degree C). so, after dyeing the cool water is used to wash the yarns. By using acid during the washing process, it can be achieved without negatively impacting the color shade or damaging the fibers. It is an essential step in the post-dyeing treatment that ensures the final yarn product is not only colorful but also lustrous, soft, and well-balanced in terms of pH and colorfastness.



Figure 75
Washing in cool water with acid

5.6 DRYING

After dyeing process, they dry the yarns in natural way to remove excess water after the dyeing process. The sun's warmth and airflow aid in evaporating the water from the yarn, leaves them dry and get ready for further process. The duration for which the yarns are kept under the sun can indeed vary depending on the prevailing climatic conditions. In hot and sunny weather, the drying process can be relatively quick, and an hour is sufficient to dry the yarns thoroughly. Here wrap and weft yarns are separately tied before supplying the yarns to the weaver.



Figure 76
Yarn Drying



Figure 77



Figure 78

5.7 BEATING PROCESS

The beating process helps to align the fibers and create a more even and uniform surface, which can enhance the fabric's appearance and feel. During the beating-up process, mechanical force is applied to the fabric using a steel rod or other suitable tools. It is done to compact the fabric and improve its smoothness, luster, and softness.



Figure 79

Before Beating



Figure 80

After Beating

6. WEAVING UNIT

Steps in Weaving Unit

- Yarn Separation
- Design (motifs) – In yarns
- Yarn Attachment
- Weaving

Raw materials are exported from Bangalore and Surat, Silk from the Bangalore and Zari from Surat.

6.1 YARN SEPERATION

Yarns are laid on the stands from one end to other end, this process is done for separating each and every yarn for easy weaving and to get rid of broken yarns.



Figure 81



Figure 82

Yarn Laying

While laying the yarns are beaten by sticks to check the strenghtens of the yarns. Typically, they lay 6 to 8 sarees at a time (1 saree = 252 inches).



Figure 83
Yarn-Beating

They create a loop for easy attachment, where each group of yarns contains 100 strands in every 45 group yarn strands, which are united and knotted. The boarder consists of more than 2800 strands, sometimes it depends upon the design.



Figure 84
Yarn Loops



Figure 85
Separation of yarns

The yarns are first separated and tied to differentiate the weft and wrap yarns later it is layed and straightened without any damages in the yarns.

The yarns are continuously attached to the old yarns to avoid the risk, later old yarns are trimmed, it is a time-consuming process. When separating the wrap and weft yarns, sticks are used to distinguish the strands for up and down separation. The warp and weft yarns are separated up and down for easy attachment in handloom and for making design(motif).



Figure 86
New yarns are attached to old yarns



Figure 87



Figure 88

Separation of wrap and weft yarns using sticks

After the process, the yarns are winded around the sticks, which will be sent to the design unit.



Figure 89



Figure 90

Yarns are winded around the sticks



Figure 91

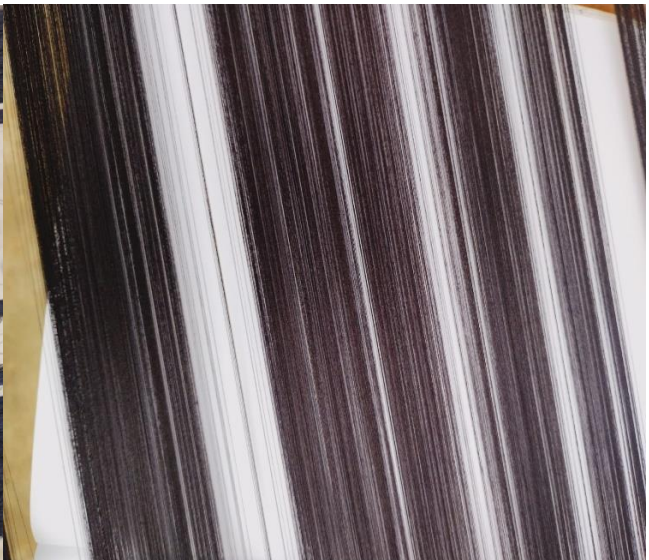


Figure 92

Before and after laying

After laying the yarns get strengthen and sent for design (motif) process and later for weaving unit.

6.2 DESIGN (MOTIFS) – IN YARNS

This is the process of locking the motif designs in the yarns before weaving, three meters of thread, with 288 strands wrap and weft yarns are designed for a single saree.

The thin stick is used to count the yarns for the design using graph calculations, the graph design contains many boxes which are counted as yarns.



Figure 93
Design marking in yarns using sticks



Figure 94



Figure 95

Design Discussion

The design is flipped to the strands using the sticks, and the other thread secures the knot, fisherman threads are used to secure the knots. It takes the help of cardboard or any flat object to lock the design by using fisherman threads which secures the design tightly.



Figure 96



Figure 97

Locking the Design

Later at last the designs of weft and wrap yarns are locked together. There are several types of locking like single Butta, entire body design, and boarder designs, every single motif is locked separately and finally a complete saree's motif designs are locked together using other thread before setting into the handloom.



Figure 98

Motif designs are locked together

6.3 YARN ATTACHMENT

After the design process, the yarns are attached to the older yarns in the back beam which passes the yarns to weave in the handloom machine. This process is done to secure the edge yarns of the saree while weaving, by holding the yarns until the saree is completed. Later the edge yarns are trimmed after the completion of the saree.



Figure 99



Figure 100

Yarns Attachment

The yarns are twisted by using wax and ash or oil to the yarns, which helps them to twist the yarns perfectly.



Figure 101
Wax and Ash

The yarns are attached by twisting the old and new yarns by crisscross (one wrap and one weft yarn) continuously. In this process every single yarn is twisted, it consumes nearly 6 hours to complete a single saree yarn twisting.



Figure 102



Figure 103

Yarn Twisting

6.4 WEAVING

Parts Of Handloom Machine



Figure 104

Shuttle with
Weft Yarn



Figure 105

Treadles



Figure 106

Wrap Beam



Figure 107
Handle



Figure 108
Shaft Frame



Figure 109
Reed

Silk Thread (Wrap Yarns) And Zari Winding.

In the process of weaving the saree, silk yarns and golden Zari are winded on the spindle for making the motif designs. 200 Zari reels are needed to weave a single saree.



Figure 110
Spinning Wheel

Zari threads is widely used for weaving, original Zari has the unique characteristic of being created using pure gold and silver. This Zari threads are sourced from Surat; the dull Zari threads are called as Kora.

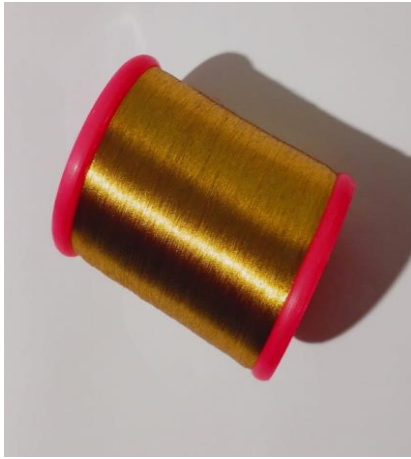


Figure 111



Figure 112

Golden Zari Reel



Figure 113



Figure 114

Silver Zari Reel

Weaving Process

To weave a saree, starting by setting up the loom, which is the framework used for weaving. This involves assembling the loom, attaching the warp beam, and securing the warp threads to the loom. The warp yarns are the long threads that run parallel to each other on the loom. The shuttle holds the weft yarn and is used to pass it through the warp threads.

By positioning the shuttle at one edge of the warp yarn, this is known as selvedge. By passing the shuttle through the warp yarns, it goes over and under the alternating threads while weaving.

After passing the shuttle through the warp yarns, the tool called beater or reed is used to push the weft yarn tightly against the previous row of weft yarns. Continue to pass the shuttle back and forth through the warp yarns, to create rows of weft. The beater is used to beat the weft after each pass, to ensure a consistent and tightly woven fabric.



Figure 115
Motif Design Weaving

To create a pattern in saree, the manipulative warp thread tools like harnesses or treadles are used. This allows to raise and lower specific warp threads, creating different patterns or designs in the saree. Once the saree is woven, cut the weft yarns by leaving a tail for securing the fabric. At last, the fabric is removed from the loom and the ends are secured to prevent from raveling of yarns from the saree.



Figure 116
Pick Handloom Machine

Traditional Jamdani Saree's after Weaving



Figure 117



Figure 118
Jamdani Saree's



Figure 119

7. CONCLUSION

The internship program was a great opportunity for me to share my experience in handloom industry. During this practical training, I have exposed various units under the handloom industry which is designing unit, dyeing unit and handloom unit. It has been an enriching and transformative experience that has provided me with invaluable insights into the world of textile production. I had the privilege of working closely with skilled weavers and artisans, witnessing their dedication to their craft, I learned to develop custom patterns and motifs and how the actual process of the work is done from the beginning to end. I experienced a supportive environment, where our team members from different departments worked together seamlessly. I extend my heartfelt thanks to all the staffs and mentor at the unit for their guidance and support throughout my internship journey.



Figure 120

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