

**SCHOOL OF COMPUTER SCIENCE AND ENGINEERING**

CZ2003 Computer Graphics & Visualization Lab 4 Submission

Implicit Solids

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# Lab 4 Tasks

1. Build ONE complex FShape lt using set-theoretic operations in min/max applied to at least one plane halfspace, ellipsoid, cylinder, and cone
2. Adjust the tight bounding box and the optimise resolution
3. Color the Fshape

# Lab 4 Files

Only one file is to be evaluated for lab 4: Lab4.wrl

# Task 1: Build a Complex FShape

The complex shape I have gone for is a submarine broken in half, below I have listed the different parts of the shape.

## Defining the Ellipsoid

|  |  |
| --- | --- |
| **Ellipsoid** | **Equation** |
|  |  |
| Notes: The ellipsoid forms the basic shape of the submarine | |

## Defining the Cylinders

|  |  |
| --- | --- |
| **Cylinders** | **Equation** |
|  |  |
| Notes: The cylinders were subtracted away from the ellipsoid to make it seem like there are windows | |

## Defining the Plane

|  |  |
| --- | --- |
| **Plane** | **Equation** |
|  |  |
| Notes: The plane defined will be subtracted from the shape to make it seem like it was split into half | |

## Defining the Cones

|  |  |
| --- | --- |
| **Cones** | **Equation** |
|  |  |
| Notes: The cones will represent the fins of the submarine | |

# Task 2: Adjust Bounding Box and Optimise Resolution

|  |  |
| --- | --- |
| **Bounding Box and Resolution** | **Showing the Bounding Box** |
|  |  |

# Task 3: Color the Fshape

|  |
| --- |
| **Coloring Fshape** |
|  |