BCS2053 COMPUTER GRAPHICS
SEMESTER II SESSION 2023/2024

GROUP 9 - PROJECT REPORT

LECTURER:
ASSOC. PROF. TS. DR. FERDA ERNAWAN

SECTION: 01B

NAME	STUDENT ID
MUHAMAD SYARIFUDIN BIN MOHD AZON	CB22126
MUHAMMAD HAIQAL ZAFRIL BIN ZAIDY	CB22148
HANIS SABRINA BINTI MOHD KHAIRUL MUZAMMIL	CB22157
IMAN HAIQAL BIN SHAHARUDIN	CD22044

TABLE OF CONTENT

QUESTION 1: What is your contribution to this Mini Project assessment?

MUHAMAD SYARIFUDIN BIN MOHD AZON (CB22126)

I constructed the tank's turret. It is the child of the object where it is created with cubes. For the turret it contains about 5 cubes. I am also responsible for the animation for the turret and colour for the project.

MUHAMMAD HAIQAL ZAFRIL BIN ZAIDY (CB22148)

I am in charge of building all 6 of the tank tires which act as the child. I constructed all 6 of the tires using cubes. I also added rims to each of the tank tires which are also created using 6 cubes. The child transformation for the tires and rims are also done by me. Next, for more details, I added side skirts and backdoors along with handle bars for each of the doors for the tank.

HANIS SABRINA BINTI MOHD KHAIRUL MUZAMMIL (CB22157)

I constructed the tank's barrel which is the grandchild of the tank's turret, and the detailing of the tank's body such as the antenna and the rail at both sides of the tank's body which in total have 5 cubes including the barrel and its base. The construction involved using cubes.

IMAN HAIQAL BIN SHAHARUDIN (CD22044)

I constructed the tank's body. The body is the parent of the object, and it is also constructed using the shape rectangle.

QUESTION 2: Explain how you construct/develop your part of the project?

MUHAMAD SYARIFUDIN BIN MOHD AZON (CB22126)

I initiated the construction by defining the basic shapes for the turret body, using cube. I then applied scaling using mat4.scale to adjust the dimensions of the turret body appropriately. To position it correctly, I utilize mat4.translate, aligning the turret body with respect to the tank's chassis. I started by drawing the turret bottom body that you can see from the side that acts like a pivot between the turret and tank's body. Next I draw the turret top body using the same technique which is mat4.scale and mat4.translate. Next, for the extra details to make it look like a real tank turret, I drew three more cubes, two on the side and one on top of the turret.

For the turret transition, I created a function to the x-axis, when the child button is clicked, the turret will move left and right. For the color i used three main color for the tank which is armyGreenColors [0.2941, 0.3255, 0.1255, 1.0], redColors [0.5451, 0.0, 0.0, 1.0] and darkGreyColors [0.2, 0.2, 0.2, 1.0]

MUHAMMAD HAIQAL ZAFRIL BIN ZAIDY (CB22148)

I was in charge of the construction of the tires for the tank. Total of the 6 tires are made out of 6 cubes. Additionally, I also added rims to each of the tires which are also made out of 6 cubes. As these objects are acting as the child to the parent which is the main tank body, all 6 tyres and rims are able to rotate on the x-axis. I used the mat4.scale to form the basic shape for each tyre and rims. After that, I used mat4.translate to arrange each tire and rim to their own respective position. As for the color of the tires, I used colorsBuffer to apply darkGreyColors [0.2, 0.2, 0.2, 1.0] to each tire while I used greenRimColors [0.28, 0.31, 0.12, 1.0] for each of the rims.

I also added some more details to the tank which is the side skirt and the backdoors of the tank. The total amount of cubes used for the side skirts are 10 while the total amount for the backdoors are 4 cubes including the door handles for each door. These objects act as the parts of the parents for the tank. The transformation of the child and grandchild will affect the side skirts and back doors. Mat4.scale and mat4.translate are also used to form and place the objects into position. As

for the color of the sideskirts and the backdoors, I used armyGreenColors [0.2941, 0.3255, 0.1255, 1.0].

HANIS SABRINA BINTI MOHD KHAIRUL MUZAMMIL (CB22157)

I started constructing the tank's barrel by firstly, using a cube to make the base that holds the barrel, and using a rectangle for the barrel itself with mat4.scale to adjust the dimension and make the size longer and slimmer than other body parts, representing the real barrel. I used mat4.translate to properly fit the position of the barrel. Then, I created the function for the barrel to rotate using the transformGrandZ function to make it move to top or move downward when the grandchild button is clicked. Once the grandchild button is clicked again, the animation will stop rotating. As for the color of the barrel, I used redColors. Then, I used rectangles to finish the detailing of the tank's body such as the antenna, the rail at the left side of the tank's body and the rail at the right side of the tank's body uses a cube each.

IMAN HAIQAL BIN SHAHARUDIN (CD22044)

First, I constructed the tank's body using a long rectangle to make the base of it. It is to ensure that the tank is suitable for the tyre and the turret. After I have the base of the body down, I added more cubes to the front of the body to make sure that it resembles a tank from the reference we chose. The cubes are places where they are on top of each other while they are constantly getting smaller. This to develop a curve like appearance of the tank. Then , by using the color array we chose, the body of the tank is covered with dark green-like color, to mimic what a tank should e coloured.