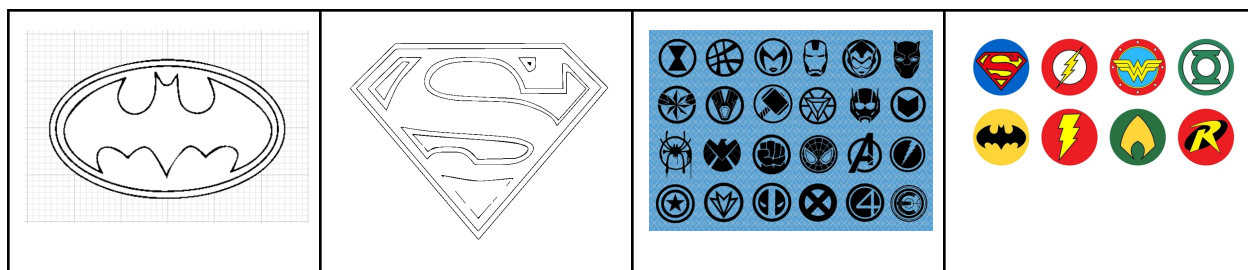

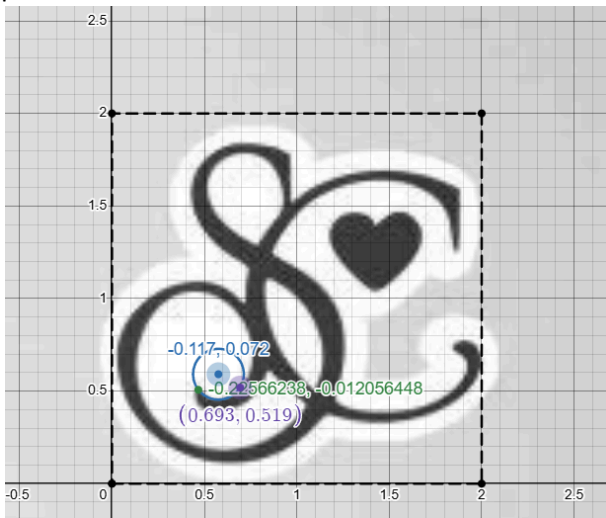


W12: Project 2.3.3 Super HERO LOGOS and G& M Codes Using Absolute Coordinates

1. Use the graph paper to design your Super Hero Logo. Remember the grid lines are $\frac{1}{4}$ in. Take a screenshot of your Super Hero Logo. On the right use the graph paper provided in class to figure out the coordinates for your design. You may use PLTW Software available on your computer to figure out the measurements if that is easier for you to sketch out your design. Remember you still need to future out your coordinates for the GM Code.

Image of Super Hero Logo Inspiration	Sketch with measurements in inches.
	<p>Replace the image below with your design and measurements sketched on the graph paper provided in class.</p> 

2. Use the NC Code Planning Worksheet to map your code. Type the code with comments below. Type the GM Code for your Super Hero Logo.

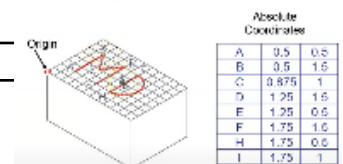
3. Use the space provided below to type your code with comments and take a screenshot of your code on the NC Viewer Software.

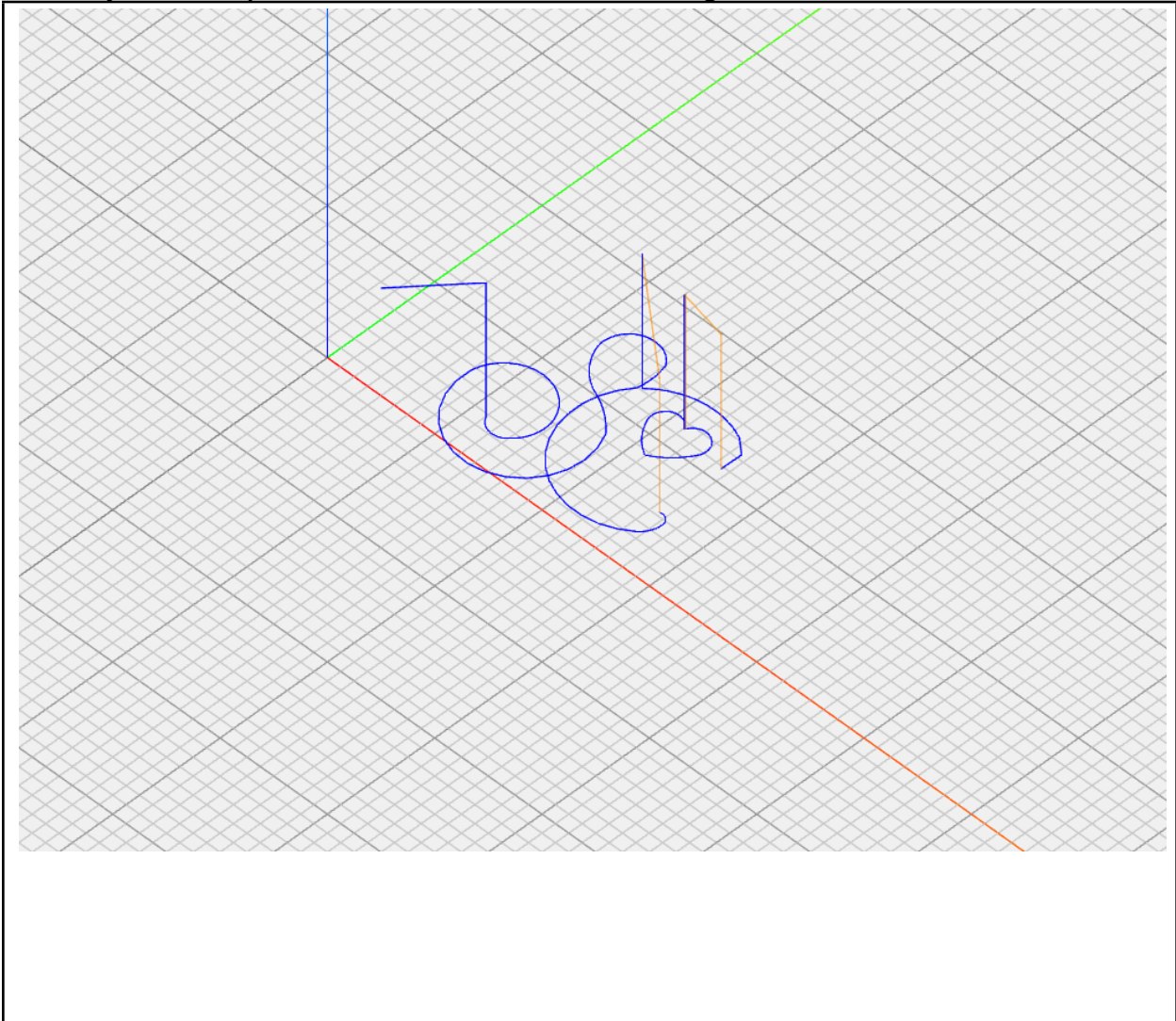
Screenshot of NC Viewer Code	Type the code:
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W12: Project 2.3.3 Super HERO LOGOS and G& M Codes Using Absolute Coordinates

GCode File	
1 G90 G20	G90 G20
2 G00 X0.5 Y0 Z1; starting absolute position	G00 X0.5 Y0 Z1; starting absolute position
3 G91	G91
4 G01 X0.4536 Y0.524; relative starting point	G01 X0.4536 Y0.524; relative starting point
5 G01 Z-1.25; plunge	G01 Z-1.25; plunge
6 G03 X0.22887 Y-0.04674 I0.1334 J0.0695	G03 X0.22887 Y-0.04674 I0.1334 J0.0695
7 G03 X0.10268 Y0.34889 I-0.202 J0.249	G03 X0.10268 Y0.34889 I-0.202 J0.249
8 G03 X-0.7125 Y-0.05843 I-0.347 J-0.124	G03 X-0.7125 Y-0.05843 I-0.347 J-0.124
9 G03 X1.04517 Y0.20645 I0.557 J-0.071	G03 X1.04517 Y0.20645 I0.557 J-0.071
10 G03 X-0.33345 Y0.22811 I-0.621 J-0.55	G03 X-0.33345 Y0.22811 I-0.621 J-0.55
11 G02 X-0.28583 Y0.33259 I0.2 J0.461	G02 X-0.28583 Y0.33259 I0.2 J0.461
12 G02 X0.45034 Y0.1678 I0.246 J0.028	G02 X0.45034 Y0.1678 I0.246 J0.028
13 G02 X0.01292 Y-0.27869 I-0.59 J-0.167	G02 X0.01292 Y-0.27869 I-0.59 J-0.167
14 G03 X0.94339 Y-0.94815 I0.517 J-0.429	G03 X0.94339 Y-0.94815 I0.517 J-0.429
15 G03 X0.074779 Y0.14934 I-0.149 J0.168	G03 X0.074779 Y0.14934 I-0.149 J0.168
16 G03 X-0.09554 Y0.08208 I-0.071 J0.014	G03 X-0.09554 Y0.08208 I-0.071 J0.014
17 G00 Z1.25; retract	G00 Z1.25; retract
18 G00 X-0.89532 Y0.73375	G00 X-0.89532 Y0.73375
19 G01 Z-1.25; plunge	G01 Z-1.25; plunge
20 G02 X0.78081 Y0.1265 I0.48 J-0.49	G02 X0.78081 Y0.1265 I0.48 J-0.49
21 G01 X0.119045 Y-0.09884; resorting to a straight line	G01 X0.119045 Y-0.09884; resorting to a straight line
22 G01 X-0.0032 Y-0.1875	G01 X-0.0032 Y-0.1875
23 G00 Z1.25; retract	G00 Z1.25; retract
24 G00 X-0.4317 Y0.0893	G00 X-0.4317 Y0.0893
25 G01 Z-1.25; plunge	G01 Z-1.25; plunge
26 G03 X-0.2240 Y-0.13075 I-0.114 J-0.062	G03 X-0.2240 Y-0.13075 I-0.114 J-0.062
27 G03 X0.2096 Y-0.2232 I0.426 J0.19	G03 X0.2096 Y-0.2232 I0.426 J0.19
28 G03 X0.2599 Y0.2681 I-0.325 J0.575	G03 X0.2599 Y0.2681 I-0.325 J0.575
29 G03 X-0.24125 Y0.0934 I-0.124 J0.038	G03 X-0.24125 Y0.0934 I-0.124 J0.038
30 G00 Z1.25; retract	G00 Z1.25; retract
31 M30	M30
32	

3. Screenshot of the NC Viewer Design and Code for Super Hero Design Logo.Enter the sample code into the <https://ncviewer.com/>

Sample Part – Absolute

W12: Project 2.3.3 Super HERO LOGOS and G& M Codes Using Absolute Coordinates

4. How much does an experienced CNC Programmer of GM Code earn on average per year?

<https://www.indeed.com/career/cnc-programmer/salaries/CA>

\$94,329 / year in California

W12: Project 2.3.3 Super HERO LOGOS and G& M Codes Using Absolute Coordinates

GCode File



```
1 N01 G90 G20 ; ABSOLUTE COORD & INCH MODE
2 N02 M06 T1 ; TOOL CHANGE – LOAD TOOL 1
3 N03 M03 S3000 ; TURN SPINDLE ON CW TO 3000 RPM
4 N04 G00 X.5 Y.5 ; RAPID TO POINT A
5 N05 G00 Z.1 ; RAPID TO .1 ABOVE PART
6 N06 G01 Z-.0625 F9 ; PLUNGE 1/16 AT 9 IN./MIN
7 N07 G01 X.5 Y1.5 F18 ; STRAIGHT LINE INTERP TO B
8 N08 G01 X.875 Y1 ; STRAIGHT LINE INTERP TO C
9 N09 G01 X1.25 Y1.5 ; STRAIGHT LINE INTERP TO D
10 N10 G01 X1.25 Y.5 ; STRAIGHT LINE INTERP TO E
11 N11 G01 Z.1 ; RETRACT CUTTING TOOL
12 N12 G00 X1.75 Y1.5 ; RAPID TO POINT F
13 N13 G01 Z-.0625 F9 ; PLUNGE AT 9 IN./MIN
14 N14 G01 X1.75 Y.5F18 ; STRAIGHT LINE INTERP TO H
15 N15 G03 X1.75 Y1.5 I.125J.5; CCW CIRCLE INTERP
16 N16 G01 Z.1 ; RETRACT CUTTING TOOL
17 N17 M05 ; TURN OFF SPINDLE
18 N18 G00 Z2 ; RAPID Z TO SAFE POSITION
19 N19 G00 X4 Y3 ; MOVE TABLE TO UNLOAD POSITION
20 N20 M02 ; END OF PROGRAM
```