

## **ABSTRACT**

*This final project presented a two-dimensional simulation using Smoothed Particle Hydrodynamics (SPH). Object based fluid can be modeled using particle systems. Implementation of a system of particles one of which is modeling the fluid. Basically modeling fluid governed by the Navier-Stokes equations and continuity. In completing these equations can be used method Smoothed Particle Hydrodynamics (SPH). SPH is a method commonly used for animation applications, lava flow simulation and modeling fluid. Method Smoothed Particle Hydrodynamics (SPH) used in modeling fluid as SPH method can discretize domain SPH fluid into particle form. In this final SPH used to create tsunami simulations using a two-dimensional form of a trapezoid and square barrier. Tsunami simulation is divided into two basic scenarios is flat and gently sloping beach. Tsunami simulation results with a duration of 15 seconds uses 6435 SPH particles can produce realistic visualization in describing the movement of the tsunami wave. On testing using showed that the basic conditions shaped sloping beach there is a real difference between a barrier in the form of a trapezoid and square. Square form barrier is more effective than barrier in the form of a trapezoid on the basic conditions shaped beach ramps. But the basic conditions shaped beach flat, trapezoidal and square form barrier there is no real difference.*

*Keywords: tsunami, Smoothed Particle Hydrodynamics method (SPH), a square and a trapezoid obstacle.*