

## Project Report

In this project we have created a rocket using `GL_TRIANGLES` & `GL_QUADS` with different suitable colors in `rocket()` function. The rocket will move left & right by pressing 'A' & 'D' in the keyboard using the function 'handleKeyPress()' by changing the `glTranslatef()` function parameters. To feel like the rocket is moving forward we have created background small stars in the 'backgroundStar()' function by calling this function in the `display()` function several times with different translate parameter value. Also the small stars moving downward for that we have used a `glTranslatef()` Y axis parameter this parameter decreases continuously in the `update()` function for that small stars feel like moving & that creates the illusion that the rocket is moving. Also added some big blinking stars which was created using the `GL_Polygon` & the blink created by `glScalef()` function changing the parameters continuously in the `update()` function. Then created some obstacle using triangle & quads in the `display()` function. The obstacles were pushed in matrices then by using `glTranslatef()` function's Y axis parameter (decreased the value continuously in update function) the obstacle were coming towards the rocket. Then created a bullet in `bullet()` function. When left mouse button is clicked in `handleMouse()` function the value of rocket position will assign to the bullet translation parameter & the bullet will start moving towards the obstacles & the obstacles will destroy. Obstacles will destroy when the bullet position & one obstacle position will be same. It is done by using `glScalef()` function. When the bullet's position & the obstacles positions are same then the obstacles scale parameters will be Zero that means the obstacle will be vanished. Also the same thing is done when the obstacle hit the rocket. By making Rocket's `glScalef()` functions scale parameters zero the rocket vanishes & game over text appears. To create the 'game over' text in `TextPrint()` function I have used `glutBitmapCharacter()` function to appear the text. These are the main things that were done in the project. Other then these things lot of things were done also faced many problems during the development some of them we have overcome and little of them we can't overcome. In this project almost everything (except somethings) that we have learned in the lab has implemented. By this above way we have concluded this project.