

## **ABSTRACT**

Various natural phenomena like a volcanoes, floods, landslides, and earthquakes can be modeled and simulated by knowing the parameters that influence the phenomenon. One interesting phenomenon to be simulated are floods. Fluid flow can be modeled using the particle method. Particle methods are widely used in the field of fluid dynamics is the Smoothed Particle Hydrodynamics (SPH).

In the SPH method, the fluid is represented as a discrete part of the called particle. Each particle SPH has its own characteristics such as acceleration, velocity, density and position. Motion of each SPH particle is controlled by two main equation, the Navier-Stokes (NS) and the continuity equation. In this final project, we have built SPH simulator is used for flood simulation. Based on the simulation results, raising the number of slits into double resulted in an increased flood heights more than 50%.

**Keywords:** Smoothed Particle Hydrodynamics, rainfall intensity, height of the flood