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Computer Aided Motif Designing: Development of Tool and Comparative Study

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ABSTRACT

The garment industry is rapidly growing with new concepts for keeping fashion alive. To survive in the fashion industry innovations are necessary. Embroidery is one of the most ancient forms of artistic expression practiced by humankind. It is a technique that creates texture and adds value on the fabric by decoration.

In the present work motifs have been generated by the development of algorithm and programming in C++ and is compared with the motifs developed using Reach Fashion Studio(3D) and CorelDraw(2D) software.

Keywords :— Motif, garment, Reach Fashion Studio, Corel Draw, C++

I. INTRODUCTION

In the fashion world generation of new ideas or garment designing processes do find an important role as they tend to find new solutions of problems. Designers goal and personal creativity must look beyond that which already exist and find new combinations of ideas and materials that can satisfy people's needs and desires [1].

Good designs must reflect works that are special and original, thereby awakening the interest of the viewer to have the edge of going for such attires[2].

India had always been known as the land that portrayed cultural and traditional vibrancy through its conventional arts and crafts. Every region in India has its own style and pattern of art, which is generally known as folk art. Admittedly the creation of things for use is the basic motivating force in the practical operations of man. Designer's endeavors have never been merely utilitarian. To beautify the design is an inherent desire of a designer and a designer uses all the tools to beautify a garment. Since, the day man began to give shape to the materials provided by nature for meeting his rudimentary requirements, he has never been able to resist the inward urge to adorn and beautify his possessions and surroundings. All these efforts have led to the creation of motifs from different origins, organizing them in suitable layouts. This gave the uniqueness to the motifs used in traditional Indian textiles.

Today, the whole profile of industry is transforming to new designs and innovations. There could be many ways of dealing with these challenges that are commonly applied in the existing framework. However, one area that has been left untouched is to create a strong interface between design and technology. We need to stop thinking technology only as vehicle to productivity and design as some commodity that is used as add on for making the product good looking. Although these functions of technology and design are very legitimate but when we think about an interface of these two, they would need to break the barriers and play a critical role in every aspect of contemporary Indian business [1].

The mutual inter-dependence of design and technology has little been put to practical use for the benefit of the user.

Motifs are often inspired from nature and are also closely linked to natural, cultural, religious and socio-economic factors prevailing in any society and can be seen as an object of beautification.. Motifs are repeated in different ways to create patterns and these patterns are repeated to create a design. Motif has a distinct identity of its own in a pattern or design.

In the present work we propose the development of algorithm and programming in C++ for the creation of motifs and for creating patterns of motifs. The motifs generated by the proposed programming method is compared with the motifs developed by commercially available tools like Reach Fashion Studio (3D) and CorelDraw(2D).

II. DEVELOPMENT OF ALGORITHM AND PROGRAMMING FOR EMBROIDERY MOTIF DESIGNING

Algorithms for embroidery motif designing have been developed. In the present work algorithm for concentrated motif is formulated and described herein below. Flowchart for the given algorithm is provided in figure 1 given below.

ALGORITHM FOR CONCENTRATED MOTIF

1. Take a circle and mark it at even intervals.

2. Connect one mark to another mark. The amount of marks skipped determines the size of the concentric circle created.

3. Take the next mark and connect it to the mark ahead of the one you connected the previous one to. Continue doing this.

4. The circle is completed.

5. Use inside circle as a starting point for creating another circle.

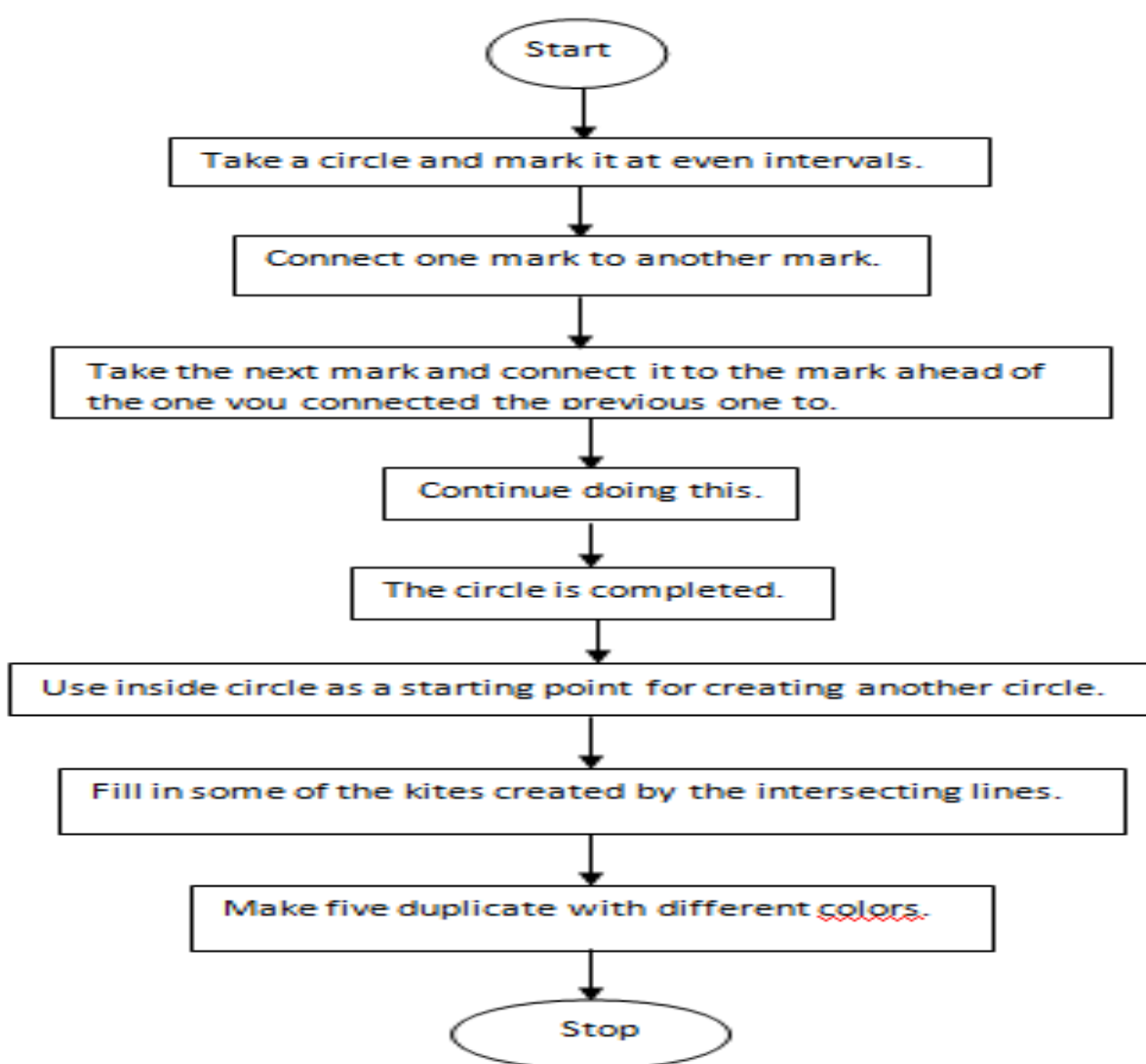6. Fill in some of the kites created by the intersecting lines

Fig. 1 Flowchart for concentrated circle.

III. RESULT AND DISCUSSION

Through programming in C++ an attempt is made to create motifs. Algorithm as developed is executed using C++ language. The motifs created by the developed program have been recreated using commercially available Corel Draw and Reach Fashion Studio CAD tools used in fashion industry. To compare the motifs, one particular motif is created using the commercially available software and through the developed program and the same are shown in fig. 2, 3, and 4.

CONCENTRATED MOTIF
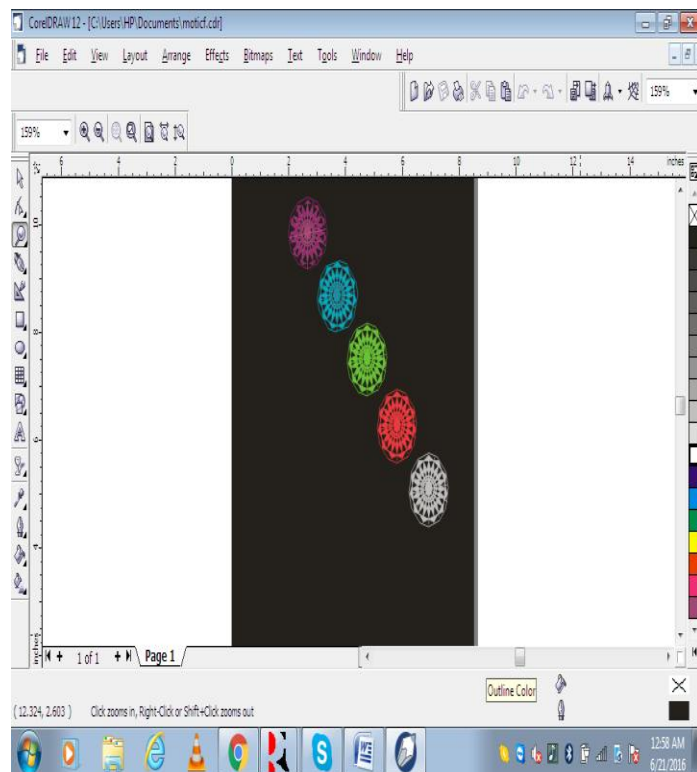
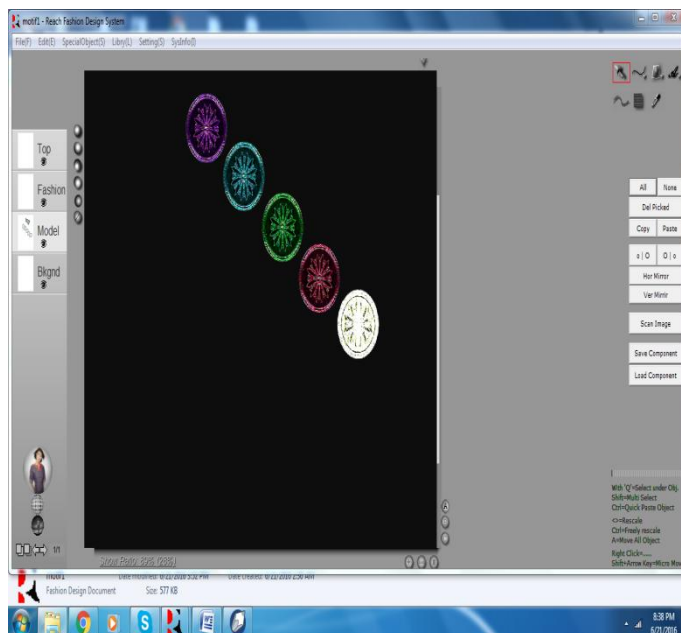Fig. 2 Concentrated circle motif is created using Corel Draw

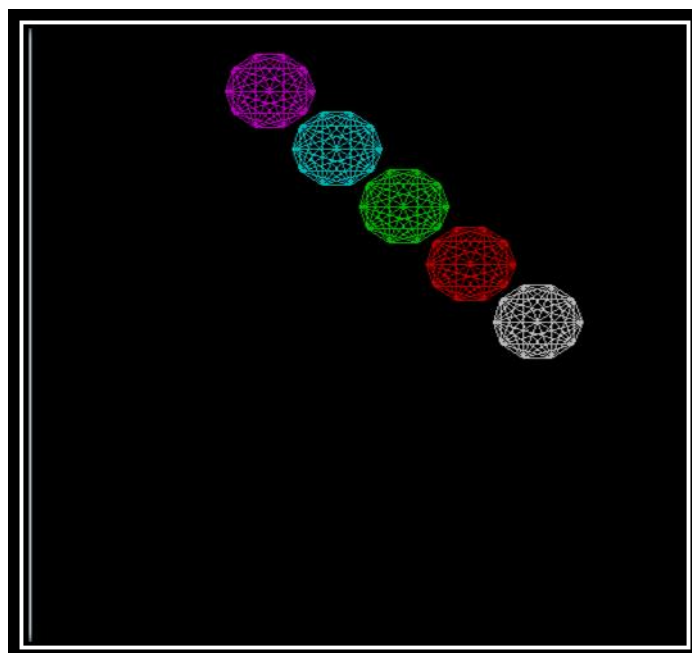Fig. 3 Concentrated motif is created using Reach Fashion Studio

Fig. 4 Concentrated motif developed and generated using C++ Programming Language

Concentrated motif pattern is drawn by all the methods as described above. From the perusal of figures 2 (Corel Draw), 3 (Reach fashion Studio) and 4 (by programming) it is clear that the motif drawn by Corel Draw lacks the finer details of the motif and color blurring is also apparent. Color perception is better in the output generated by Reach fashion Studio as compared to Corel draw but not better than the output generated by the developed program. The output

generated by the programming method is better in the sense that the finer details of the motifs are clearer than that of the other software's and also the colors are bright which gives a better visual output.
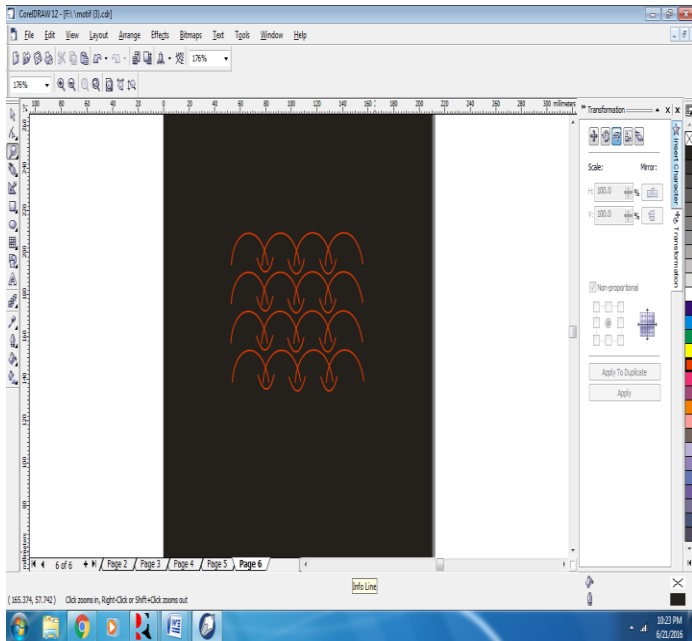
WAVE MOTIF

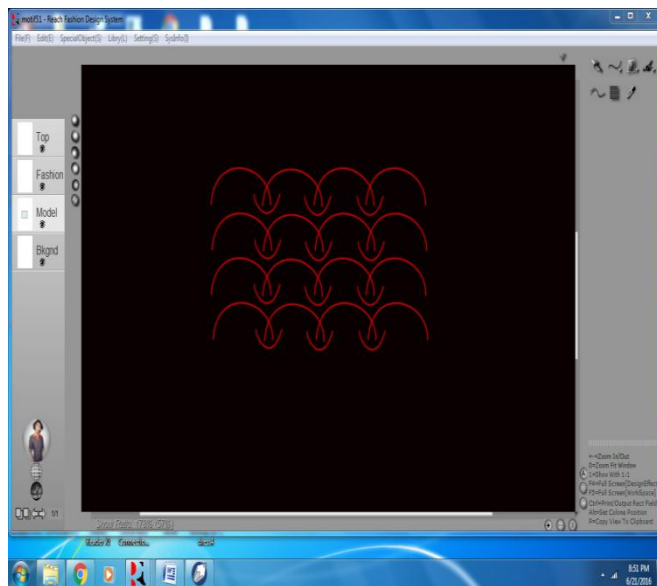Fig. 5 Wave motif is created using Corel Draw

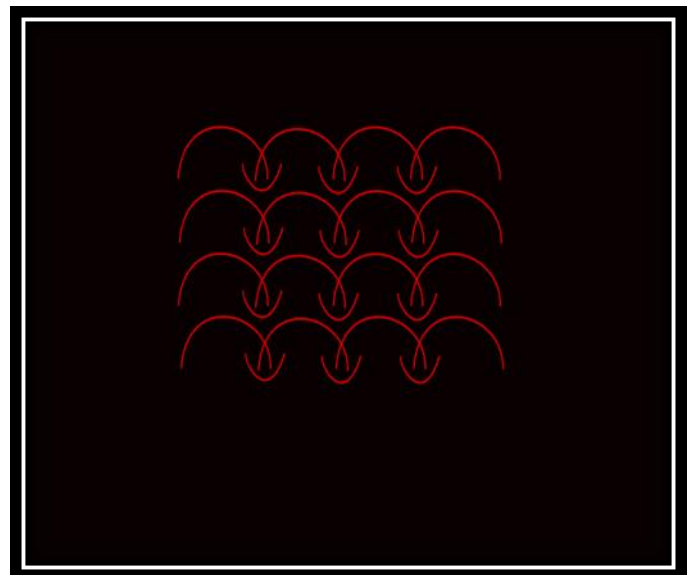Fig. 6   Wave motif is created using Reach Fashion Studio

Fig. 7 Wave motif is created using C++ programming language

Wave motifs are also drawn through all the three methods discussed above. A perusal of figures 5, 6 and 7 once again prove the visual superiority by programming method**.**

IV. CONCLUSION

The motifs which are developed by using C++ programming are more systematic, accurate and can be changed with the use of change in parameters given in the program. Motifs created through Corel Draw and Reach Fashion Studio software are designed manually through creating lines and sketches and requires repetitive changes like redrawing and erasing. The time taken to draw a motif in Corel Draw or Reach Fashion Studio are time consuming whereas in the program developed the same can be designed in a small time as compared to the other software's. Therefore, it can be safely concluded that the motifs created through the developed program can be easily created within no time and as per the user's specification.

There are many 2D as well as 3D software's available in the market for motif designing but the new tool developed in the present work establishes the visual superiority over the commercially available tools. The visual output generated by the programming method developed in the present work is sharp and clear as any 3D motif (created by RFS) and too superior to any 2D motif (Corel Draw). Although the range of colors used in this software is limited as compared to other software's in the market, it is still the sharpest of all the

motifs created by other commercially available tools and it is as good as in any commercial software.

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