

## **DESIGN OF TWO DIMENSIONAL (2D) KADUNA POLYTECHNIC LOGO USING COMPUTER AIDED DESIGN**

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### **ABSTRACT**

*A great logo does more than just represent a company, organisation, product or services. It evokes an emotional response. Constructing a good logo must require the involvement of graphic and geometric design to produce the standard perfection according to the appearance of the logo. This paper discusses the design of Kaduna Polytechnic logo using computer aided design (CAD) software. The logo comprises the frame, the spider and its web, the hexagon, the curved ribbon, the double web and the heraldic shield respectively. Coordinates of the entities in the logo were labeled and tabulated for digital design both in soft and hard copy.*

***Keywords:*** *Two dimensional, Logo, Computer aided design, Spider*

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### **INTRODUCTION**

Numerous inventions and techniques have contributed to the contemporary logo, including [cylinder seals](#), [coins](#), [trans-cultural diffusion](#) of [logographic](#) languages, [coats of arms](#), [watermarks](#), [silver hallmarks](#) and the development of [printing technology](#) (Logo, 2015). A great logo does more than just represent a company, organisation, product or services. It evokes an emotional response. It creates desire. And, the very best logos forge a sense of community among the people who love the brand (Logoworks, nd).

To design is much more than simply to assemble, to order, or even to edit; it is to add value and meaning, to illuminate, to simplify, to clarify, to modify, to dignify, to dramatize, to persuade, and perhaps even to amuse. Design broadens perception, magnifies experience, and enhances vision. Design is the product of feeling and awareness, or ideas that originate in the mind of the designer and culminate, one hopes, in the mind of the spectator. Good logos, only after it becomes familiar does a logo function as intended; and only when the product or service has been judged effective or ineffective, suitable or unsuitable, does it become truly representative (Rand, 2006)

Constructing a good logo must require the involvement of graphic and geometric design to produce the standard perfection according to the appearance of the logo. A reliable tool to achieve this is the computer-aided design (CAD). This involves the application of computer and interactive graphic software to aid and enhance the product design from conceptualization into documentation (Yarwood, 2007).

The Kaduna Polytechnic symbol, "spider and its web" (Gizogizo), the Gizogizo, which in many Nigerian and West African folklores symbolizes a hero, which by its sharpness, industry and tenacity always comes on "top"; this aptly symbolises Kaduna Polytechnic's desire to excel in and spread its services. The hexagonal shape of the crest symbolises the then six Northern States; the original owners of the institution (History, 2012).

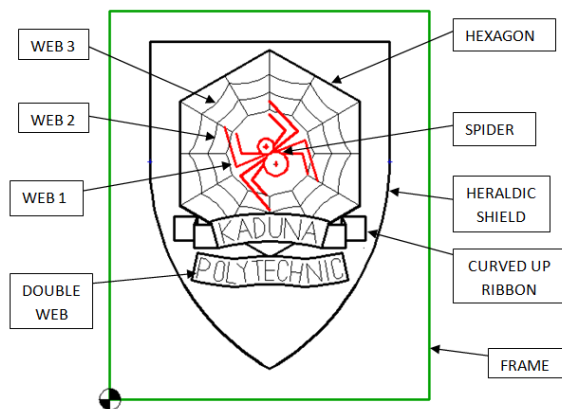
### Methodology

AutoCAD software was used for the design of this logo; the entities edges were labeled using numbers, alphabets and alpha numeric characters. The coordinates (x and y) of these edges and centers of the entities were tabulated. Different layer, lines, line width, line colors, fonts etc where used for the design.

Kaduna polytechnic logo comprises of six major parts namely:

- Spider
- Web
- Hexagon
- Heraldic shield
- Curved up ribbon
- Double web
- Frame

Though the logo is one, each reference part is bolded and labeled as shown below:

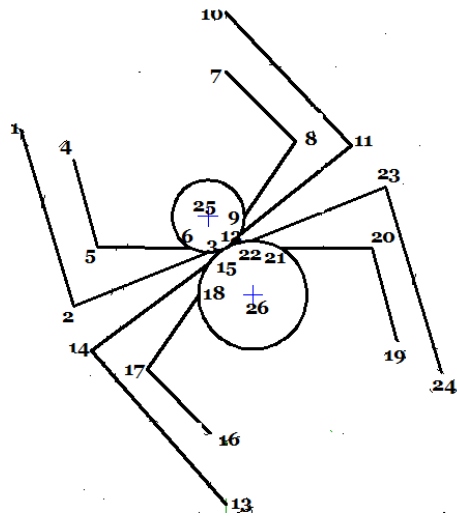


**Fig. 1: Complete Logo  
Coordinates of the spider**

Point	X	Y
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1	26.9	63.8
2	29.6	54.7
3	36.5	57.4
4	29.6	62.3
5	30.8	57.8
6	35.6	57.7
7	37.5	66.8
8	41.1	63.2
9	38.5	59.3
10	37.5	69.9
11	44.0	63.0
12	38.4	58.7
13	37.5	44.4
14	30.6	52.4
15	36.6	56.8
16	36.7	48.0
17	33.4	51.4

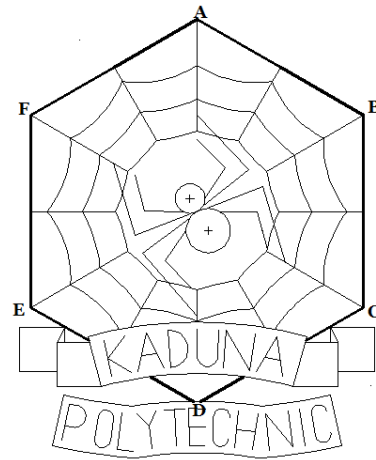
18	36.1	55.2
19	46.4	52.8
20	45.1	57.7
21	40.3	57.7
22	38.9	58.1
23	45.8	60.8
24	48.7	51.2
25	36.6	59.3
26	38.9	55.3



**Fig. 2: Spider**

**Coordinates of the hexagon**

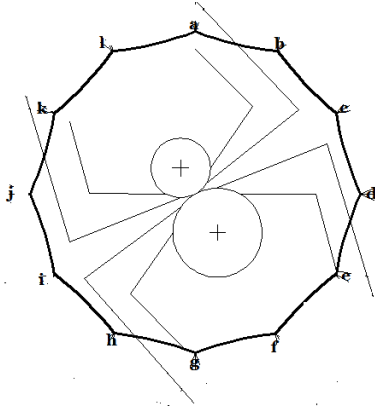
Point	X	Y
A	37.5	82.1
B	58.6	69.9
C	58.6	45.5
D	37.5	33.6
E	16.4	45.5
F	16.4	69.9



**Fig. 3: Hexagon**

**Coordinates of web 1**

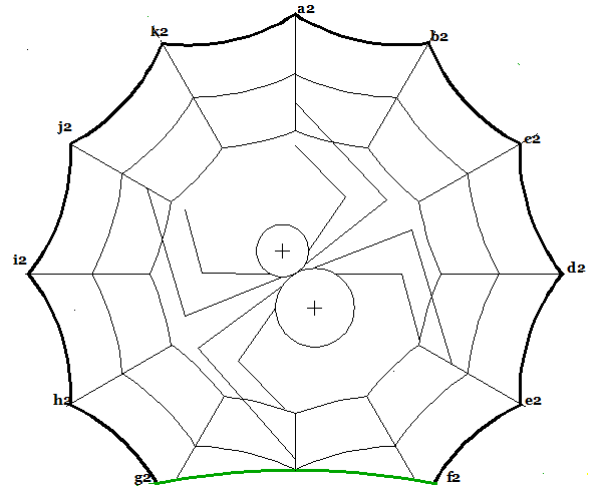
Point	X	Y
a	37.5	67.9
b	42.7	66.7
c	46.4	62.8
d	47.9	57.7
e	46.3	52.6
f	42.6	48.4
g	37.5	47.7
h	32.4	48.9
i	28.6	52.6
j	27..1	57.7
k	28.6	62.8
l	32.3	66.7



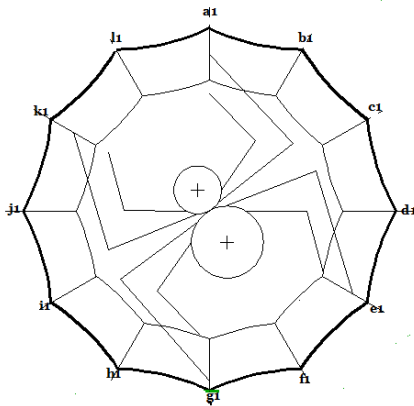
**Fig. 4: Web 1**  
**Coordinates of web 2**

Point	X	Y
a1	37.5	72.0
b1	44.8	70.3
c1	49.9	64.8
d1	52.1	57.7
e1	49.9	50.5
f1	44.6	45.3
g1	37.5	43.7
h1	30.4	45.4
i1	25.1	50.5
j1	23.0	57.7
k1	25.0	65.2
l1	30.2	70.3

c2	53.6	67.0
d2	56.6	57.7
e2	53.7	48.4
f2	47.4	42.7
l2	27.6	42.7
h2	21.4	48.4
i2	18.4	57.7
j2	21.4	67.0
k2	28.0	74.2



**Fig. 6: Web3**



**Fig. 5: Web 2**  
**Coordinate of web 3**

Point	X	Y
a2	37.5	76.2
b2	47.0	74.2

**Coordinate of curved up ribbon**

Point	X	Y
X1	15.0	42.9
X2	20.6	42.9
X3	19.7	41.1
X4	20.6	41.1
X5	23.8	41.1
X6	23.8	41.1
X7	51.4	41.8
X8	51.2	41.1
X9	54.4	41.1
X10	54.4	42.9
X11	55.3	41.1
X12	60.0	42.9
X13	60.0	37.3
X14	55.3	37.3
X15	55.3	35.4
X16	49.7	35.4
X17	25.3	35.4
X18	19.7	35.4
X19	19.7	37.3

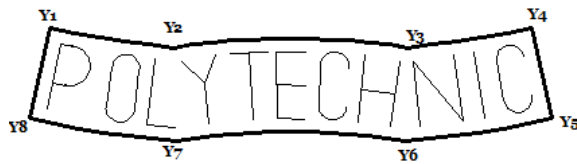
X20	15.0	37.3
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**Fig. 7: Curved up ribbon**

**Coordinate of double wave**

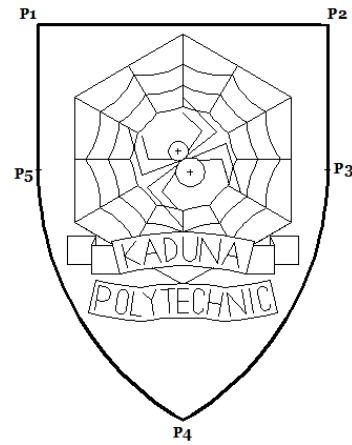
Point	X	Y
Y1	20.5	34.3
Y2	29.4	33.0
Y3	45.8	32.9
Y4	54.5	34.3
Y5	55.9	27.9
Y6	45.5	26.3
Y7	29.5	26.3
Y8	19.1	27.9



**Fig. 8: Double web**

**Coordinate of the heraldic shield**

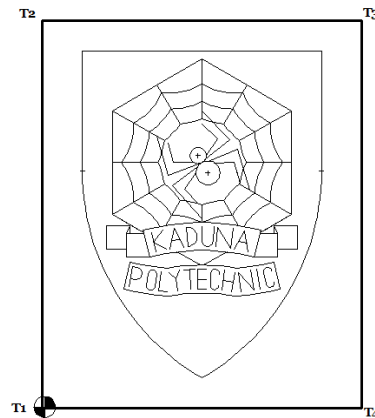
Point	X	Y
P1	9.4	83.9
P2	56.6	83.9
P3	65.6	56.3
P4	37.5	7.1
P5	9.4	55.3



**Fig. 9: Heraldic shield**

**Coordinate of the frame**

Point	X	Y
T1	0.0	0.0
T2	0.0	91.0
T3	75.0	91.0
T4	75.0	0.0



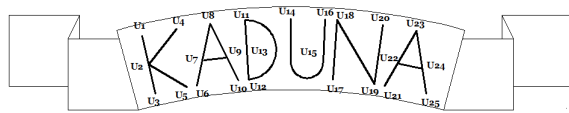
**Fig. 10: Frame**

**Coordinates of letters Kaduna**

Point	X	Y
U1	25.6	41.3
U2	26.1	39.2
U3	26.7	36.8
U4	28.3	41.9
U5	29.2	37.3
U6	30.0	37.4

U7	30.5	39.4
U8	31.1	42.3
U9	32.3	39.6
U10	33.3	37.8
U11	33.8	42.6
U12	34.1	37.9
U13	34.0	40.4
U14	37.5	42.7
U15	38.8	39.3
U16	40.3	42.6
U17	40.9	37.9
U18	41.2	42.6
U19	44.2	37.6
U20	44.8	42.2
U21	45.0	37.4
U22	46.0	39.1
U23	47.6	41.6
U24	48.0	38.8
25	48.3	36.8

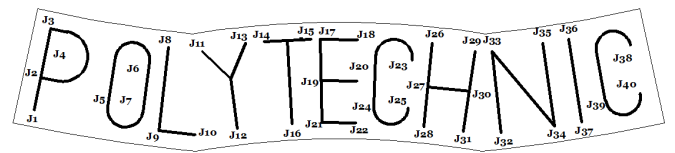
J23	40.6	31.6
J24	39.5	28.9
J25	40.4	28.8
J26	42.8	32.4
J27	42.5	29.9
J28	42.3	27.7
J29	45.2	31.9
J30	44.8	29.7
J31	44.5	27.4
J32	46.6	27.4
J33	46.1	31.9
J34	49.7	27.8
J35	49.0	32.4
J36	50.5	32.5
J37	51.2	28.0
J38	53.0	32.1
J39	52.5	29.0
J40	53.5	29.4



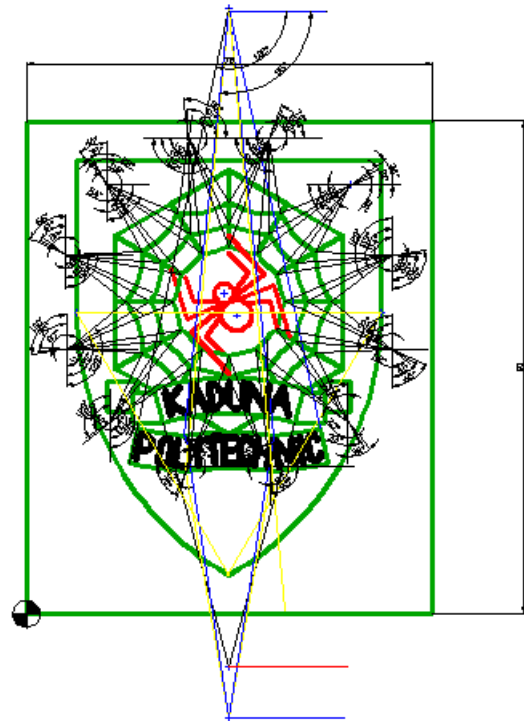
**Fig. 11: Kaduna**

**Coordinates of Polytechnic**

Point	X	Y
J1	20.3	28.6
J2	20.7	30.5
J3	21.3	33.2
J4	21.9	31.7
J5	24.5	29.0
J6	25.9	31.5
J7	25.5	28.7
J8	27.9	32.2
J9	27.4	27.5
J10	29.4	27.3
J11	29.8	31.9
J12	31.8	27.6
J13	32.2	32.4
J14	33.3	32.5
J15	35.9	32.6
J16	34.9	27.9
J17	36.4	32.6
J18	38.6	32.6
J19	36.5	30.3
J20	38.5	30.3
J21	36.5	28.0
J22	38.5	27.9



**Fig. 12: Polytechnic**



**Fig. 13: Angular displacement of the logo**



## **Conclusion**

The logo which was first designed in 1960s by local artist Mr. Alexius Enche, with the Gizogizo which in many Nigerian and West African folklores symbolizes a hero, which by its sharpness, industry and tenacity always comes on "top"; this aptly symbolizes Kaduna Polytechnic's desire to excel in and spread its services. The symbols suffers serious alteration since then, the use of computer aided design to identify the coordinates of all the entities contained in the logo will set a standard in future.

## **Recommendations**

With the power of computer aided design and computer aided manufacture software, it is recommended to design and even manufacture the logo in three dimensional (3D). Program can be generated since all the coordinates are known, if fabricated in 3D, the logo on motion can be displayed at different locations like campus gates, admin blocks, theater halls, libraries, convocation grounds etc.

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