Green University of Bangladesh
Department of Computer Science and Engineering (CSE)

Faculty of Sciences and Engineering

Semester: (Spring, Year: 2023), B.Sc. in CSE (Day)

LAB REPORT NO #05

Course Title: Engineering Drawing

Course Code: CSE 208 Section: PC-213 DA

Lab Experiment Name:3D Work.

Student Details

	Name	ID
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Lab Date : **01/06/2023**

Submission Date : **07/06/2023**

Course Teacher's Name : Rusmita Halim Chaity

Lab Report Status

Marks: …… **Signature:……..**

Comments:…… **Date:……..**

1. TITLE OF THE LAB EXPERIMENT:

Implementation of 3D Work drawing.

2. OBJECTIVES/AIM:

- To gain the basic knowledge of 3D modeling.
- To implement the skills to develop 3D Working drawing.

3. PROCEDURE / ANALYSIS / DESIGN:

Three-Dimensional Computer-Aided Design (3D CAD) is a cutting-edge technology employed in the creation and documentation of technical designs. It revolutionizes the traditional manual drafting processes by automating them. To successfully execute this drawing, a comprehensive grasp of advanced 3D planning tools is essential. By skillfully employing these tools in conjunction with fundamental modification commands, intricate drawings can be generated with remarkable efficiency. AutoCAD files are typically saved in the widely recognized DWG file format, specifically designed for storing AutoCAD files.

3.1 List of Commands Used:

- **Circle(radius)**
- **Polar Array**
- **Trim**
- **Extrude**
- **Press Pull**
- **Diminution**

Circle(radius): Creates a circular shape with a specific radius, commonly used for representing cylindrical objects or as reference points in drawings.

Polar Array: Creates multiple copies of an object arranged in a circular pattern around a central point, useful for generating symmetrical or radial arrangements.

Trim: Removes unwanted portions of lines, arcs, or other objects by specifying cutting edges, helping to clean up drawings and improve accuracy.

Extrude: Converts 2D shapes or objects into 3D solids or surfaces by extending them along a specified path, enabling the creation of complex 3D models.

Press Pull: Pulls or pushes a face or region of a 3D solid or surface, allowing for quick modification of shapes and volumes.

Diminution: A French term often used in technical drawings to indicate a reduction

in the size or scale of an object or dimension.

4.IMPLEMENTATION:

Steps:

Create a 2D shape.

1. To drawing a Circle radius(11, 14, 17, 22.5 ,26).
2. Click Circle Command
3. Click enter.

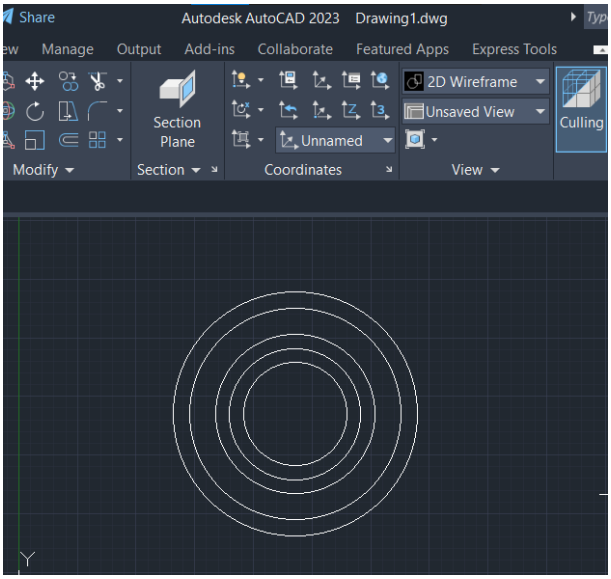

Figure-1

1. Create circle radius(2.5, 6 , 7)
2. Click Circle command
3. Create polar array which countity is 4 taking the position using 45 degree angle which the first circle array which radius is 2.5
4. Create again polar array same way which radius is 6.
5. On the other hand create polar array which radius is 7 create first tan tan radius than create polar array this time tan tan is radius 6 and radius 22.5

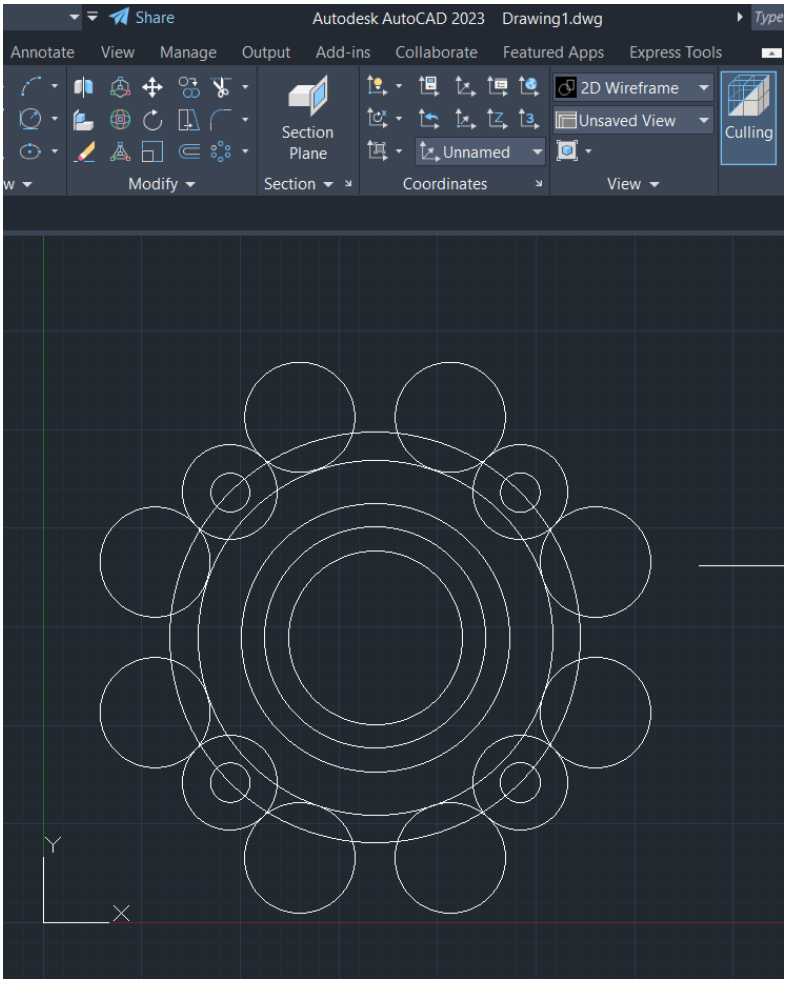

Figure-:2

1.Trim unnecessary parts.
2. Given the dimension of 2D shape

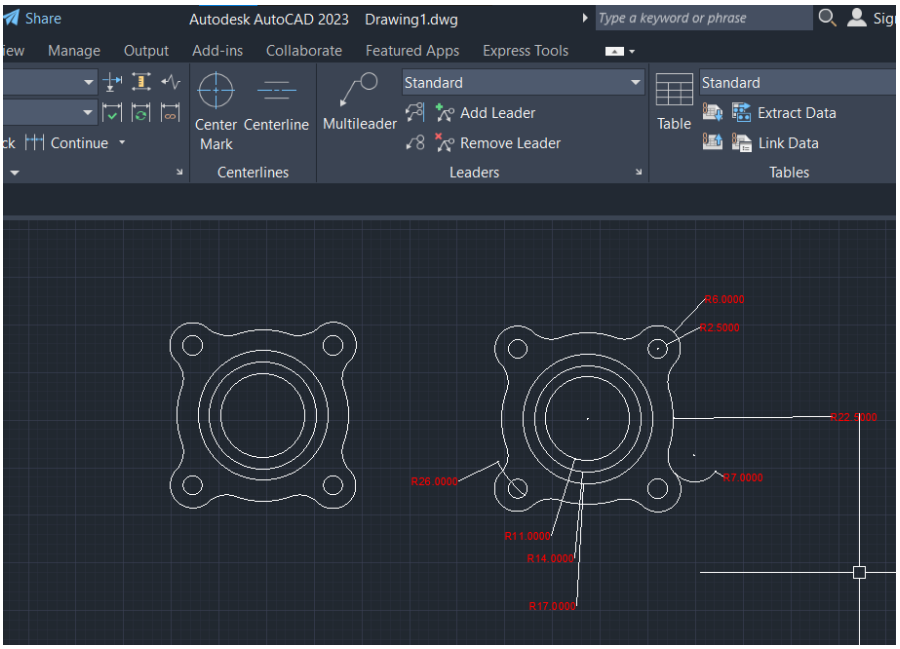

Figure-:3

Create 3D Shape

1.First time extrude all 2D shape with height 3
2. Then Presspull 5.5
3. Then presspull 3.5

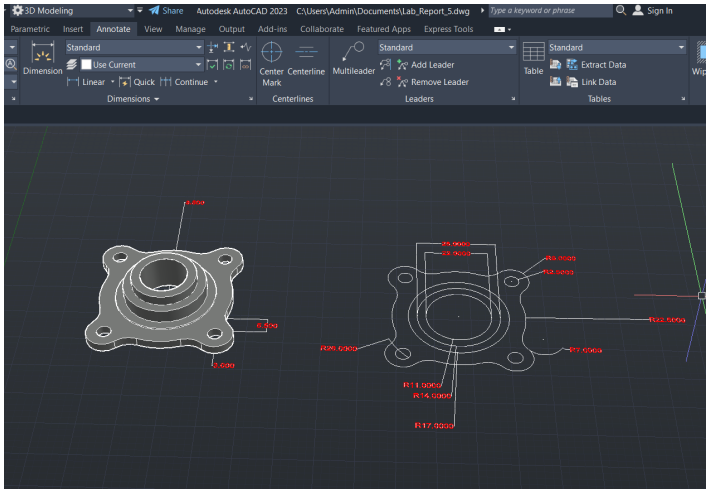

Figure-:4

5.OUTPUT:

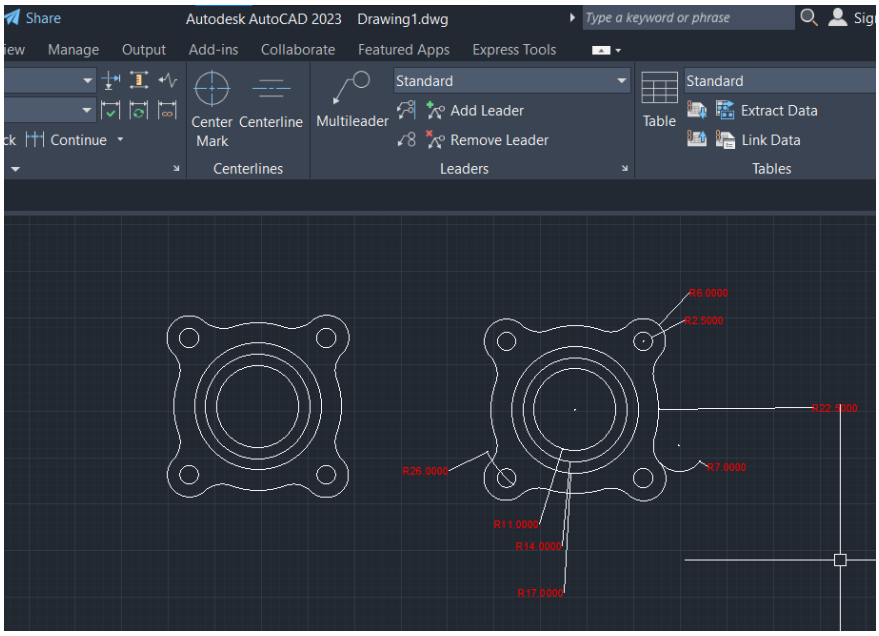

Figure-:5

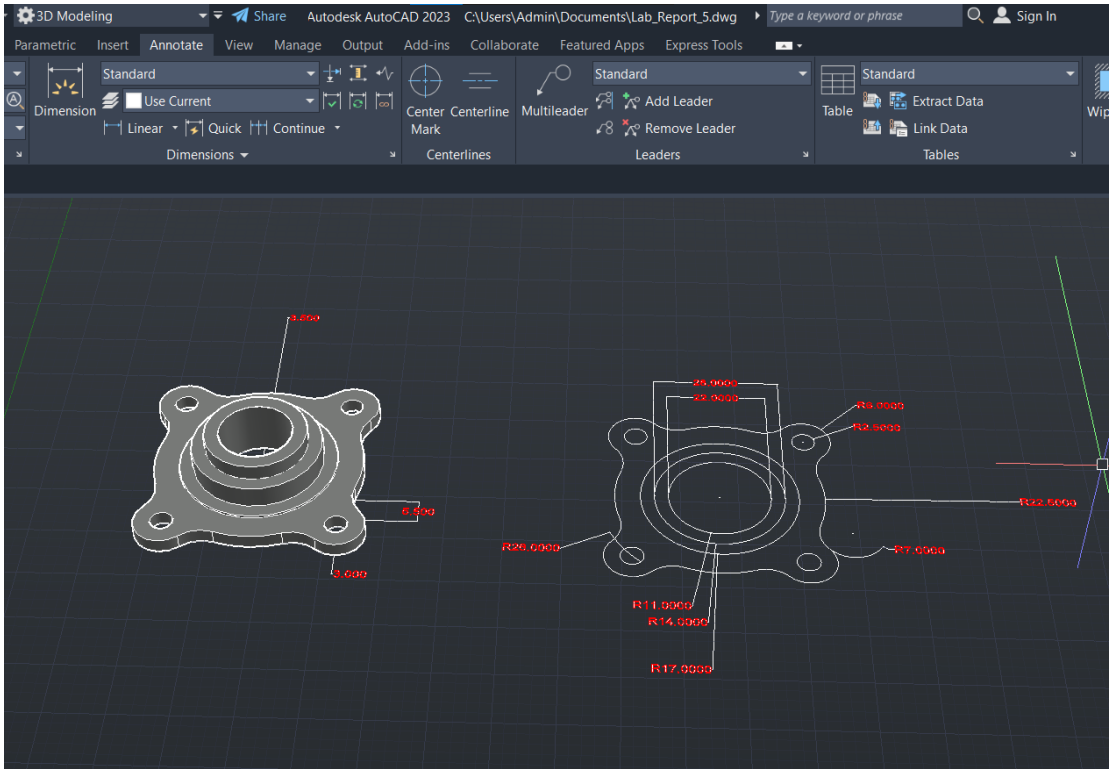

Figure-: 6

6. ANALYSIS AND DISCUSSION:

In order to deepen their understanding of basic 3D drawing, students were tasked with applying their knowledge to create a tangible object. This practical experiment offered students a chance to engage with different techniques and tools available in 3D computer-aided design (CAD) software. By successfully completing the exercise, students not only acquired hands-on skills but also developed a greater sense of confidence in utilizing 3D CAD technology for object design. This activity stimulated their creativity, honed their problem-solving abilities, and nurtured critical thinking skills, all of which are essential for real-world applications of 3D design.

7.SUMMARY:

- My ultimate goal is to attain an advanced level of proficiency in 3D design to bring real-life objects to life.

- I am resolute in my determination to become skilled in utilizing a broad range of commands, which includes circle, press pull, trim, extrude, Polar array, and Dimension Toolbar.

- Delving into the myriad applications of AutoCAD within the realm of Engineering will be a pivotal aspect of my educational journey.

- Acquiring advanced knowledge in 3D design for the purpose of creating tangible objects is my principal aspiration.

- My objective is to excel in employing diverse commands, encompassing box, cylinder, cone, sphere, pyramid, 3D mirror, and Dimension Toolbar, in order to amplify my skills in 3D design.

- I am dedicated to exploring the versatile applications of AutoCAD within the field of Engineering, as it forms a significant focal point of my learning endeavors.