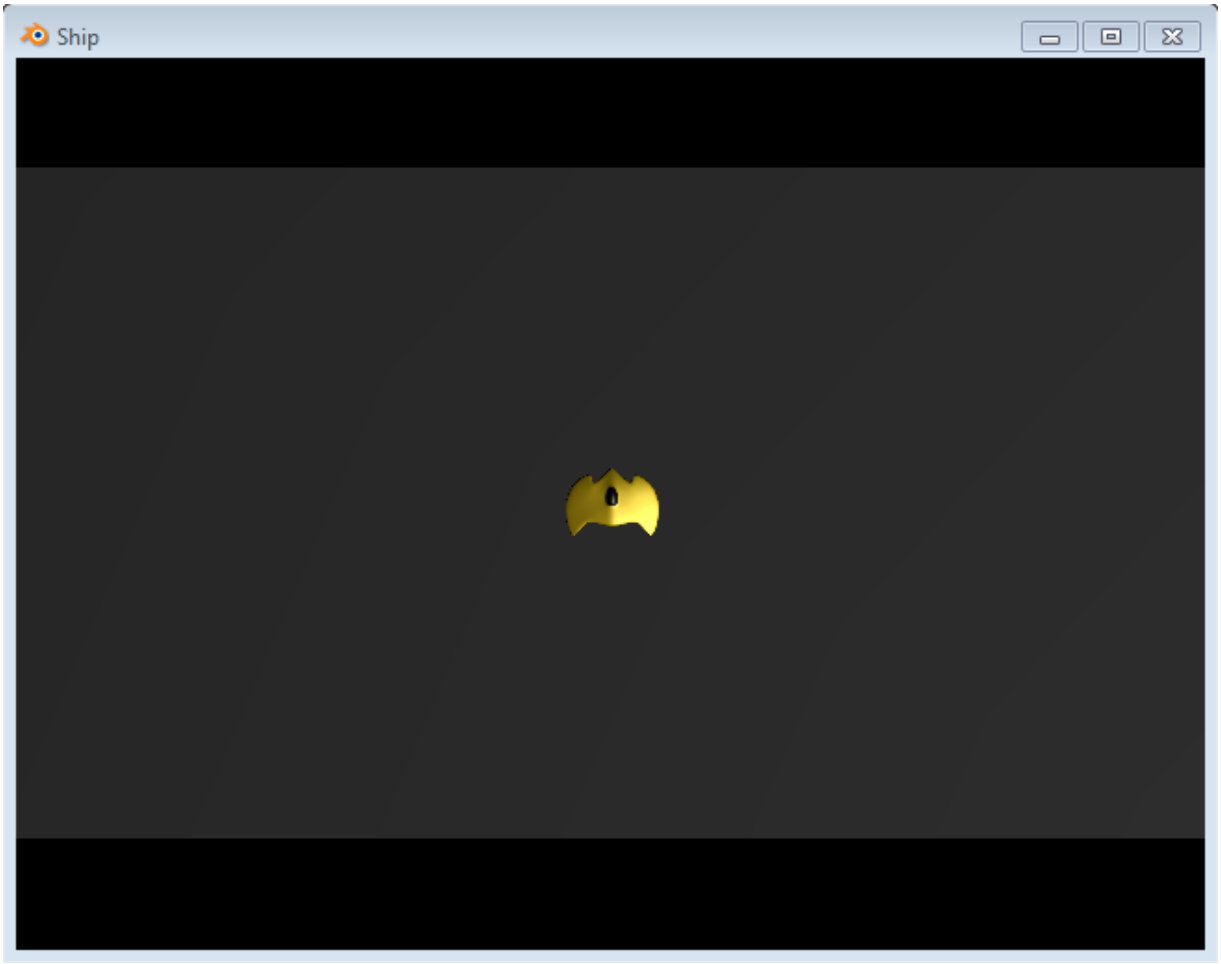
CHAPTER 2:

ADDING CONTROLS



Adding controls in Blender is simple. Blender allows you many different options when building your game. You are able to program your game using a computer language called Python or you can use visual coding 'bricks' found in the Logic Editor. We will be working mostly with the Logic Bricks; however, we will write two Python scripts so that you can see how they are implemented.

Our game starts to take shape in this chapter. Pay attention to the little details, because as we start doing more complex things in Blender, a simple mistyped comma or an unchecked box in a Logic Brick can cause game-breaking bugs.

We will be using keyboard buttons to control our ship. Please note that you can also program your ship to be controlled by a game-pad, such as an XBox One controller. If you do not like the control scheme presented, use a different one that you do like. Please also be aware that in other chapters I will change up the control scheme. This will show you different ways to program your game to make it your own.

HERE IS A LIST OF BLENDER HOTKEYS:

SHIFT+A: ADD AN OBJECT TO SCENE

TAB: TOGGLE OBJECT AND EDIT MODE

A: SELECT/DESELECT ALL OBJECTS IN A SCENE

S: SCALE

R: ROTATE

G: MOVE

X: DELETE

F: MAKE A FACE

C: SELECT SMALL AREAS

B: SELECT A LARGE AREA

CTRL+R: ADD LOOP CUT

CTRL+Z: UNDO

5: TOGGLE PERSPECTIVE/ORTHO MODE

1 (NUM PAD): FRONT VIEW (CTRL+1=OPPOSITE)

3 (NUM PAD): SIDE VIEW (CTRL+3=OPPOSITE)

7 (NUM PAD): TOP VIEW (CTRL+7=OPPOSITE)

HOLD MMB+DRAG: ROTATE VIEWPORT

SCROLL MMB: ZOOM IN/OUT

HOLD SHIFT+MMB: SHIFT VIEWPORT

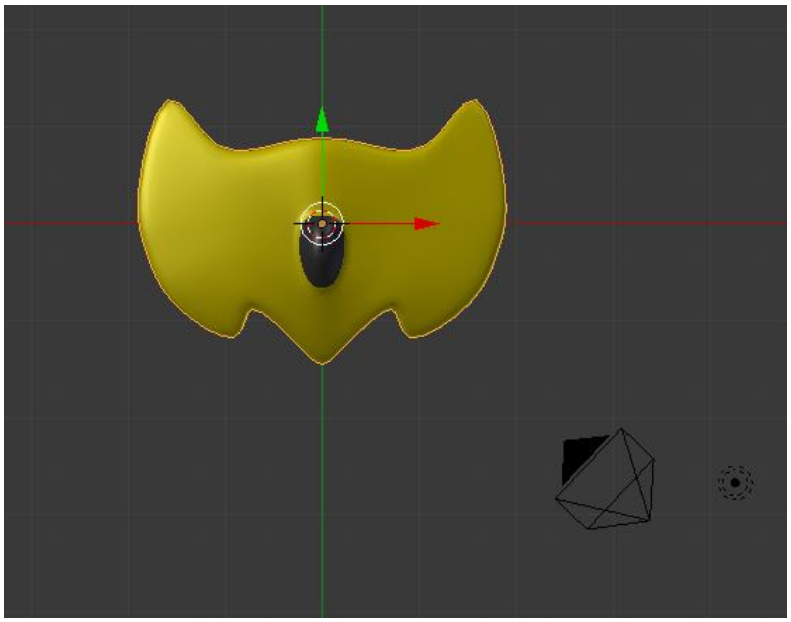
SHIFT+SPACEBAR: MAXIMIZE VIEWPORT

SHIFT+S: SET CURSOR

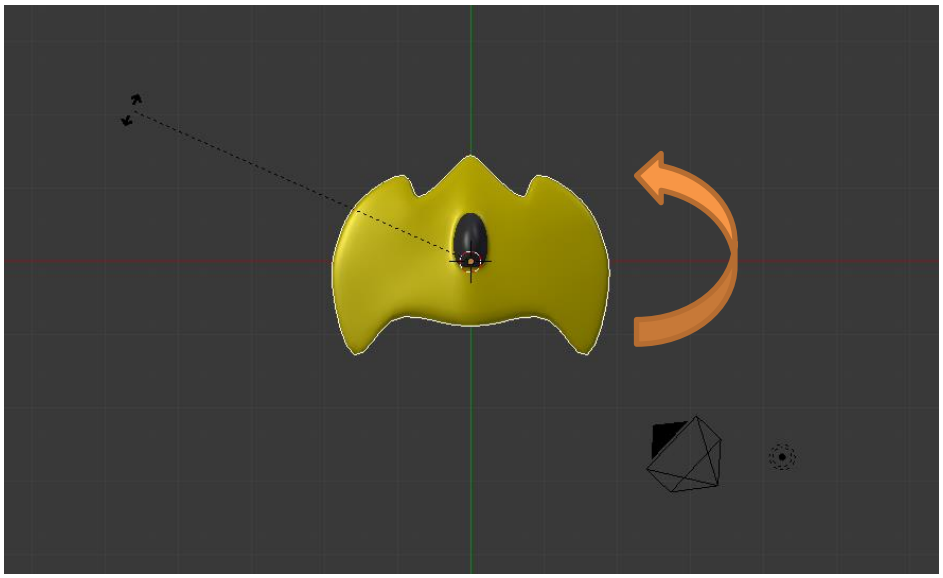
CTRL+J: JOIN MESHES

Z: TOGGLE WIREFRAME MODE

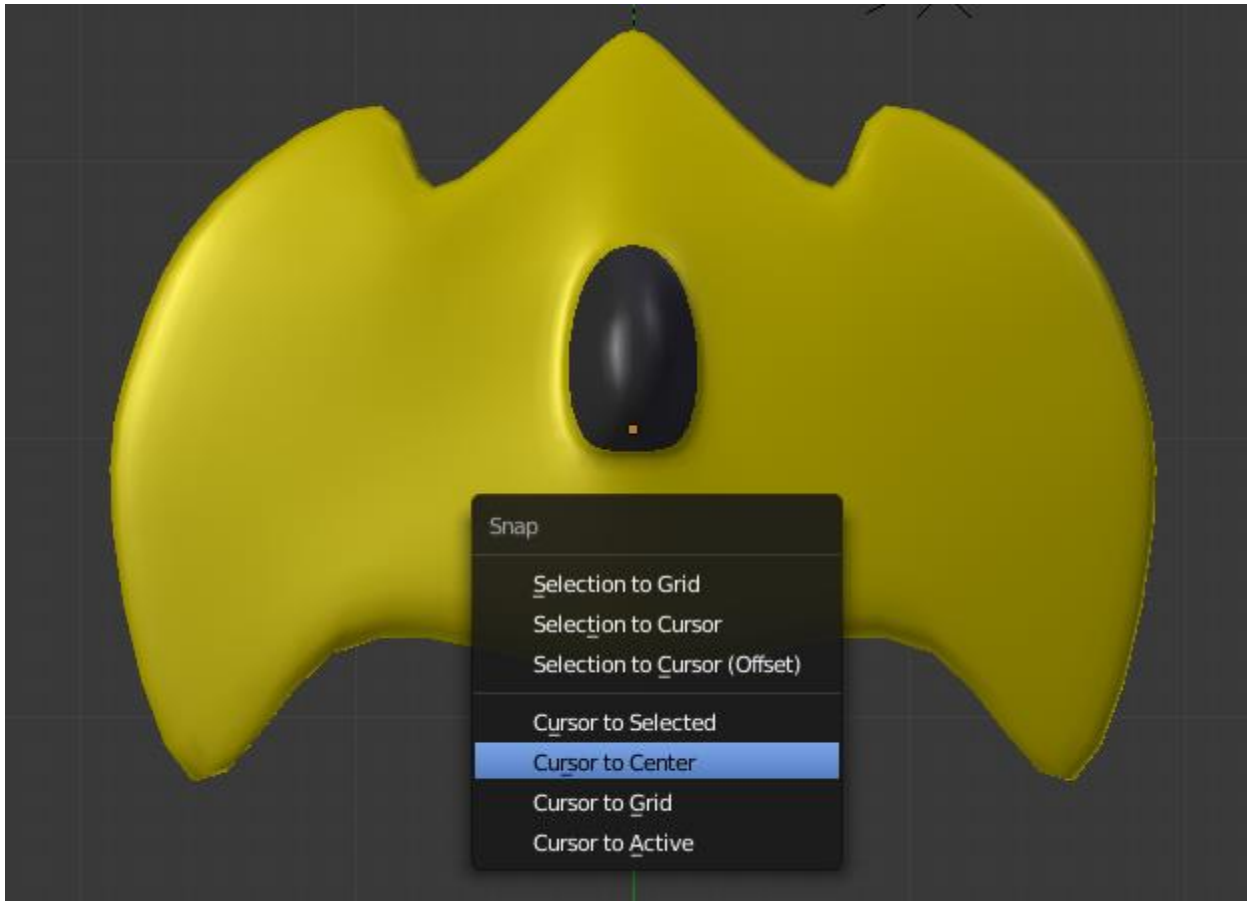
SHIFT+D: DUPLICATE



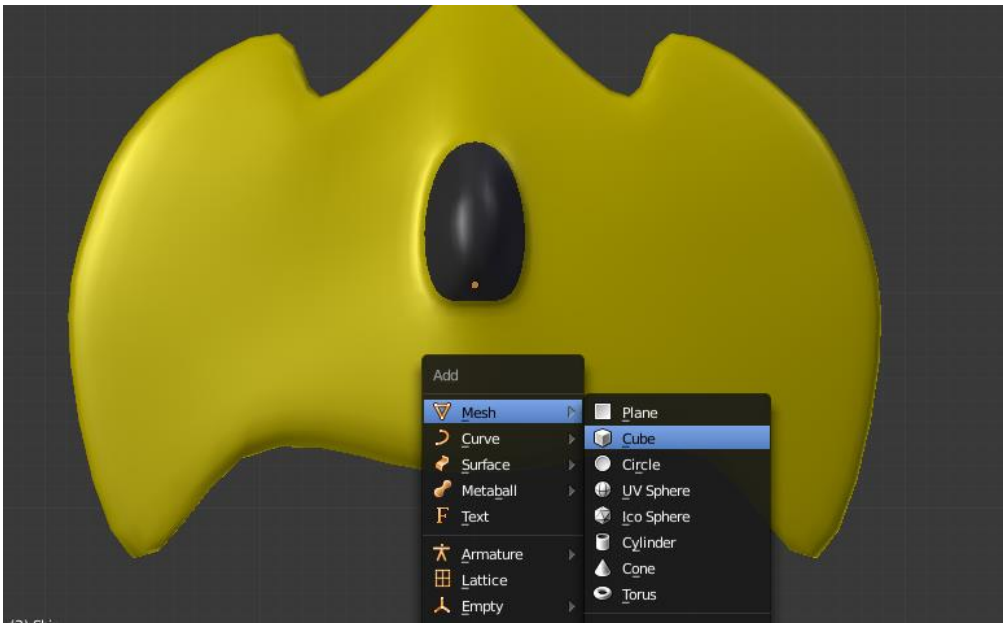
1) Let's start by setting up our scene. Go into top view by pressing '7' on the 10-key.

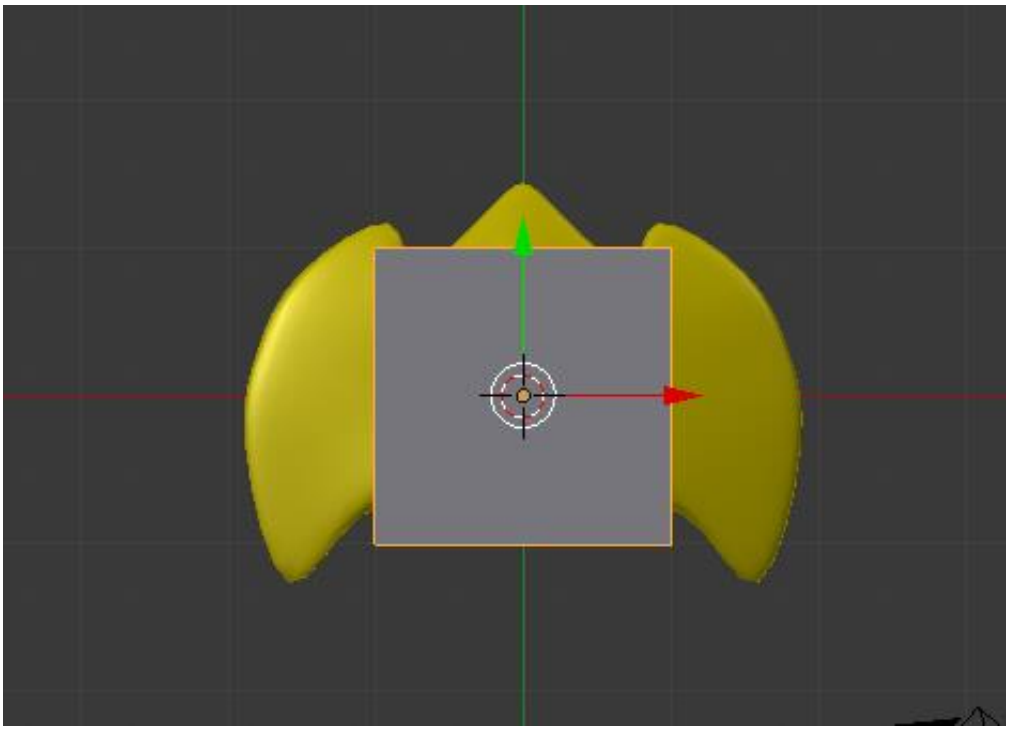


2) Make sure the front of your ship is pointing up. I had to rotate mine by pressing R.

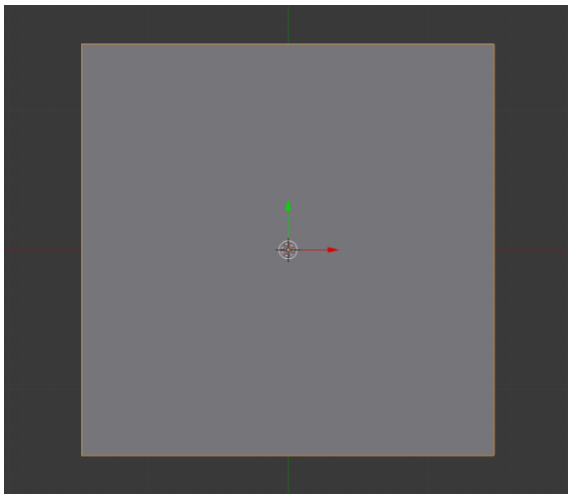


3) PRESS 'A' TO DESELECT EVERYTHING. MAKE SURE YOUR CURSOR IS CENTERED BY PRESSING 'SHIFT+S' AND SELECTING 'CURSOR TO CENTER'.

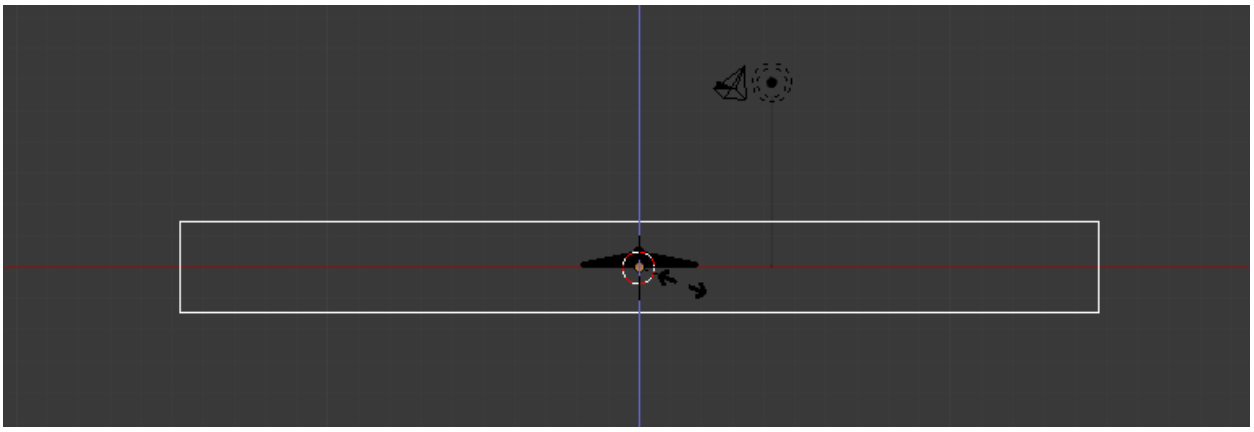




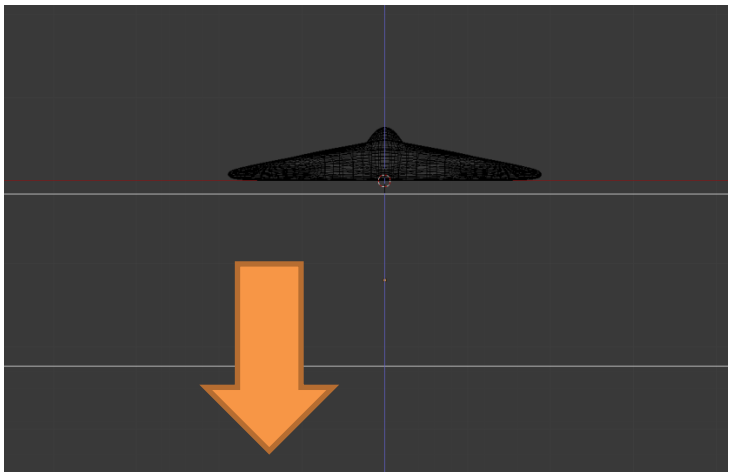
4) PRESS 'SHIFT+A' AND SELECT 'CUBE'.



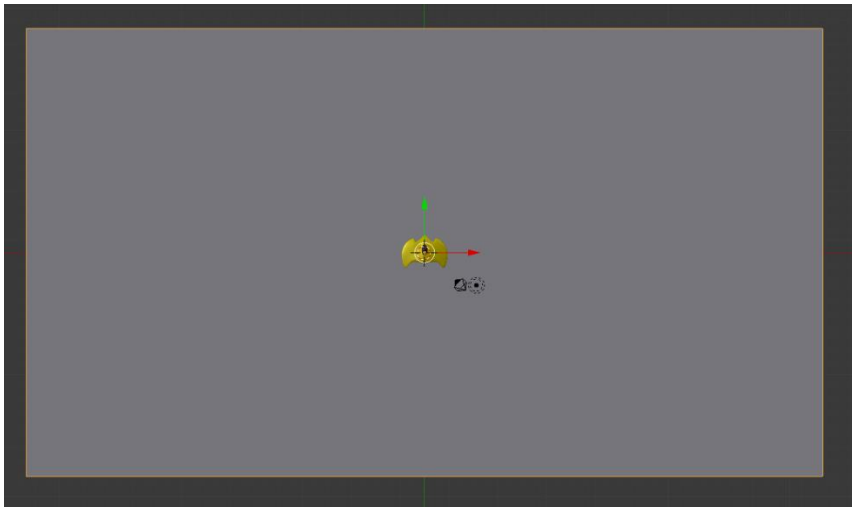
5) PRESS ‘S’ AND DRAG THE MOUSE TO SCALE THE CUBE UP (BIGGER).



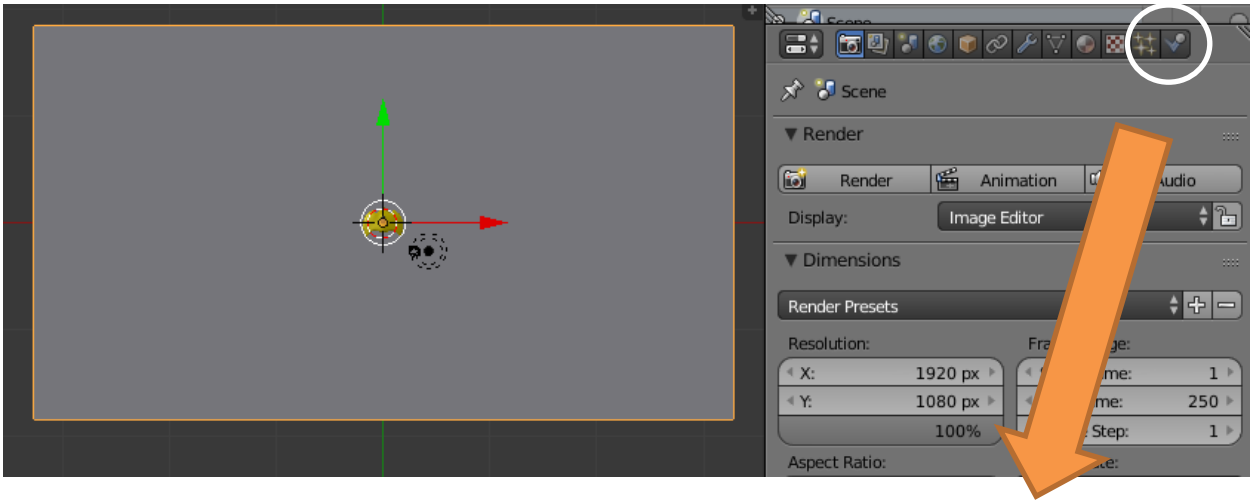
6) PRESS ‘1’ (10-KEY) TO GO INTO FRONT VIEW. PRESS ‘Z’ TO GO INTO WIRE MODE. PRESS ‘S’ THEN ‘Z’ TO SCALE ALONG THE Z-AXIS. FLATTEN THE CUBE LIKE IN THE PICTURE. LEFT-CLICK TO SET.



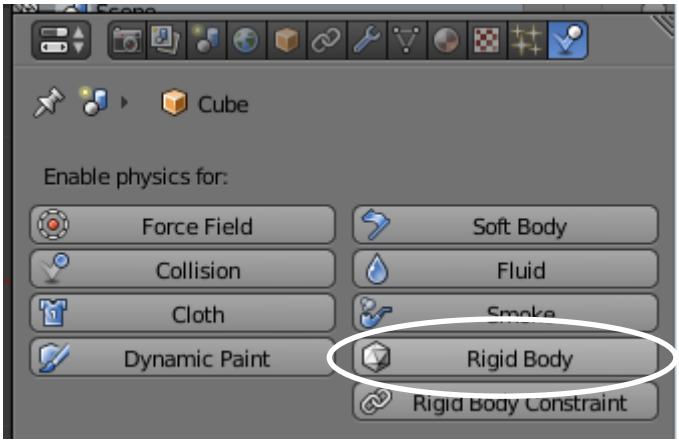
7) With the cube still selected, press ‘G’ then ‘Z’ to constrain to the Z-axis. Move the cube right beneath the ship. Left-click to set.



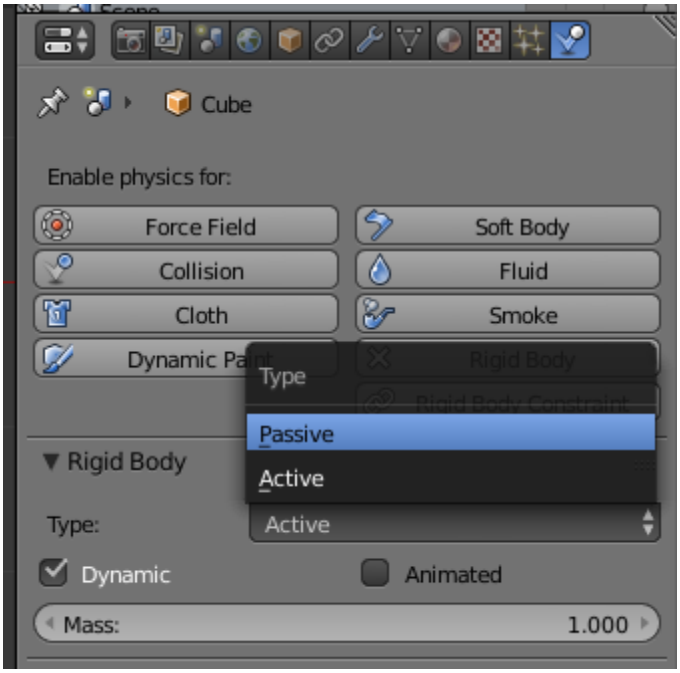
8) Press ‘7’ to go into top view. Press ‘Z’ to exit wire mode. Press ‘S’ then ‘X’ to scale along the X-axis. Press ‘S’ then ‘Y’ to scale along the Y-axis. Make the cube into to a rectangle.



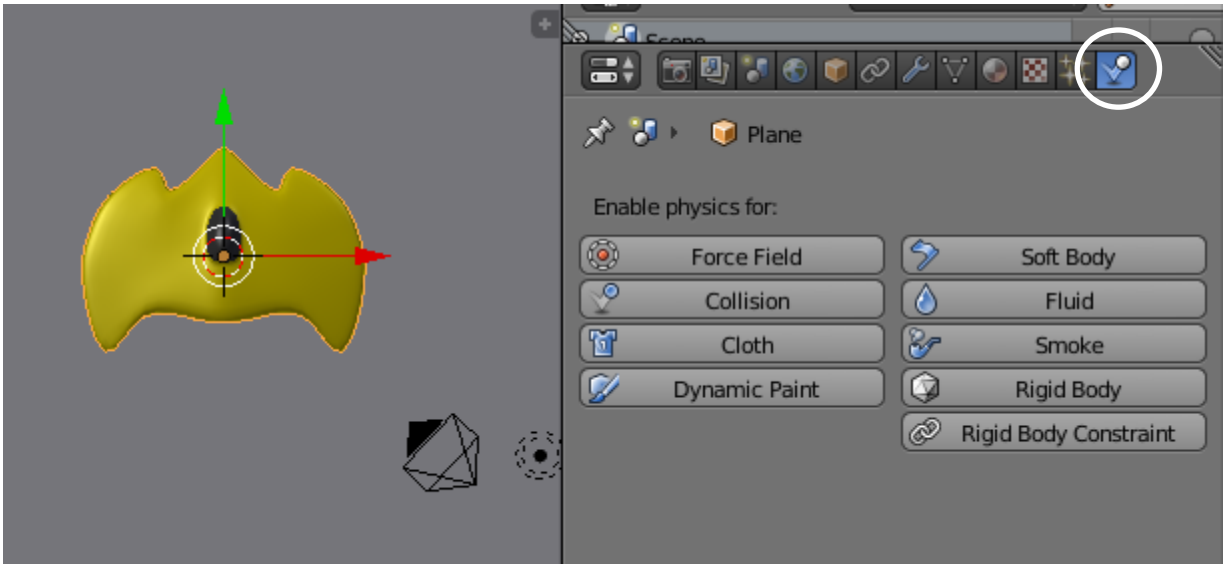
9) WITH THE RECTANGLE SELECTED, PRESS THE PHYSICS TAB.



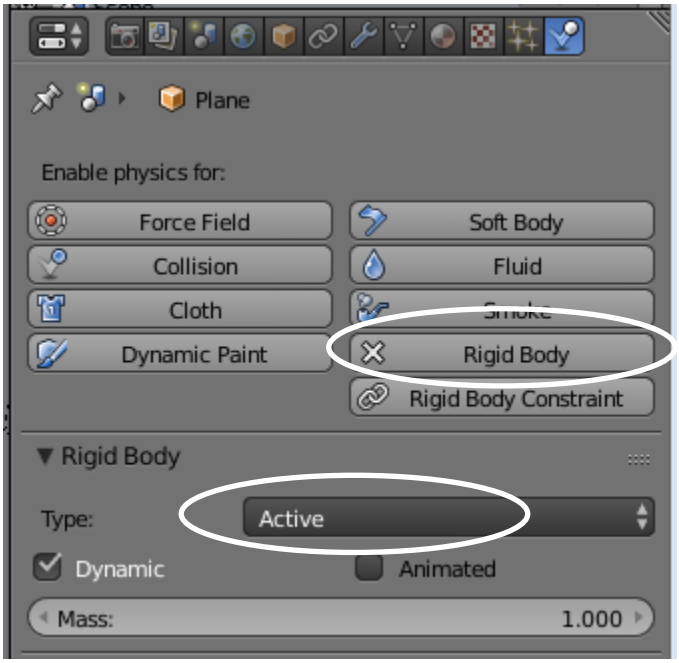
10) SELECT 'RIGID BODY'.



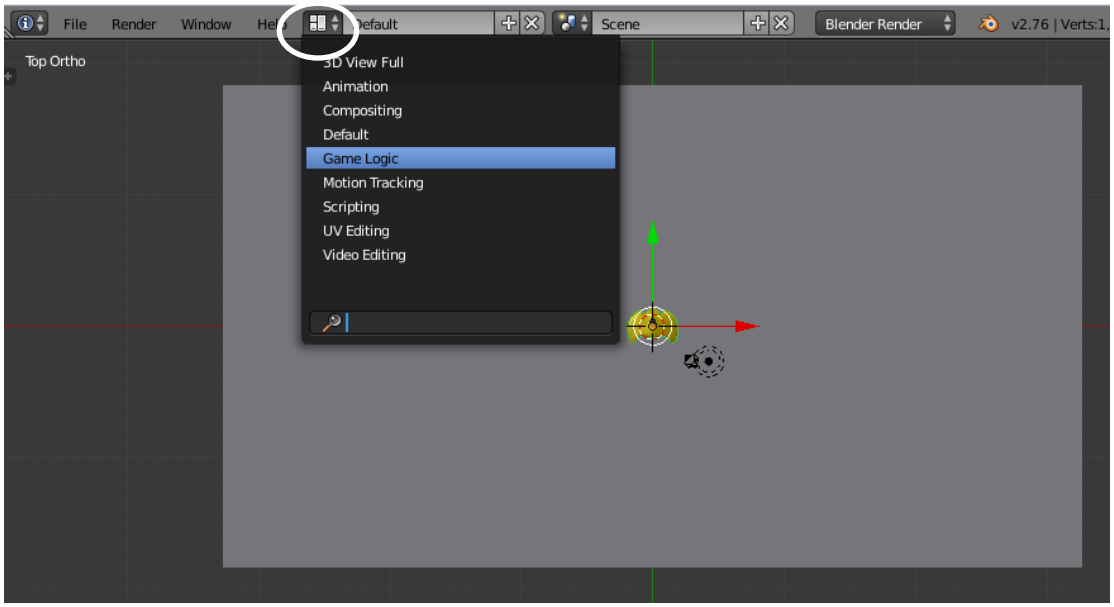
11) FOR TYPE, SELECT 'PASSIVE'.



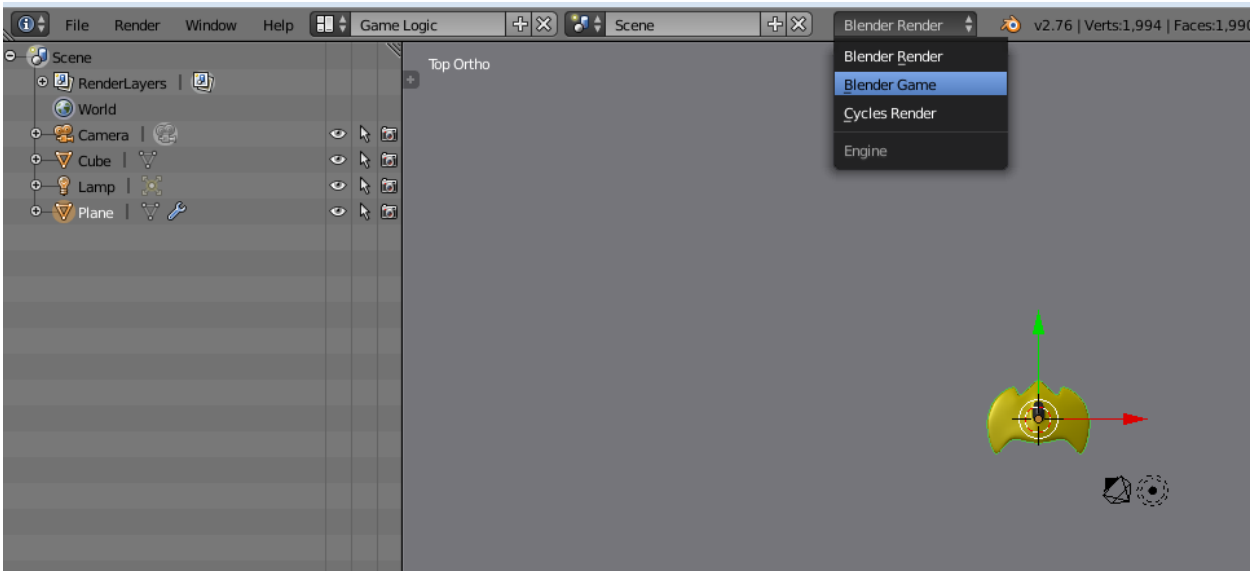
12) NOW, SELECT THE SHIP WITH RIGHT-CLICK. MAKE SURE THE PHYSICS TAB IS SELECTED.



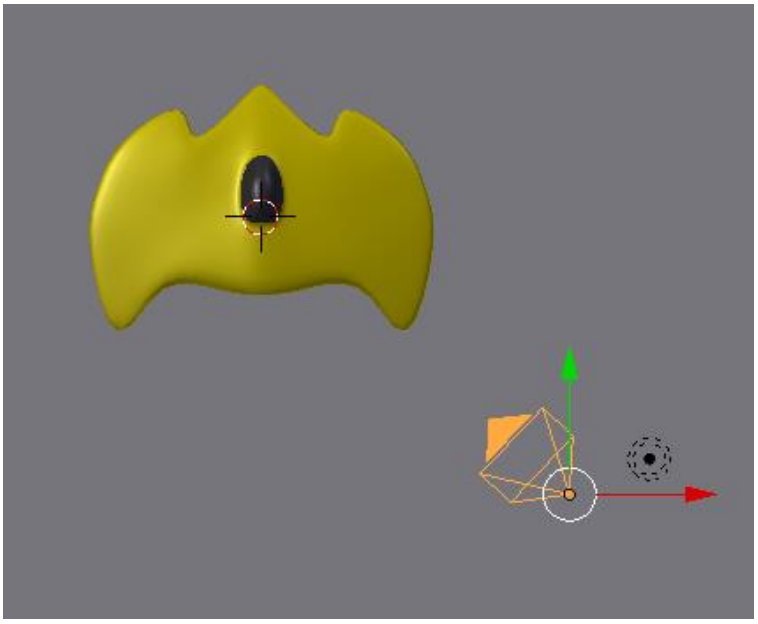
13) SELECT 'RIGID BODY'. MAKE SURE THE TYPE IS SET TO ACTIVE.



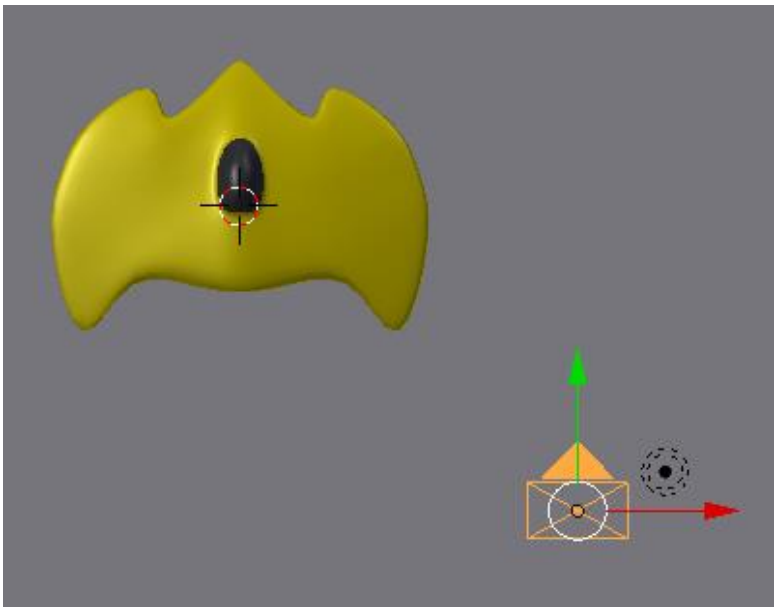
14) IN THE TAB THAT SAYS 'DEFAULT', SELECT 'GAME LOGIC' FROM THE DROPDOWN.



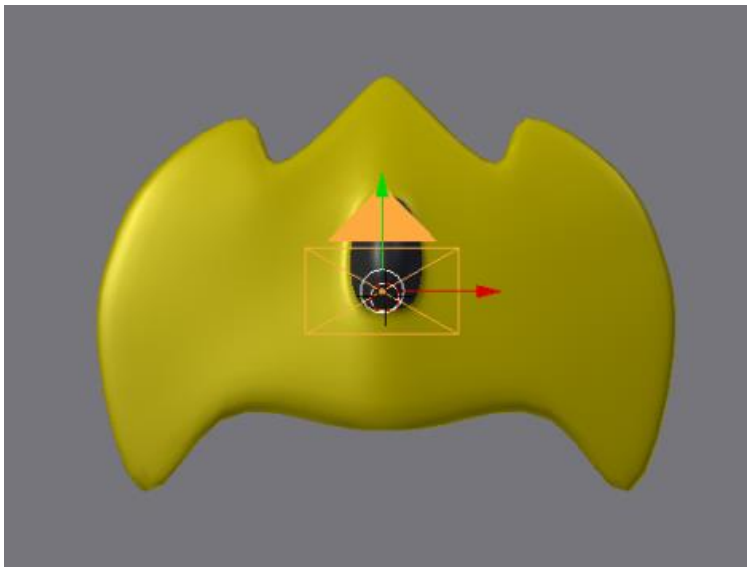
15) IN THE BOX THAT SAYS 'BLENDER RENDER', SELECT 'BLENDER GAME' FROM THE DROPDOWN



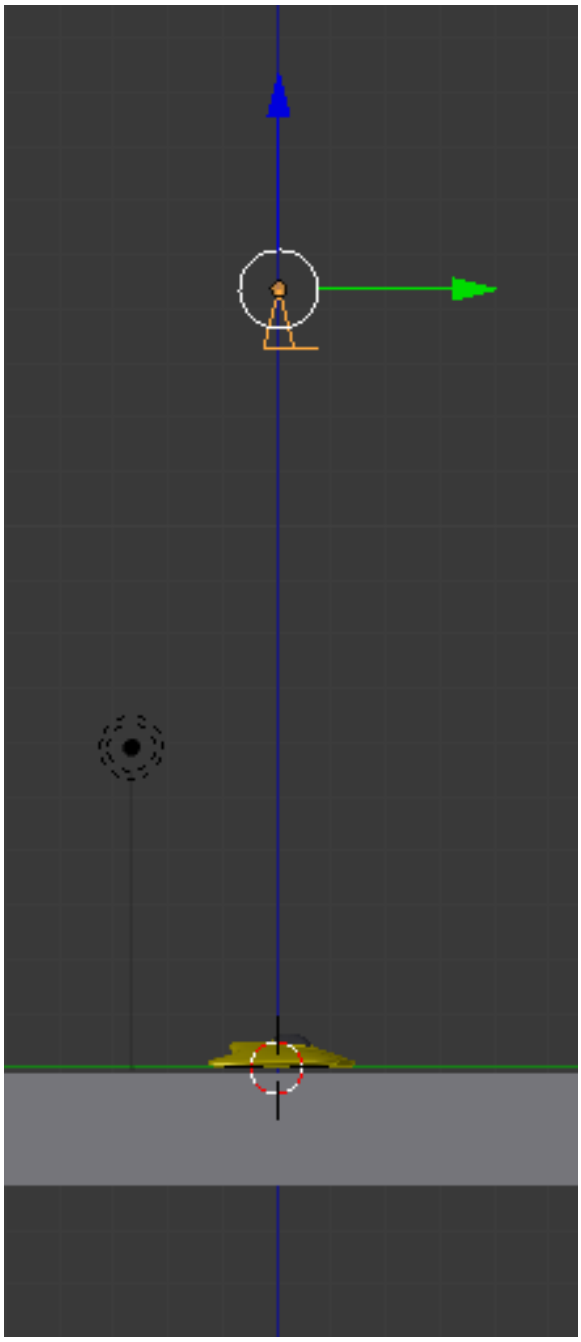
16) SELECT THE CAMERA BY RIGHT-CLICKING.



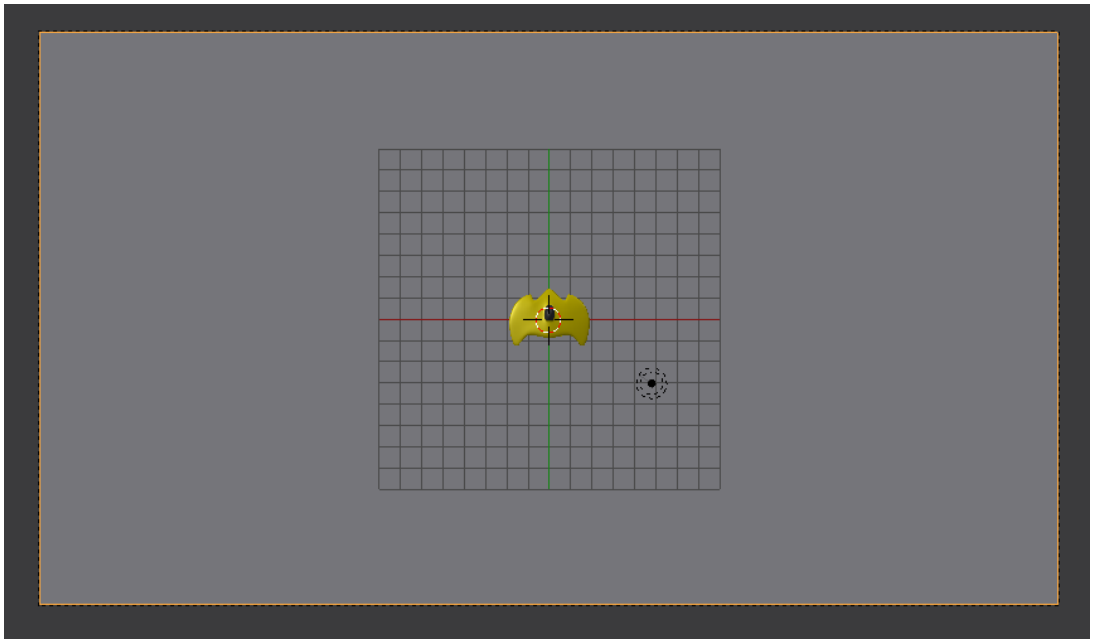
17) Press ‘Alt+R’ to clear the camera’s rotation. The arrow on the camera should be pointing up.



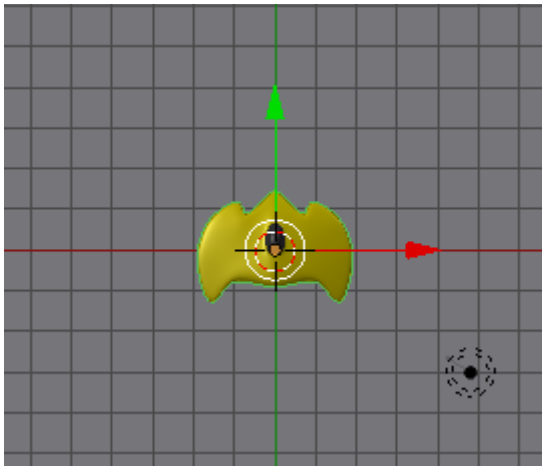
18) With the camera still selected press ‘G’ and move it on top of the ship.



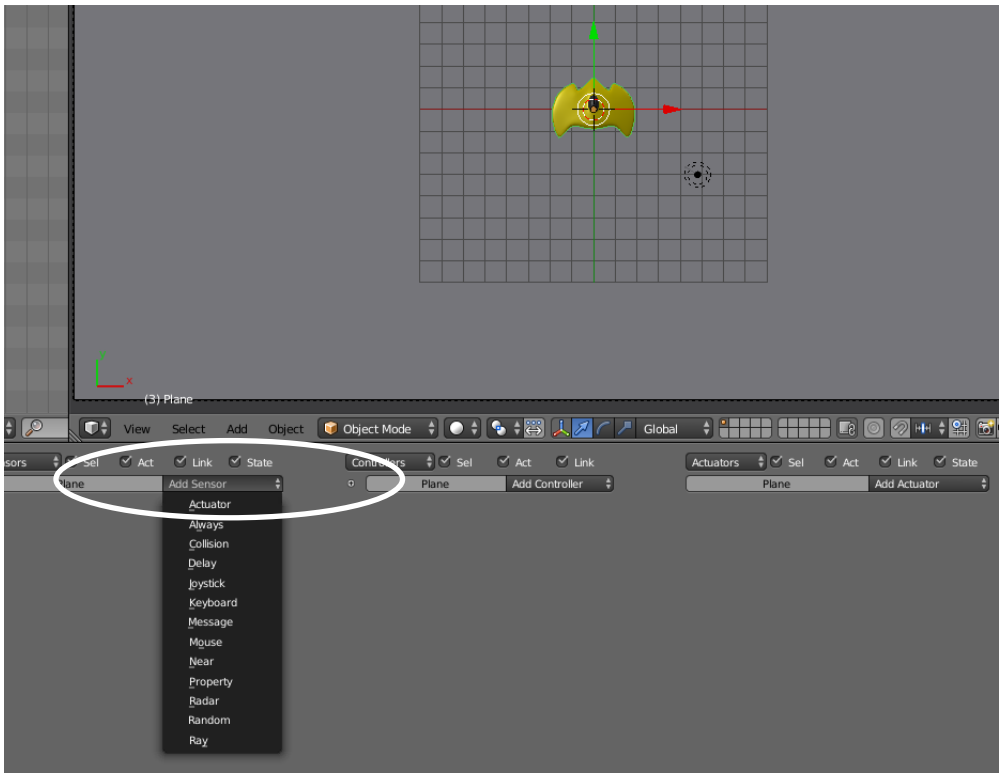
19) PRESS '3' TO ENTER SIDE VIEW. GRAB THE BLUE ARROW AND MOVE IT UPWARD



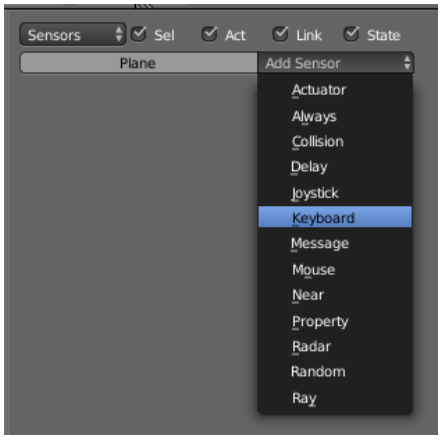
20) Press '0' (zero) to go into the camera view. Keep moving the camera up by pressing 'G' and then 'Z', and then dragging the mouse. Move the camera until the ship is small like in the picture. This will be the size of the ship in your game.



21) Right-click to select the ship.



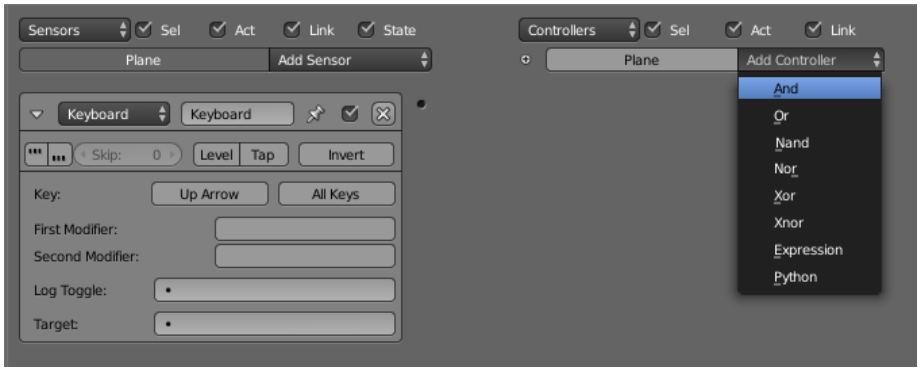
22) WITH THE SHIP SELECTED, LOCATE YOUR LOGIC BRICK EDITOR. PRESS THE ARROWS NEXT TO 'ADD SENSOR'.



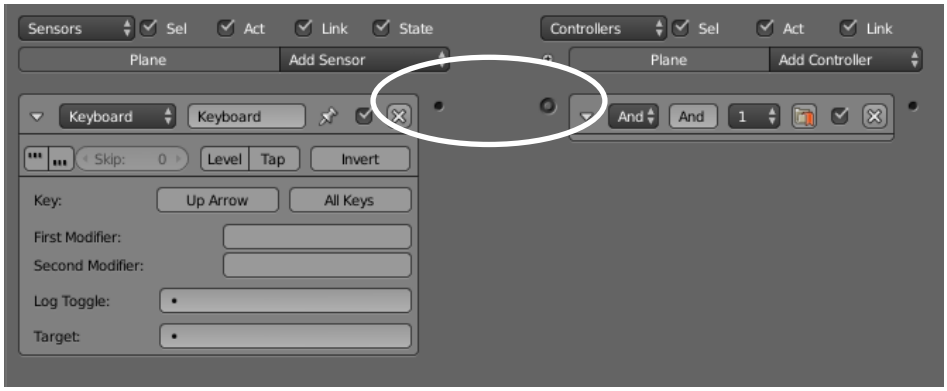
23) SELECT 'KEYBOARD'.

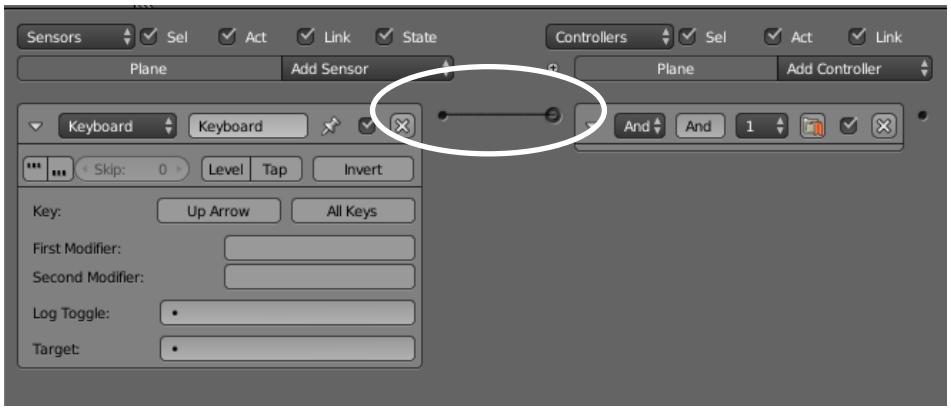
24) CLICK ON THE GRAY BOX NEXT TO KEY. YOU WILL SEE THE WORDS 'PRESS A KEY.'

25) PRESS THE UP ARROW KEY ON THE KEYBOARD. THE GRAY BOX SHOULD NOW SAY 'UP ARROW'.

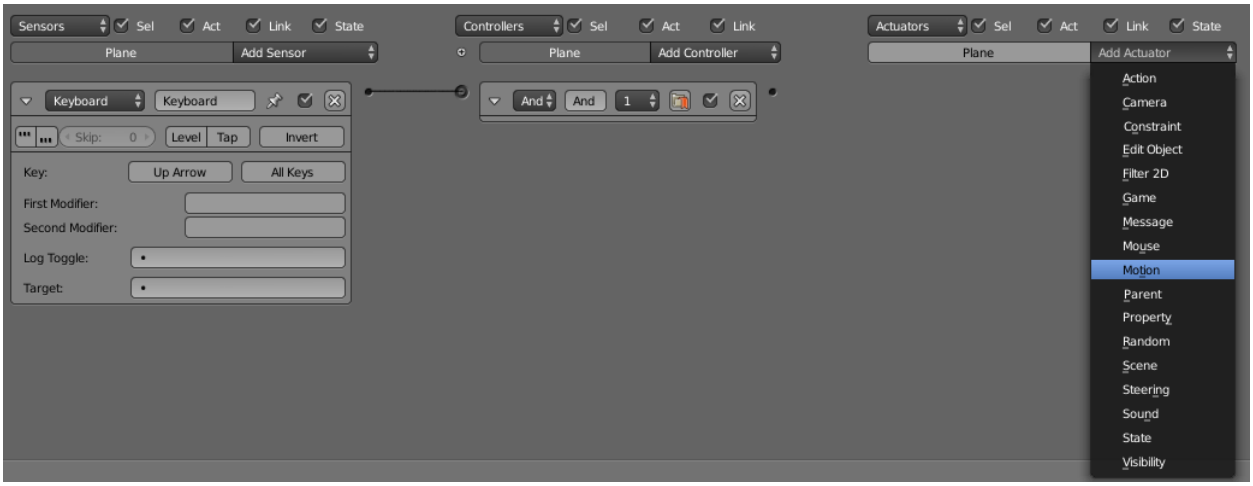


26) IN THE CONTROLLER PANEL, CLICK THE ARROWS NEXT TO 'ADD CONTROLLER'. SELECT 'AND'.

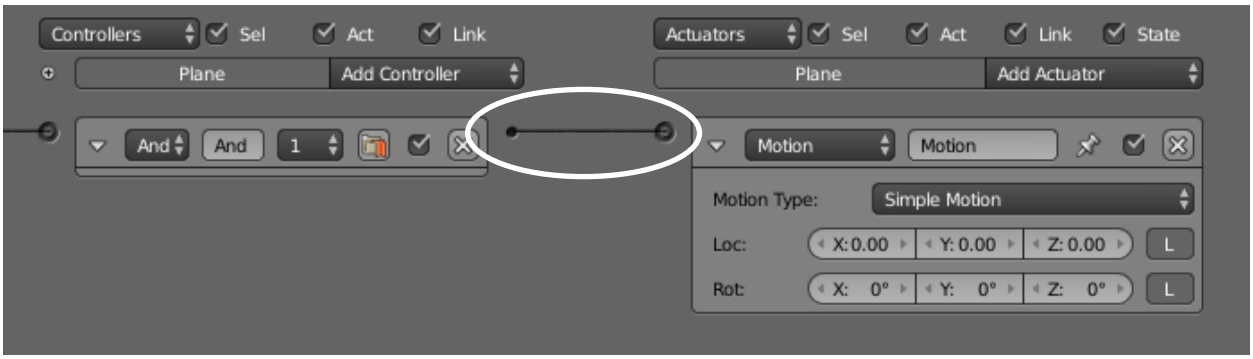




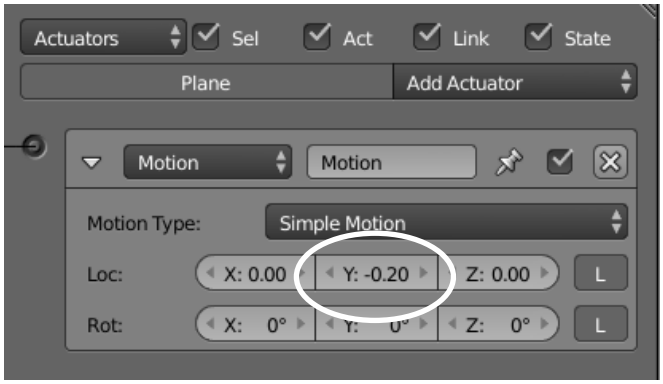
27) CONNECT THE SENSOR AND CONTROLLER BY CLICKING IN THE DOT AND DRAGGING TO THE OTHER SIDE.



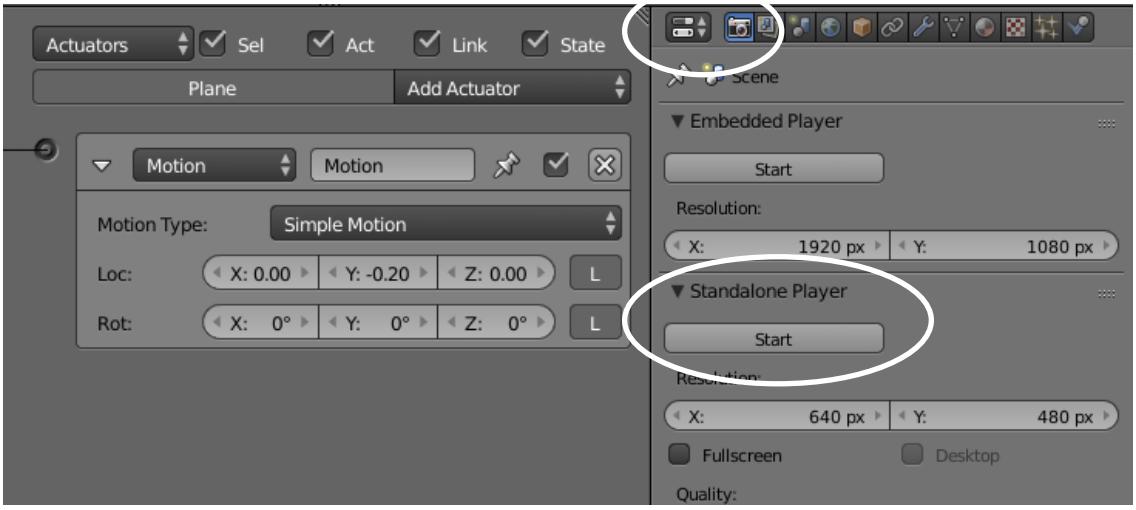
28) IN THE ACTUATORS PANEL, CLICK 'ADD ACTUATOR' AND SELECT 'MOTION'.



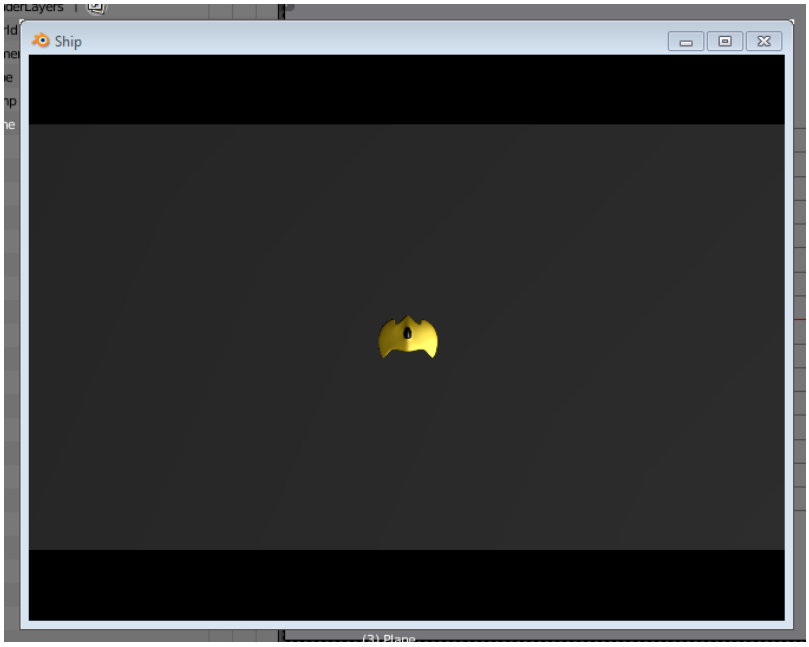
29) CONNECT THE CONTROLLER AND THE ACTUATOR.



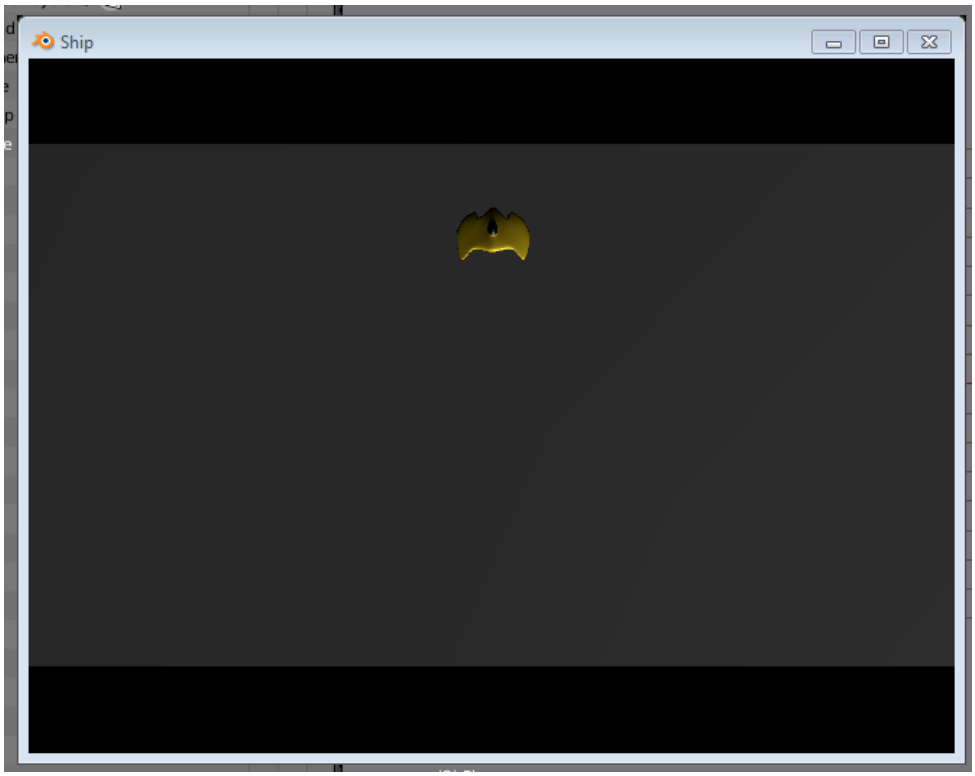
30) SET THE Y-LOC TO '-0.20'.



31) FIND THE RENDER TAB (IN THE PROPERTY PANEL). FIND THE STANDALONE PLAYER. PRESS THE 'START' BUTTON.

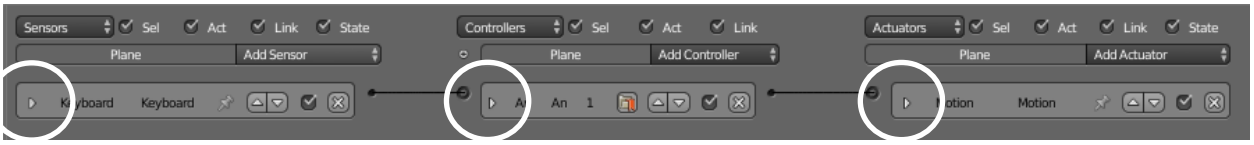


32) A NEW SCREEN SHOULD POP UP. THIS IS YOUR GAME. PRESS THE 'UP ARROW'. YOUR SHIP SHOULD MOVE UP.

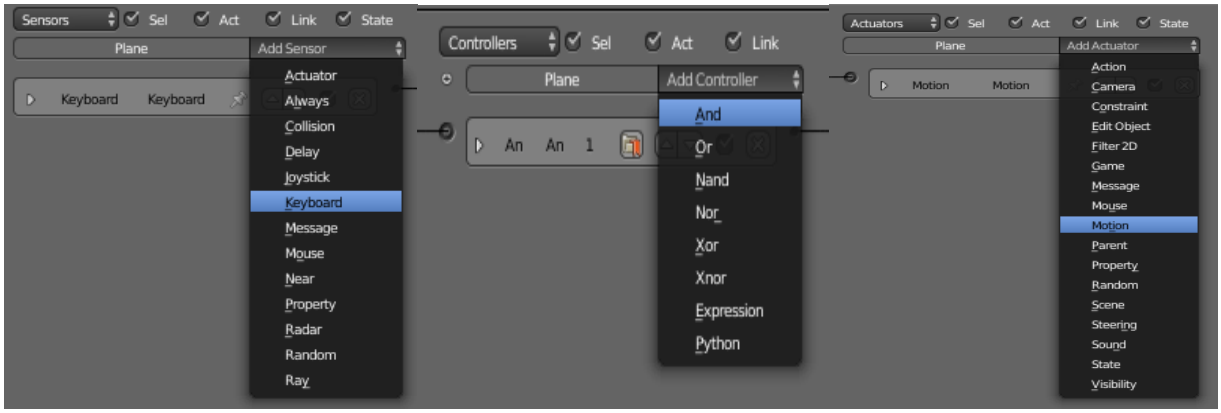


33) CONGRATULATIONS! YOU PROGRAMMED ONE MOVEMENT! LET'S PROGRAM THE OTHER THREE DIRECTIONS (LEFT, RIGHT, BACK)

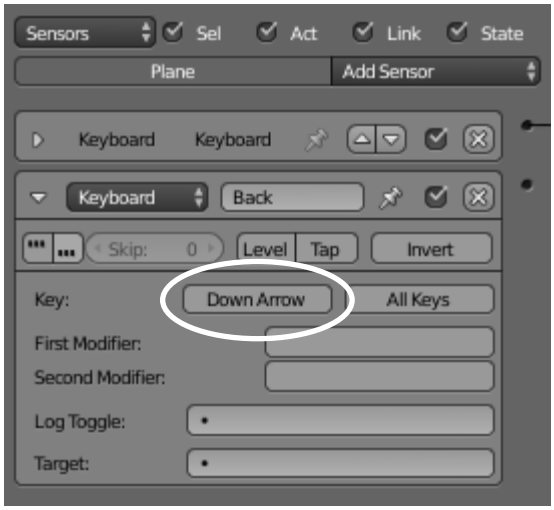
34) PRESS 'ESC' TO EXIT THE GAME (OR THE X IN THE TOP RIGHT CORNER). DON'T FORGET TO SAVE YOUR WORK.



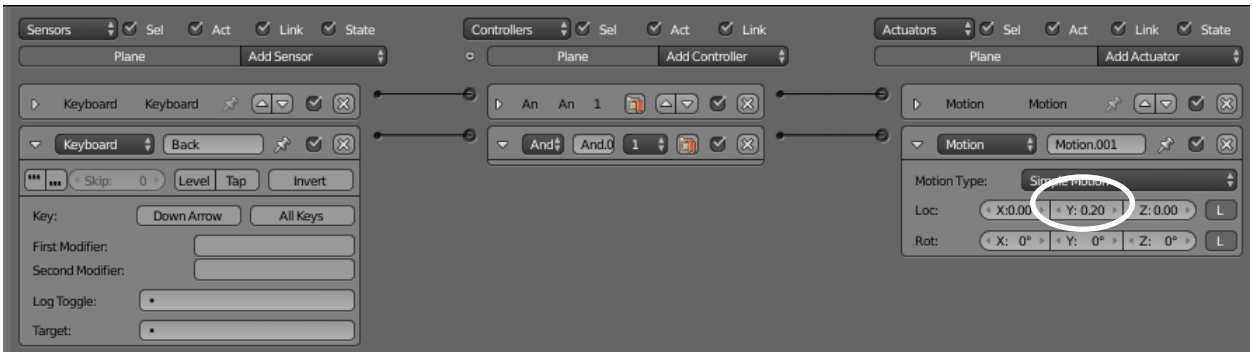
35) PRESS THE WHITE ARROWS TO THE LEFT OF EACH BOX TO MINIMIZE THEM.



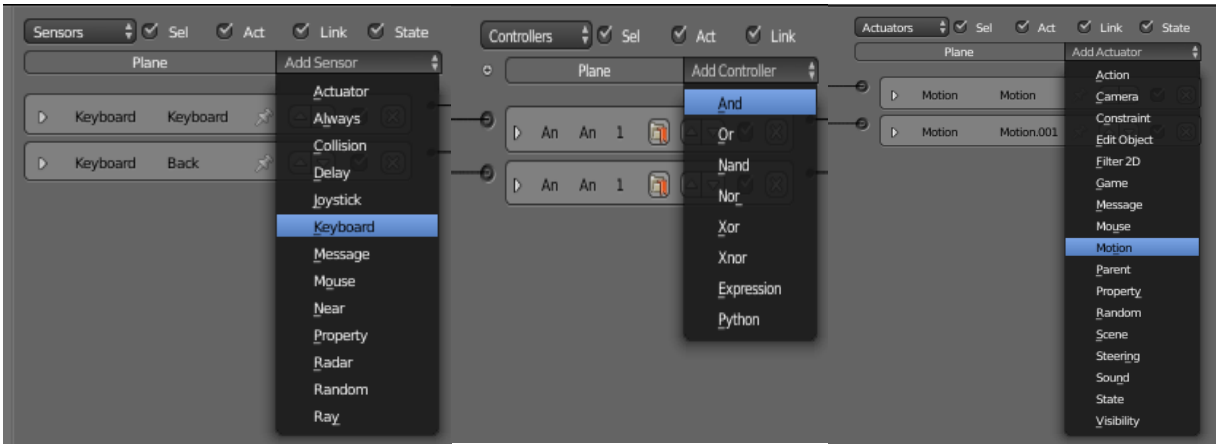
36) WITH THE SHIP STILL SELECTED, SELECT A 'KEYBOARD' SENSOR, AN 'AND' CONTROLLER, AND A 'MOTION' ACTUATOR.



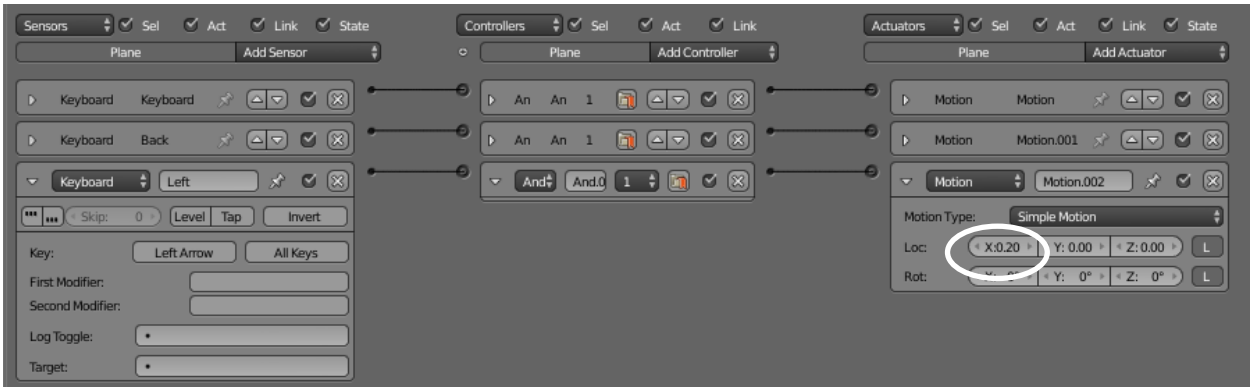
37) NAME THE KEYBOARD SENSOR 'BACK', CLICK ON THE BOX NEXT TO 'KEY' AND PRESS THE DOWN ARROW ON THE KEYBOARD.



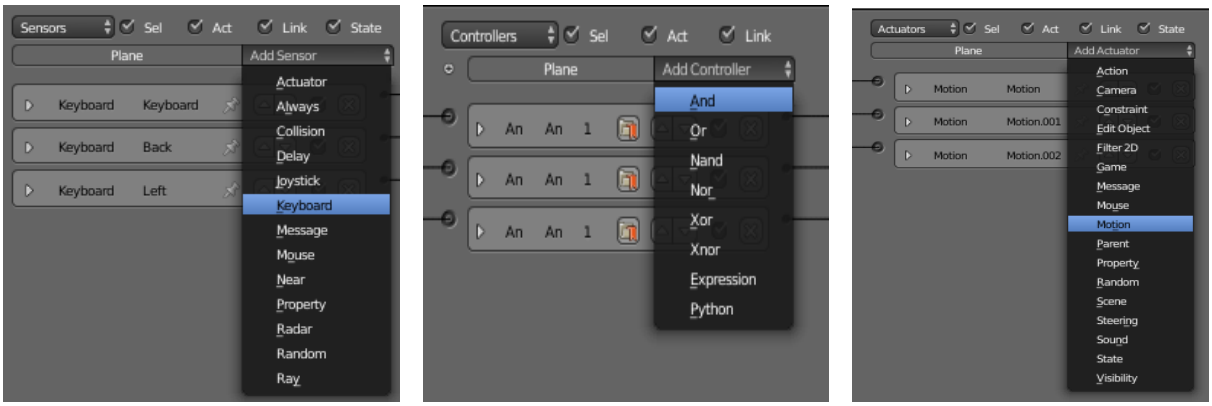
38) CONNECT THE THREE BOXES. SET THE Y LOC TO '0.20' IN THE MOTION ACTUATOR.



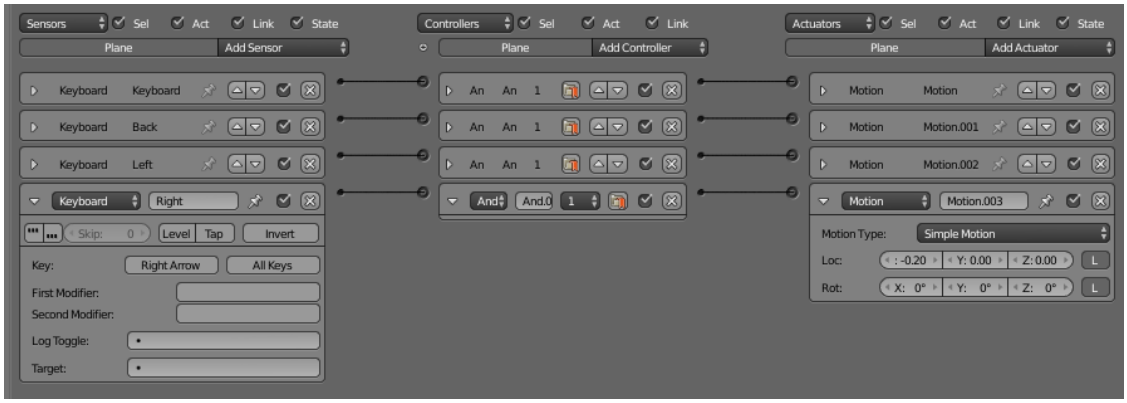
39) WITH THE SHIP STILL SELECTED, MINIMIZE THE BOXES. ADD A 'KEYBOARD' SENSOR, AN 'AND' CONTROLLER, AND A 'MOTION' ACTUATOR.



40) RENAME THE KEYBOARD SENSOR 'LEFT', CLICK ON THE BOX NEXT TO 'KEY' AND PRESS THE LEFT ARROW KEY ON THE KEYBOARD. CONNECT THE BOXES TOGETHER. CHANGE THE X-LOC TO '0.20'.

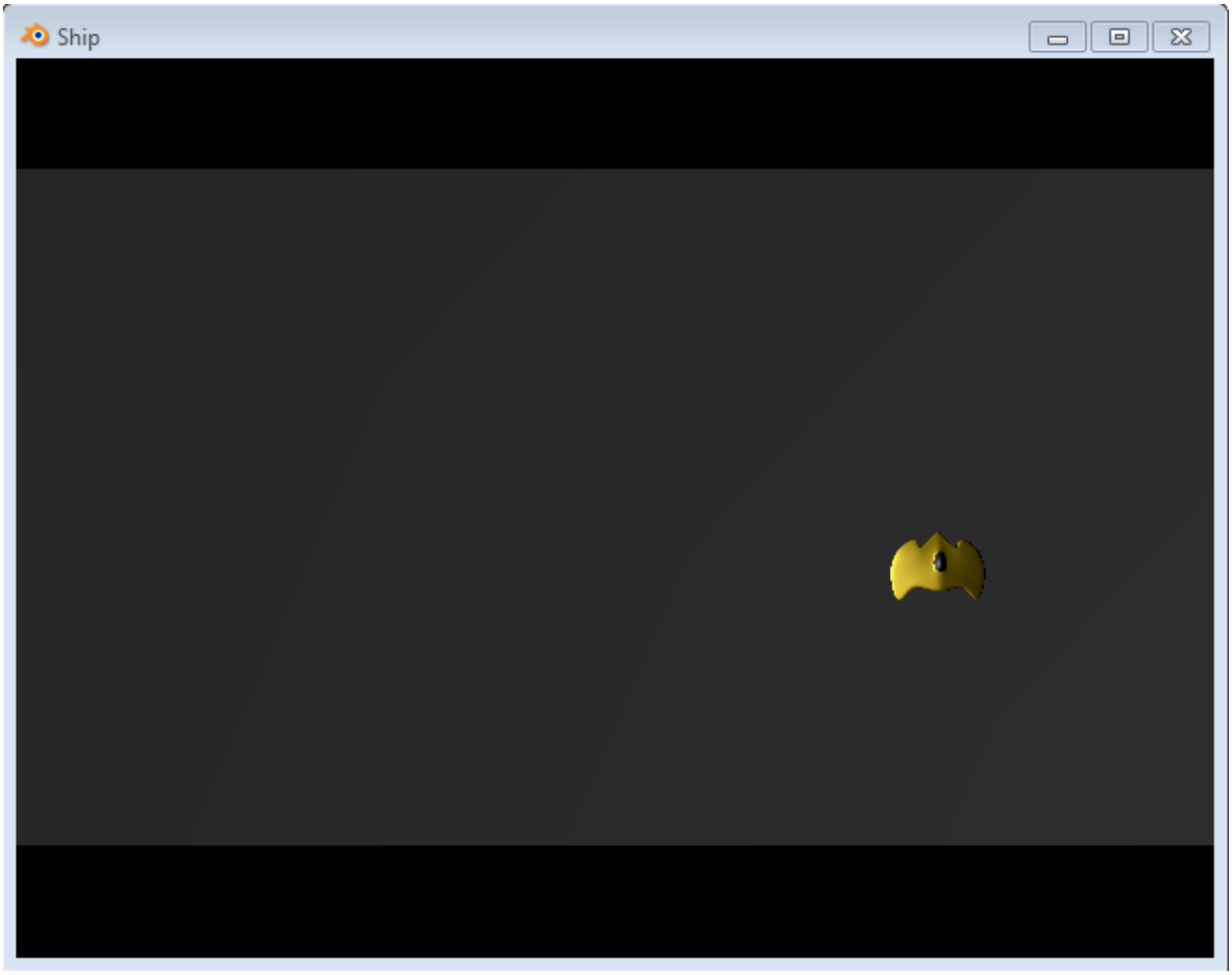


41) WITH THE SHIP STILL SELECTED, MINIMIZE THE BOXES. ADD A 'KEYBOARD' SENSOR, AN 'AND' CONTROLLER, AND A 'MOTION' ACTUATOR.



42) RENAME THE KEYBOARD SENSOR 'RIGHT'. CLICK ON THE GRAY BOX NEXT TO 'KEY'. WHEN IT SAYS 'PRESS A KEY', PRESS THE RIGHT ARROW KEY ON THE KEYBOARD. CONNECT THE BOXES. IN THE MOTION ACTUATOR, CHANGE THE X-LOC TO '-0.20'.

43) IN THE RENDER PANEL, UNDER THE STANDALONE PLAYER BOX, PRESS THE START BUTTON.



44) YOUR GAME SHOULD POP UP. NOW, WHENEVER YOU MOVE ONE OF THE ARROW KEYS, YOUR SHIP WILL MOVE IN THAT DIRECTION. YOU'VE JUST ADDED FUNCTIONALITY TO YOUR SHIP!!

45) SAVE YOUR WORK!!! IN CHAPTER 3 WE WILL BE ENABLING OUR SHIP TO FIRE PROJECTILES.

NOTES

NOTES