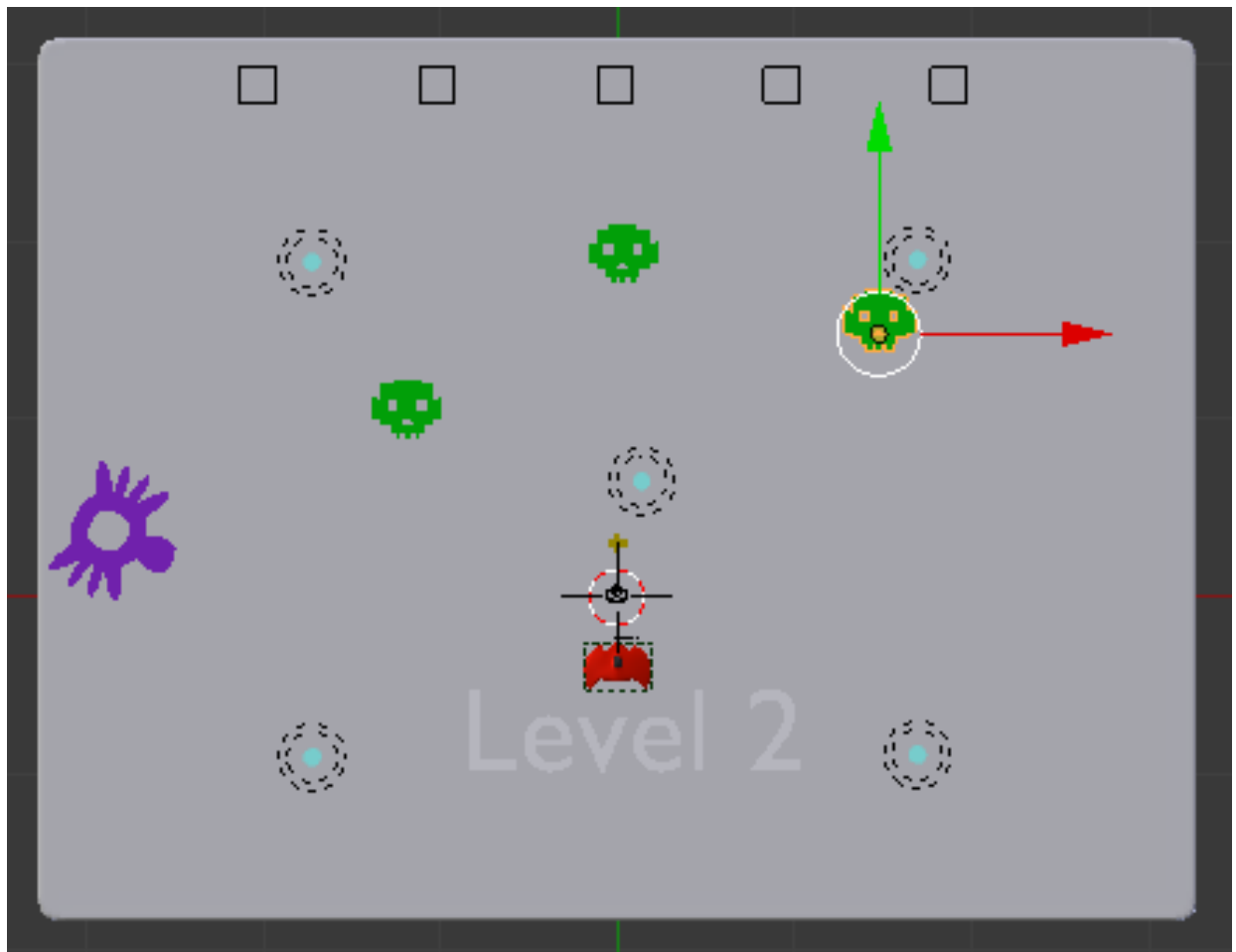


CHAPTER 10:

WRAP-UP

*TEXTURES, SOUND
EFFECTS, AND PACKAGING*



THIS IS THE FINAL CHAPTER IN THIS BOOK, SO WE WILL USE IT TO POLISH OUR GAME A LITTLE MORE. SO FAR, WE HAVEN'T USED TEXTURES AT ALL, NOR HAVE WE TOUCHED SOUND EFFECTS AND MUSIC. WE'LL GO OVER ALL OF THAT RIGHT NOW.

I WILL INCLUDE ALL OF THE TEXTURE FILES AND SOUND FILES IN THE CHAPTER 10 VIDEO ON MY YOUTUBE CHANNEL. YOU CAN DOWNLOAD IT FREELY OR YOU CAN FIND OTHER SOUND EFFECTS AND MUSIC THAT WILL SUIT YOUR PROJECT BETTER.

ONCE WE GET DONE WITH OUR GAME, WE WILL ALSO LEARN HOW TO PACKAGE IT FOR DISTRIBUTION. DEPENDING ON YOUR OPERATING SYSTEM, YOUR PACKAGING PROCEDURES MAY DIFFER FROM THOSE SHOWN IN THIS CHAPTER. YOUR RESULTS SHOULD END UP THE SAME, THOUGH.

MAY I ALSO SAY THAT, IF YOU'VE MADE IT THIS FAR INTO THE BOOK, I HOPE YOU'VE HAD FUN AND LEARNED SOMETHING NEW. PROGRAMMING CAN BE VERY FUN AND REWARDING ONCE THE BASICS ARE OUT OF THE WAY. KEEP PRACTICING, KEEP EXPERIMENTING, AND KEEP MAKING AWESOME GAMES!!!

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

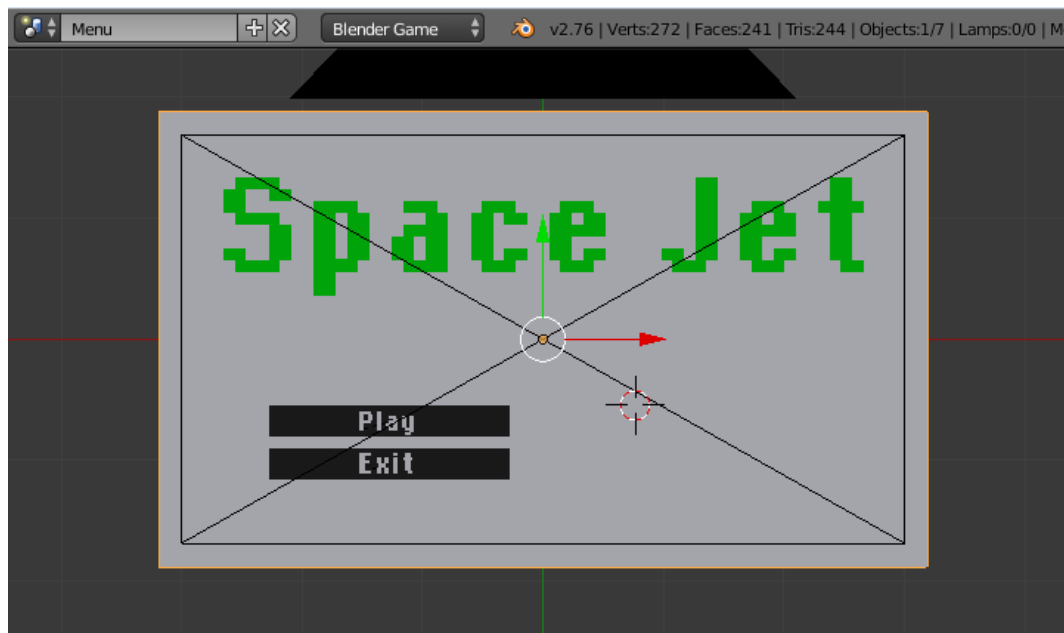
SHIFT+S: SET CURSOR

CTRL+J: JOIN MESHES

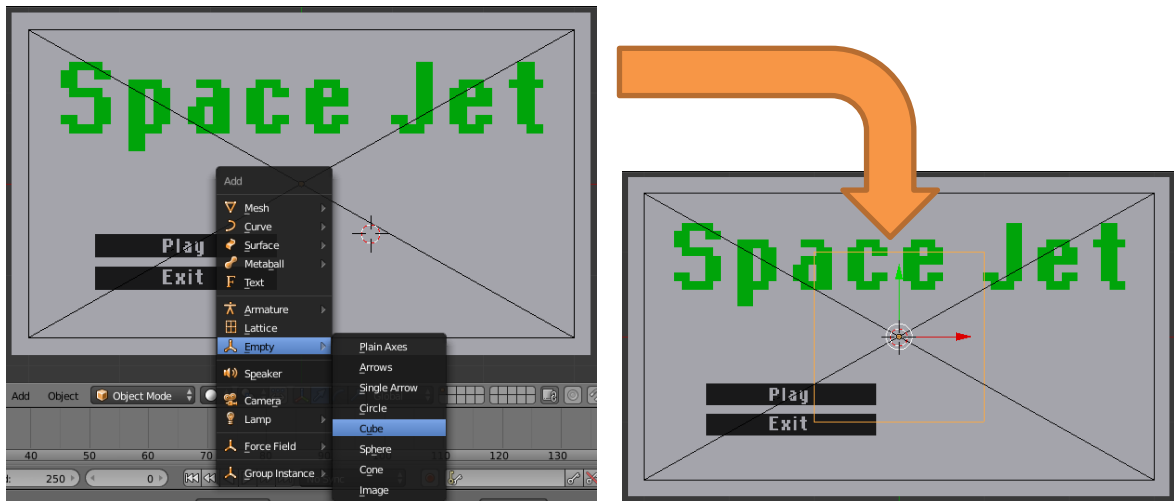
Z: TOGGLE WIREFRAME MODE

SHIFT+D: DUPLICATE

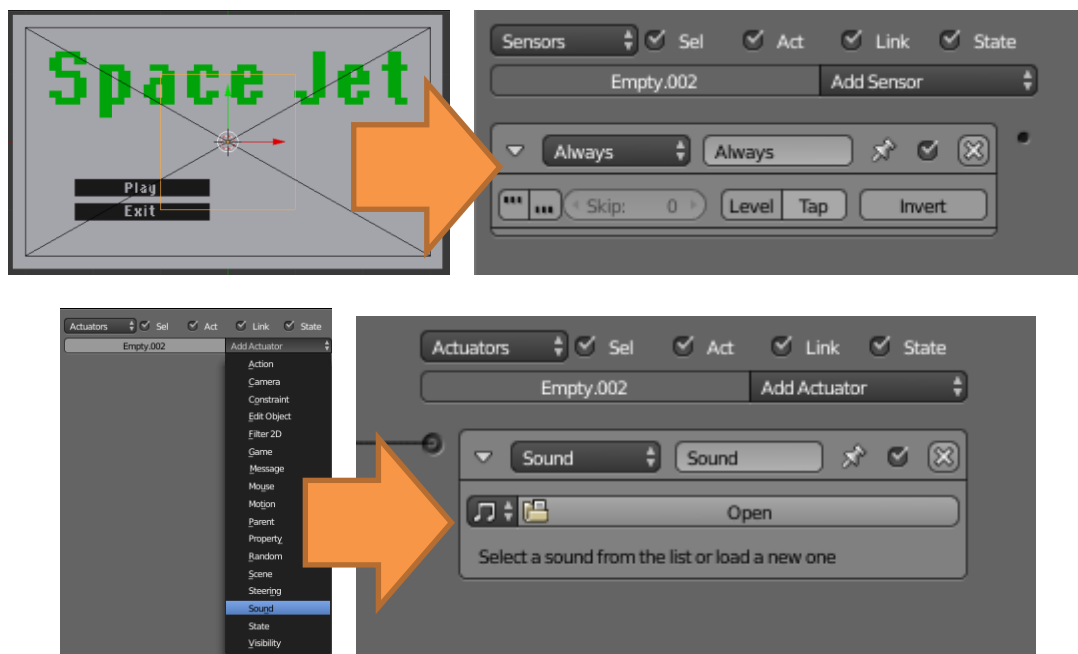
- 1) LET'S START FIRST WITH SOUND EFFECTS. ACQUIRING SOUND EFFECTS AND MUSIC FILES MIGHT BE DIFFICULT FOR SOME PEOPLE, PARTICULARLY THOSE WITHOUT ACCESS TO INTERNET AND A CREDIT CARD. YOU COULD ALWAYS PURCHASE MUSIC OR MAKE YOUR OWN, BUT BOTH OPTIONS CAN BE EXPENSIVE. IN ANY CASE, DON'T WORRY IF YOU CAN'T FIND MUSIC AND SOUND EFFECT FILES TO USE IN YOUR GAME. I HAVE INCLUDED SOME GENERIC SOUNDS TO WORK WITH FOR NOW.



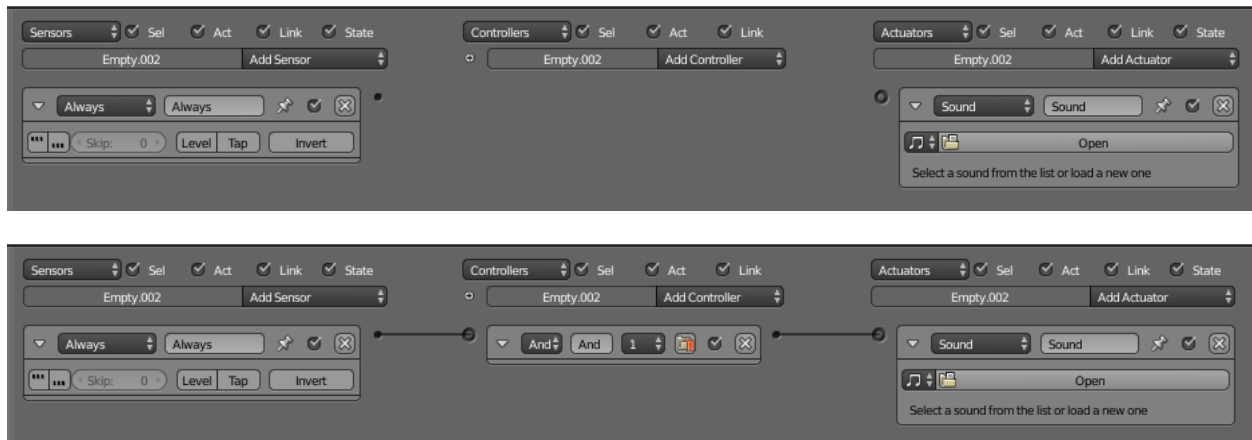
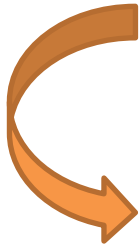
- 2) I'M STARTING IN MY MENU SCENE.



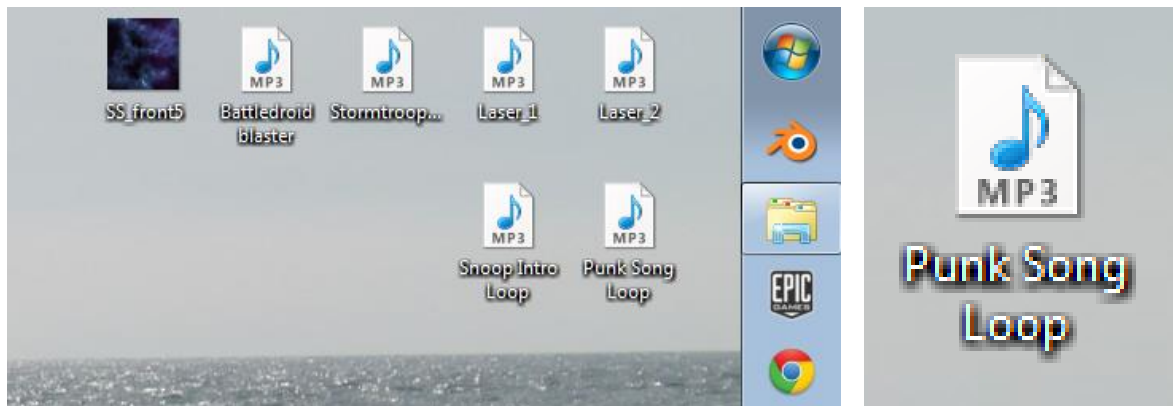
3) MAKE SURE NOTHING IN YOUR SCENE IS SELECTED. PRESS 'A' TO UNSELECT EVERYTHING. PRESS 'SHIFT+A' AND ADD AN 'EMPTY' CUBE.



4) WITH THE EMPTY SELECTED, ADD AN 'ALWAYS' SENSOR AND A 'SOUND' ACTUATOR.



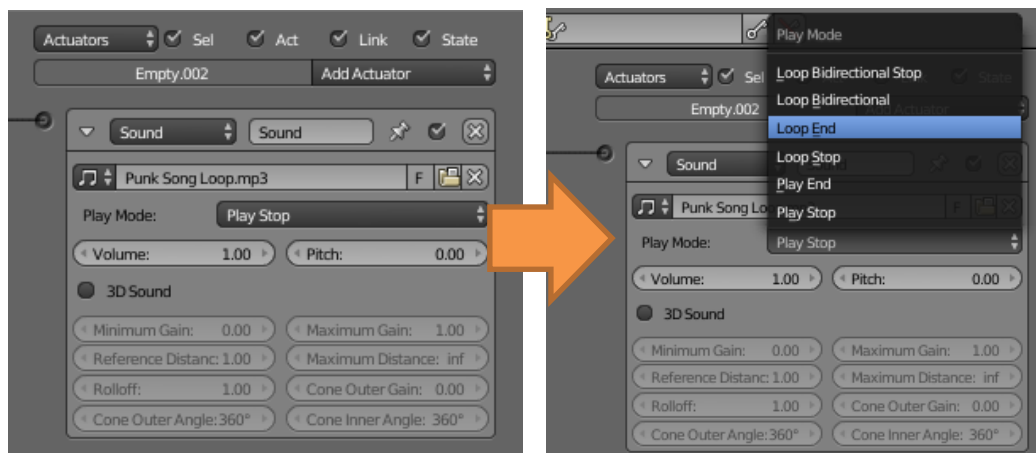
5) HOOK THE BLOCKS TOGETHER AS SHOWN.



6) NOW, LOCATE A FILE THAT YOU'D LIKE TO USE FOR THE SONG THAT PLAYS DURING THE MENU. IN THIS CASE, I HAVE ALL THE FILES I NEED ON MY DESKTOP. I'M GOING TO BE USING THE PUNK SONG BECAUSE IT DOESN'T VIOLATE ANY COPY RIGHTS, BUT YOU CAN USE A DIFFERENT ONE IF YOU'D LIKE.



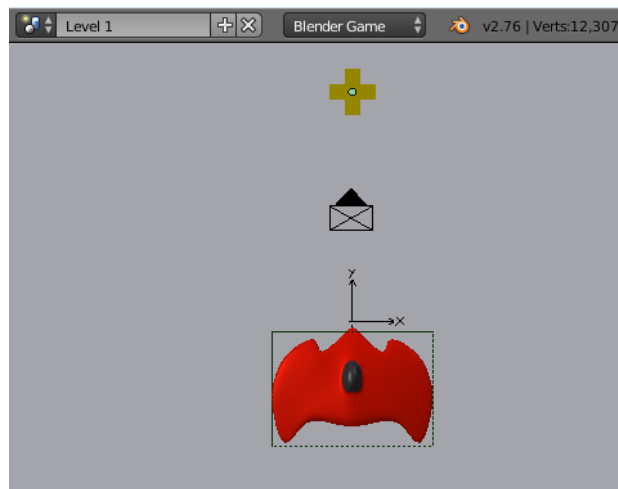
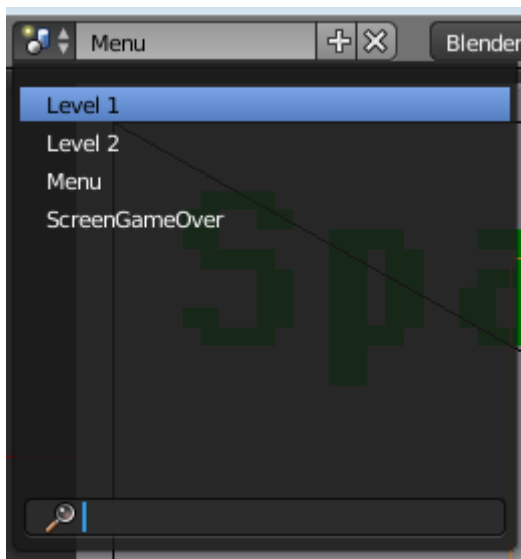
- 7) YOUR SOUND FILE MAY BE LOCATED IN A DIFFERENT FOLDER ON YOUR COMPUTER. TRY TO KEEP ALL OF THE FILES THAT YOU USE FOR YOUR GAME IN ONE FOLDER. NOW THAT YOU KNOW WHERE YOUR FILE IS, CLICK 'OPEN' IN YOUR MENU SCREEN SOUND ACTUATOR. LOCATE YOUR FILE (IN THIS CASE, MY 'PUNK SONG' IS LOCATED ON MY DESKTOP), SELECT IT AND CLICK 'OPEN SOUND'.



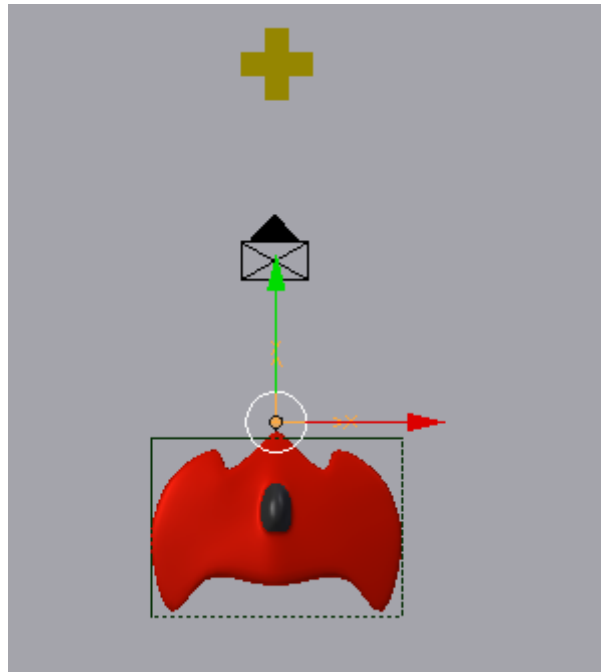
- 8) YOU SHOULD SEE THE NAME OF YOUR SONG IN THE BLOCK. NEXT TO PLAY MODE, SELECT 'LOOP END'.



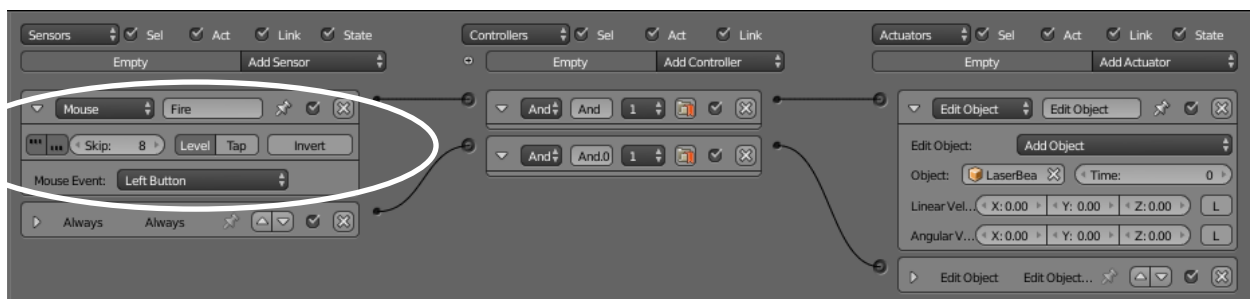
9) PLAY YOUR GAME STARTING AT YOUR MENU SCREEN BY PRESSING 'P' OR 'START'. YOUR SONG SHOULD NOW PLAY IN A LOOP UNTIL A MENU OPTION IS SELECTED.



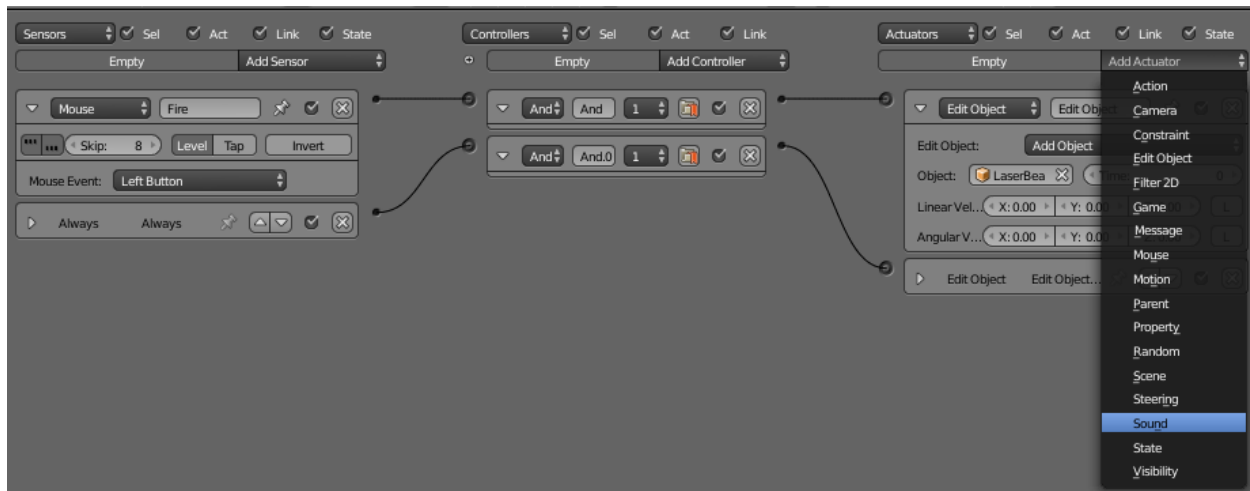
10) LET'S ADD A LASER NOISE WHEN OUR SHIP FIRES. SWITCH TO SCENE 'LEVEL 1'.



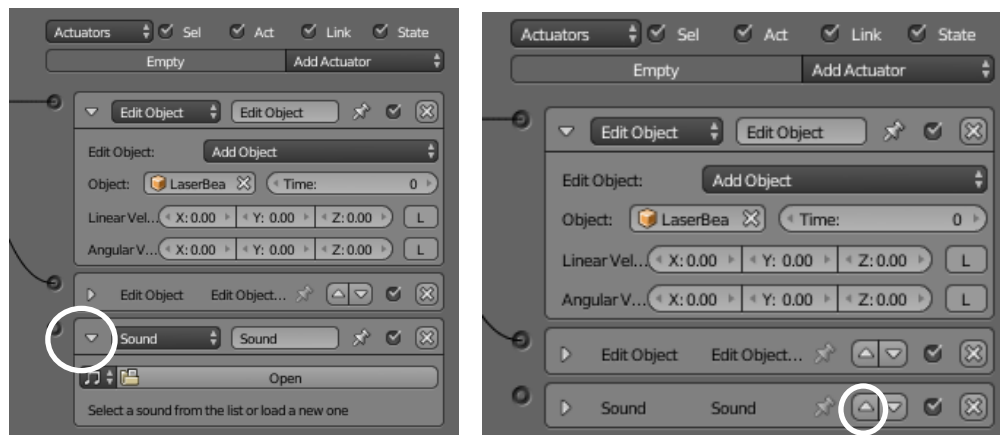
11) SELECT YOUR EMPTY ARROWS THAT SPAWN YOUR LASER.



12) LOCATE THE MOUSE 'FIRE' SENSOR (IN THIS CASE, IT SHOWS MY SHIP FIRING WITH THE 'LEFT MOUSE BUTTON'; YOURS MIGHT BE DIFFERENT).



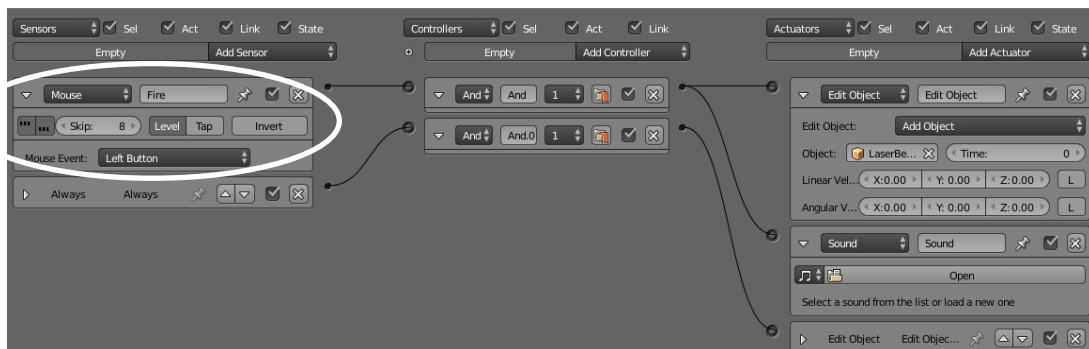
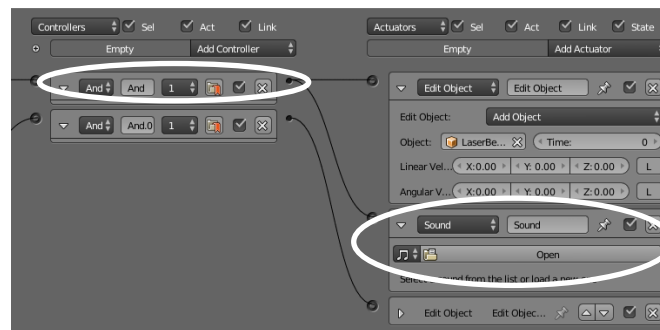
13) THE SENSOR IS CURRENTLY SET TO SPAWN A LASER BEAM EVERY TIME THE LEFT MOUSE BUTTON IS CLICKED. WE'RE GOING TO TELL THE GAME TO ALSO SPAWN A SOUND WHENEVER THE LEFT MOUSE BUTTON IS CLICKED. ADD A 'SOUND ACTUATOR'.



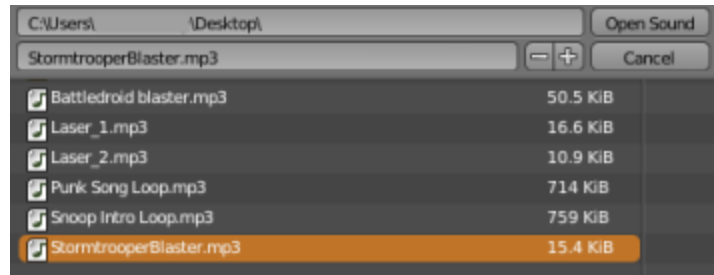
14) MOVE THE ACTUATOR UP IN THE STACK. CLOSE IT BY PRESSING THE LEFT ARROW. MOVE IT UP BY PRESSING THE UP ARROW.



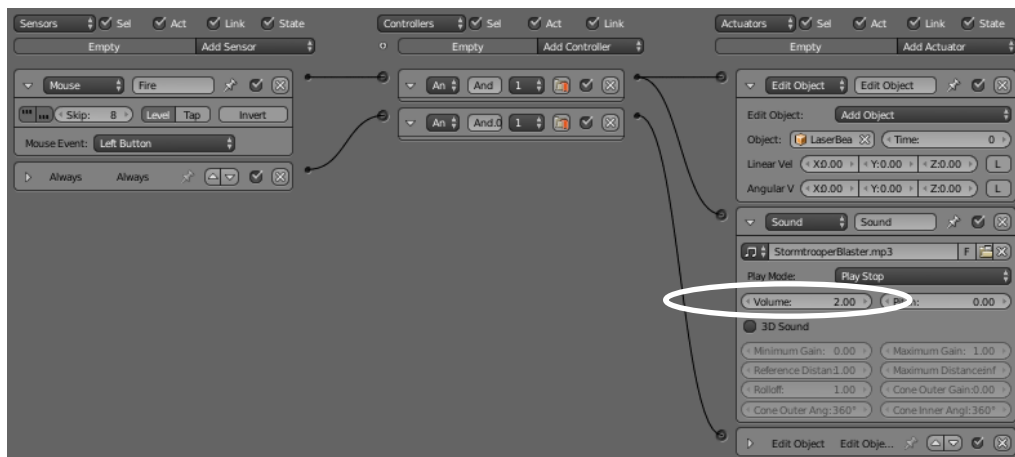
15) YOUR SOUND ACTUATOR SHOULD NOW BE BETWEEN THE TWO EDIT OBJECT BLOCKS. EXPAND THE SOUND BLOCK.



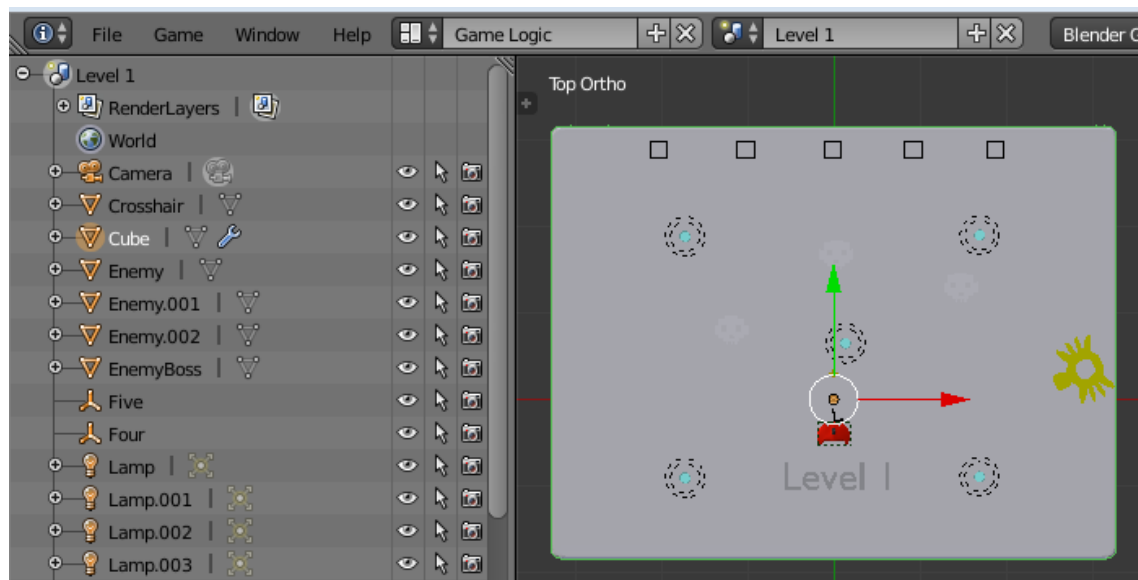
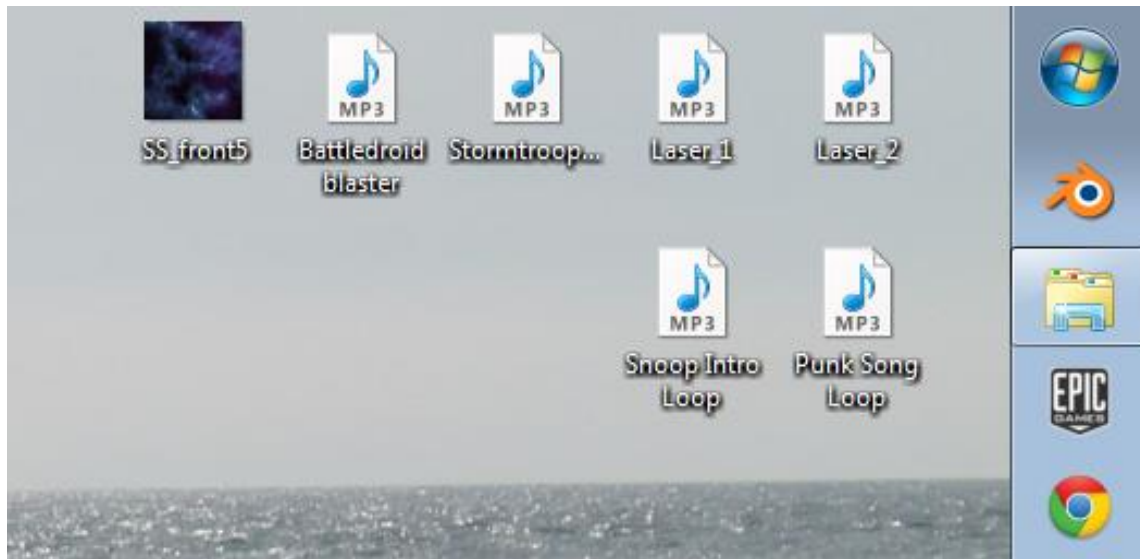
16) CONNECT THE SOUND ACTUATOR TO THE FIRST 'AND' CONTROLLER. THIS IS THE 'AND' CONTROLLER THAT SETS THE 'FIRE' BUTTON TO 'LEFT MOUSE BUTTON'.



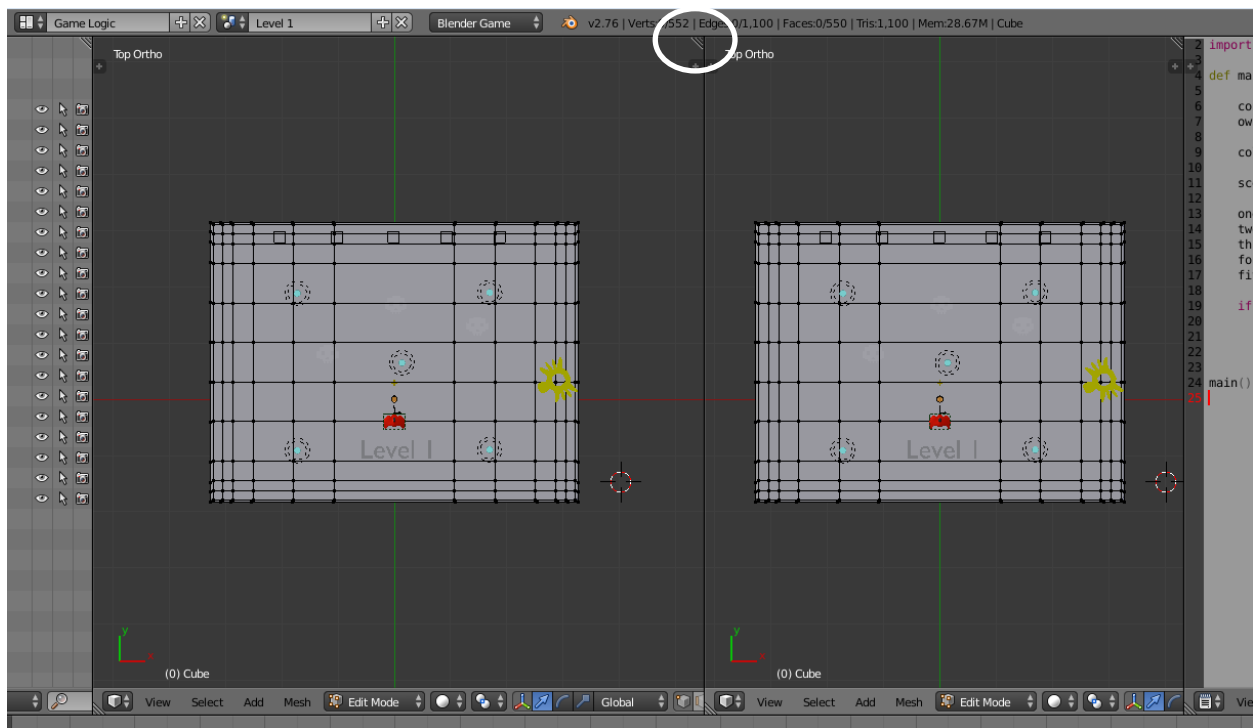
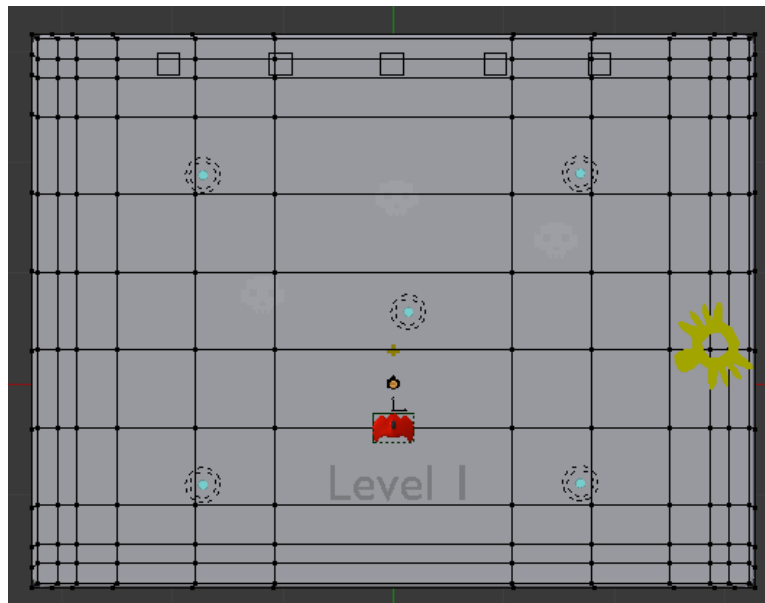
- 17) IF I WERE TO PUBLISH THIS GAME, THE LASER SOUND I'D USE WOULD BE LASER_1.MP3. THE HIGHLIGHTED STORMTROOPERBLASTER.MP3 CAN ONLY BE USED IN PERSONAL PROJECTS DUE TO COPYRIGHT LAW.



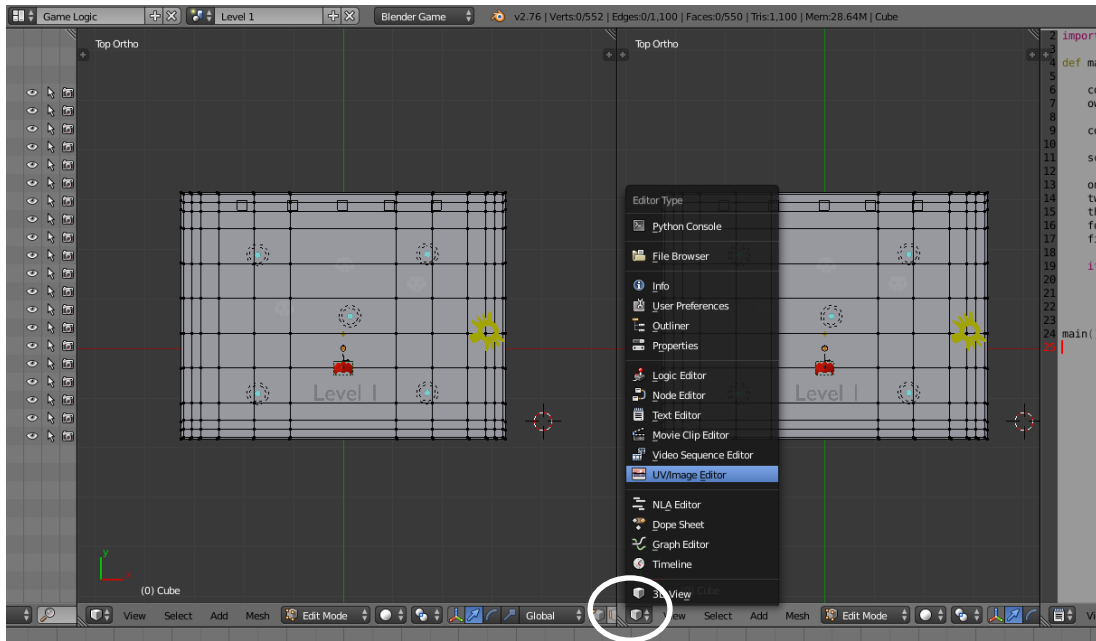
- 18) YOUR EMPTY LOGIC BRICKS SHOULD LOOK LIKE THE PICTURE. I TURNED UP THE VOLUME IN THE BLASTER SOUND ACTUATOR.
- 19) TRY OUT YOUR GAME. YOUR MENU SHOULD PLAY A SONG AND EVERY TIME YOU FIRE YOU SHOULD HERE A BLASTER SHOT. REPEAT THIS STEP FOR LEVEL 2.



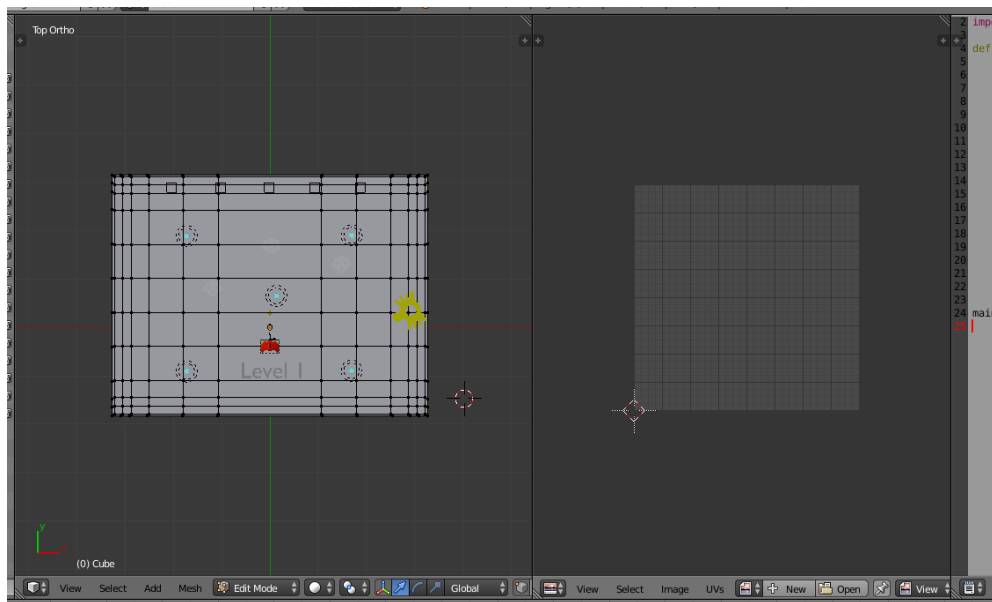
20) IF YOU WANT TO ADD A PICTURE TO YOUR BACKGROUND, FIRST LOCATE YOUR PICTURE. I WILL BE USING A SPACE BACKGROUND GENERATED BY SPACESCAPE. SELECT YOUR BACKGROUND FLOOR/CUBE (I HAVE SELECTED MY LEVEL 1 CUBE BACKGROUND).



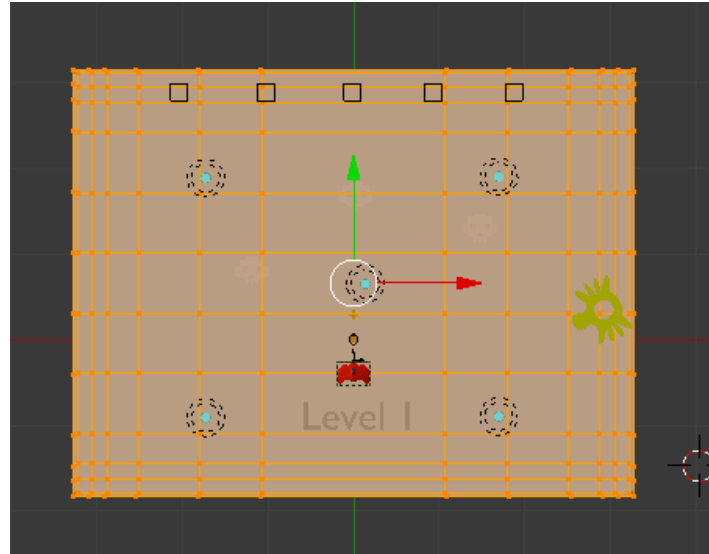
21) PRESS 'TAB' TO GO INTO EDIT MODE. USE THE DASHED CORNER TO SPLIT YOUR SCREEN.



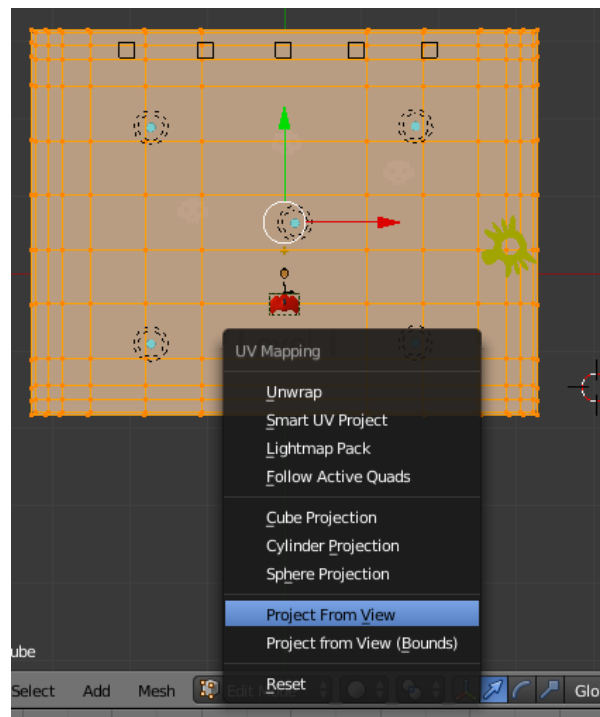
22) IN THE SECOND SCREEN, SELECT 'UV/IMAGE EDITOR' FROM THE EDITOR TYPE DROPDOWN.



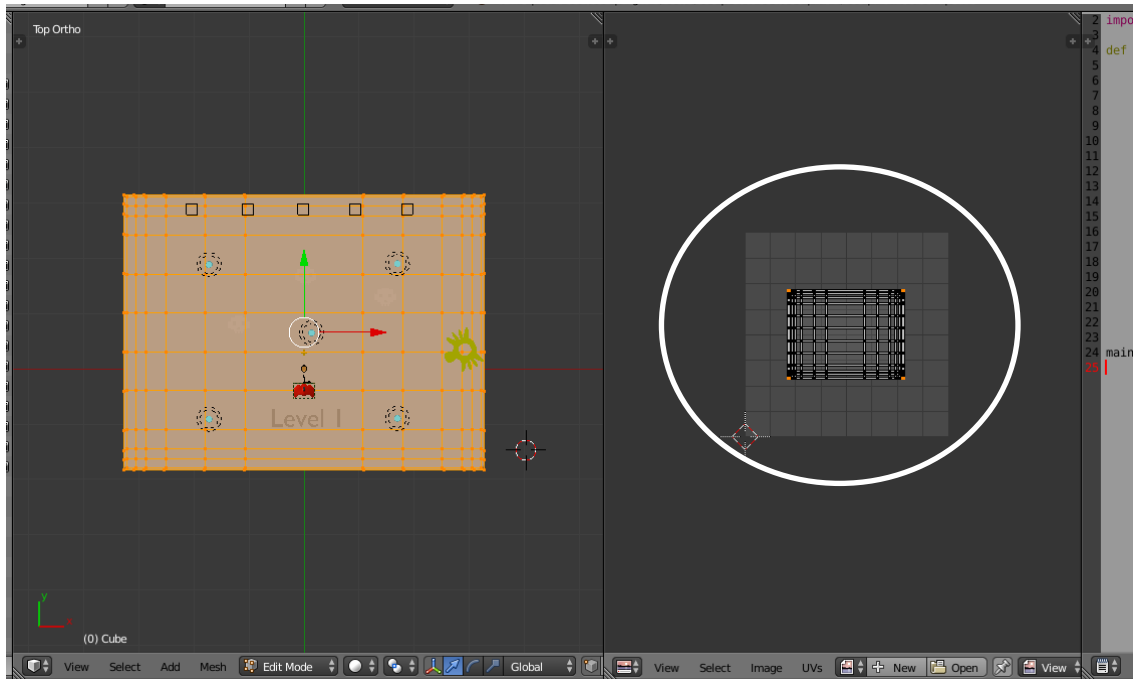
23) THE UV EDITOR SHOULD BE BLANK. IF NOT, FIND THE 'X' AT THE BOTTOM AND DELETE THE PICTURE IN IT.



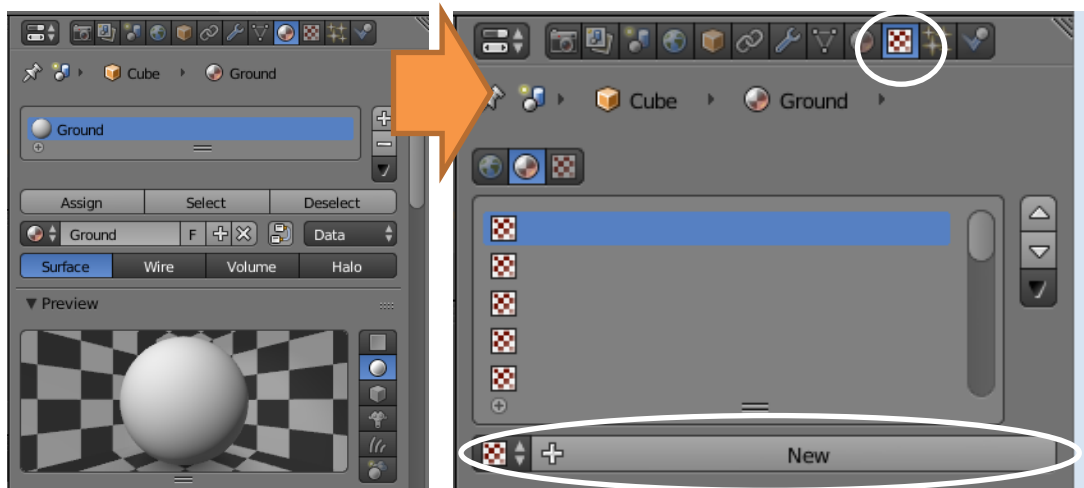
24) PRESS 'A' (WHILE STILL IN EDIT MODE) TO SELECT THE BACKGROUND CUBE.



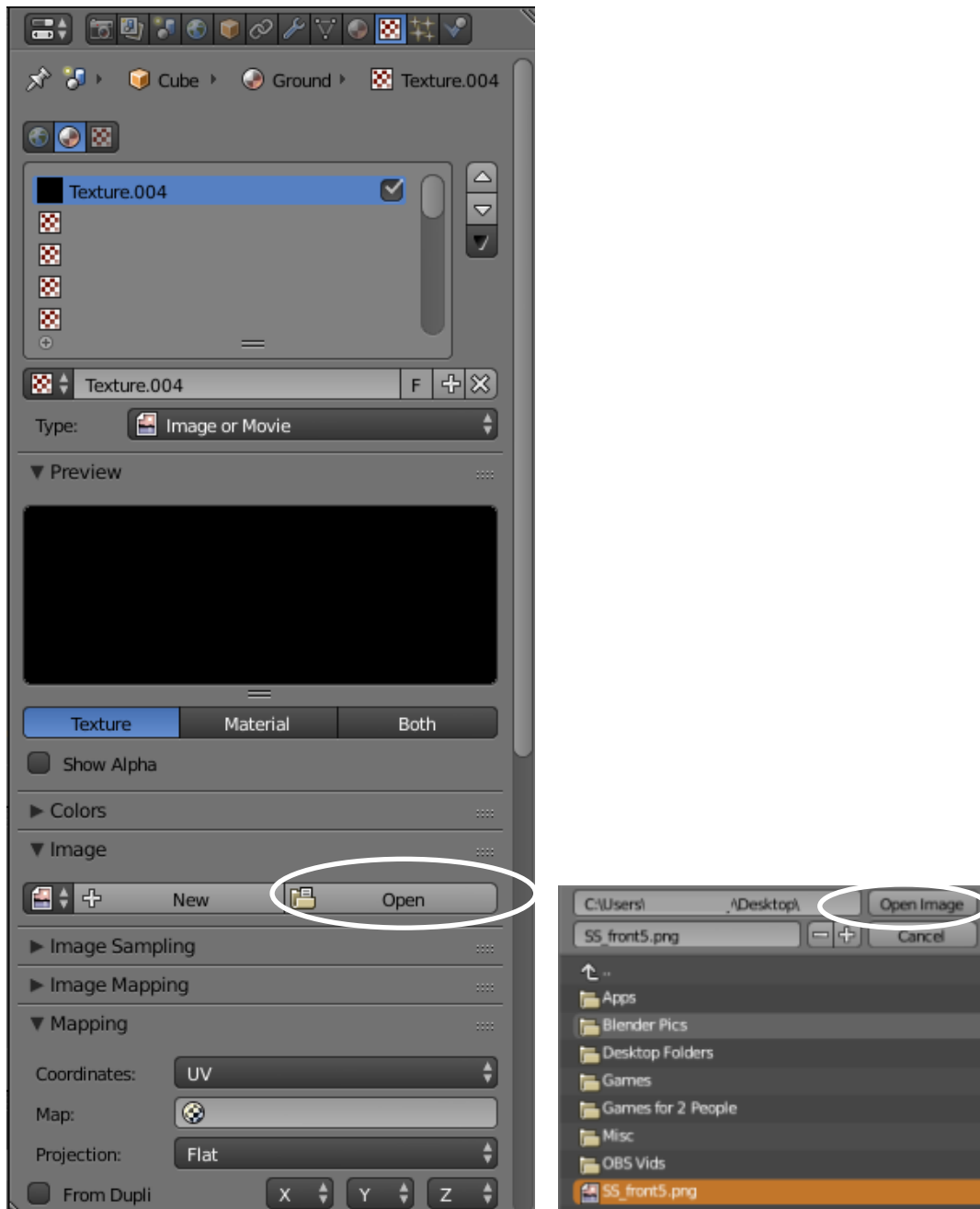
25) PRESS 'U'. THIS BRINGS UP THE UNWRAP MENU. SELECT 'PROJECT FROM VIEW'.



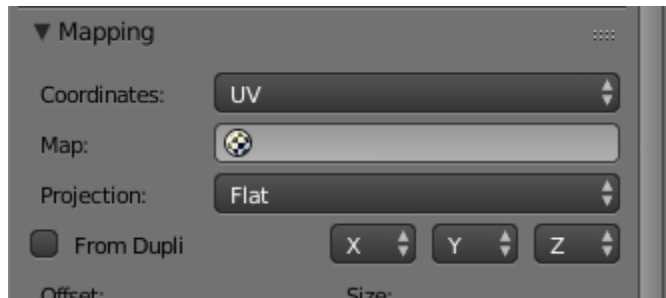
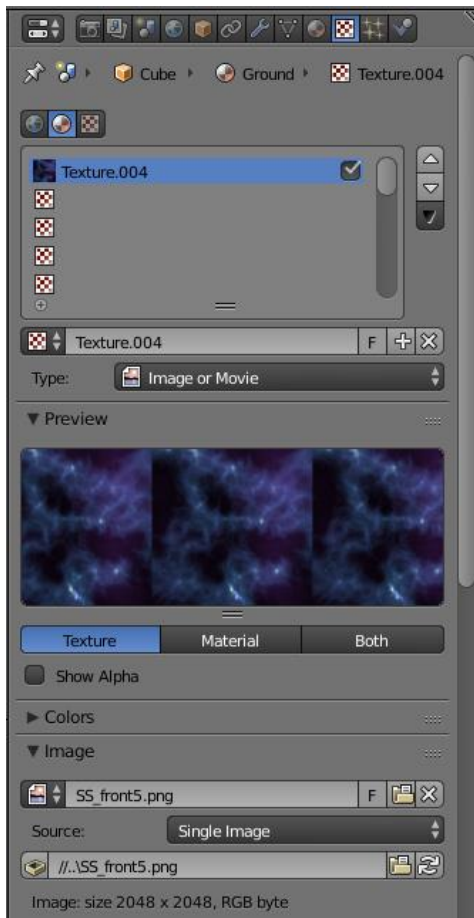
26) YOU SHOULD SEE YOUR OBJECTS VERTICES IN THE UV/IMAGE EDITOR.



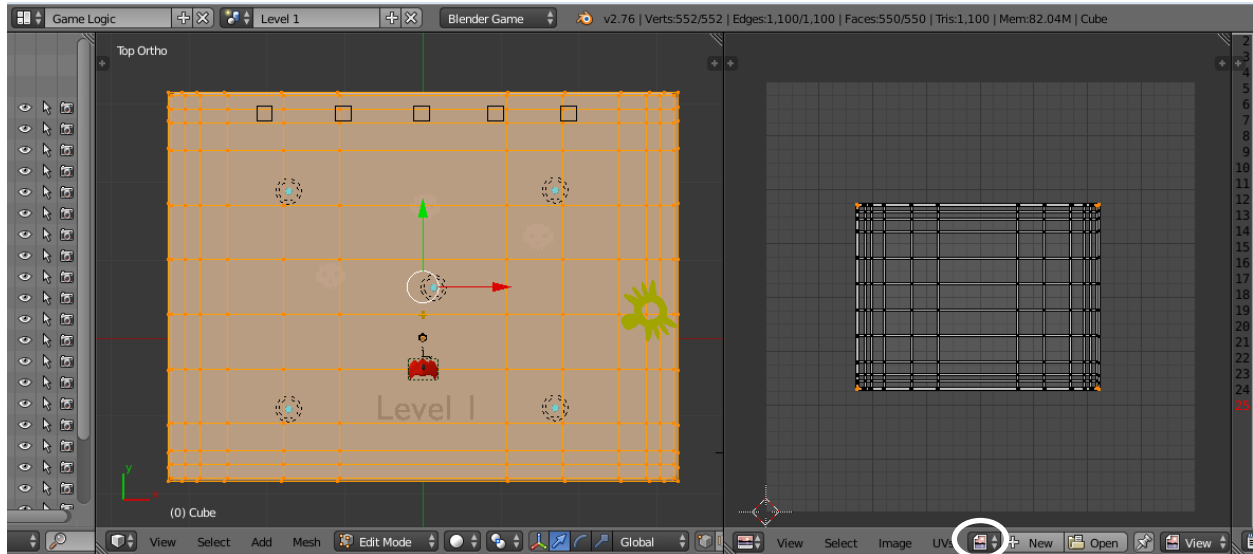
27) GO INTO THE MATERIAL TAB.
YOUR GROUND MATERIAL SHOULD BE SELECTED. CLICK ON THE TEXTURE TAB TO THE RIGHT, THEN CLICK 'NEW'.



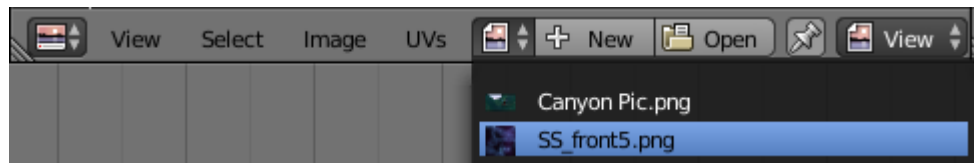
28) IN THE IMAGE BOX, SELECT 'OPEN'. SELECT THE NAME OF YOUR FILE FOR THE BACKGROUND. IN THIS EXAMPLE, I'M SELECTING MY PICTURE FROM THE DESKTOP. CLICK 'OPEN IMAGE'.



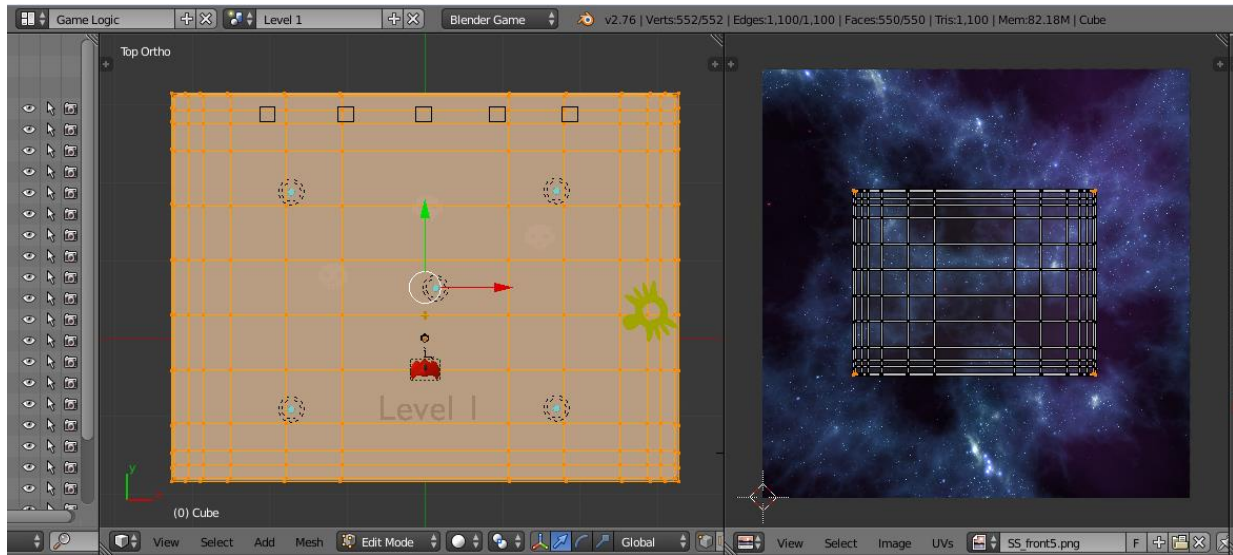
29) YOU SHOULD NOW SEE YOUR IMAGE IN THE PREVIEW BOX IN THE TEXTURE TAB. SCROLL DOWN AND MAKE SURE MAPPING COORDINATES ARE SET TO 'UV'.



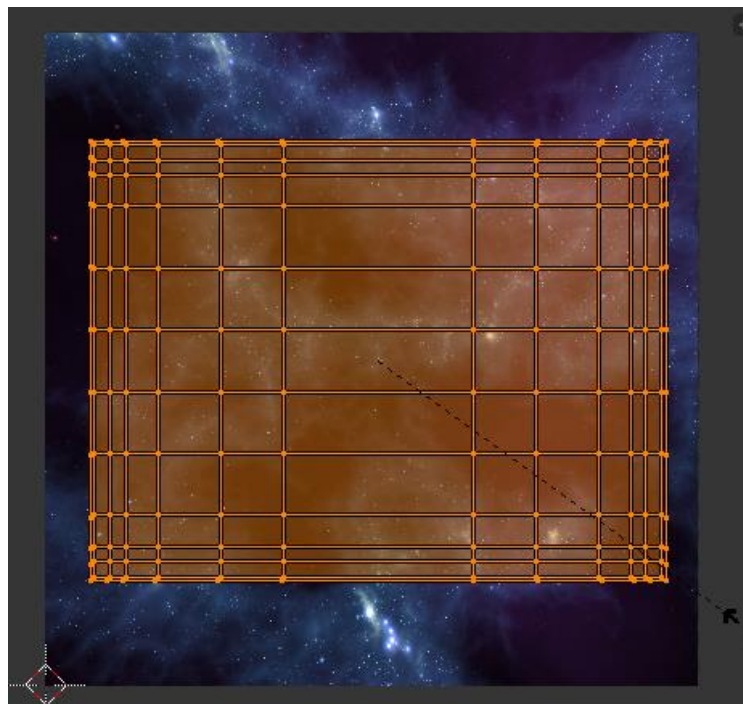
30) TO APPLY THE TEXTURE, FIND THE TEXTURE DROPDOWN IN THE UV/EDITOR. IT IS AT THE BOTTOM OF THE WINDOW, NEXT TO 'NEW' AND 'OPEN'.



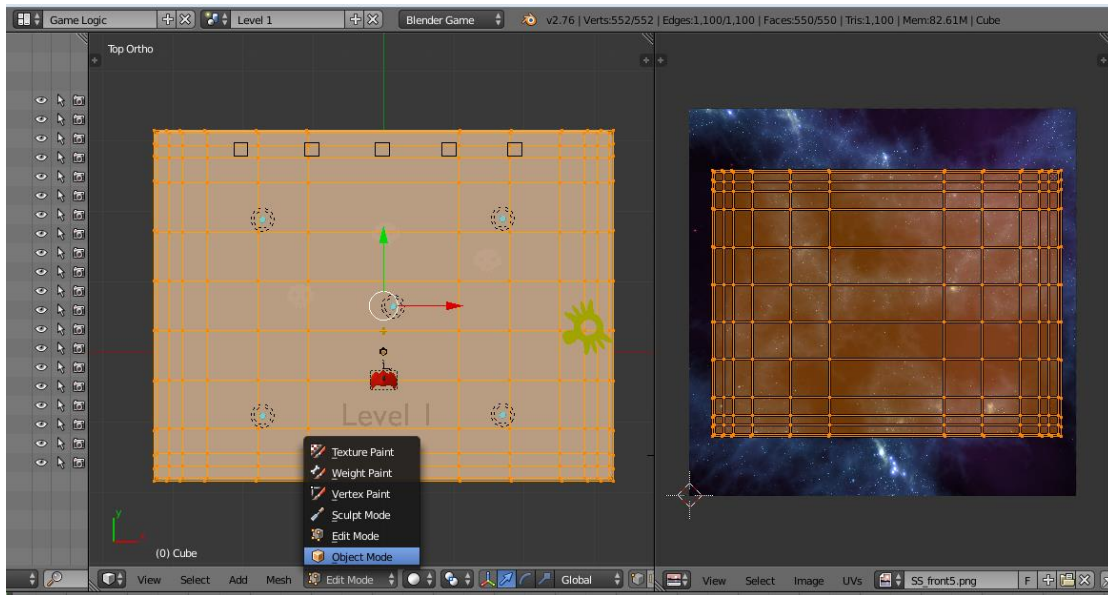
31) SELECT THE NAME OF THE TEXTURE.



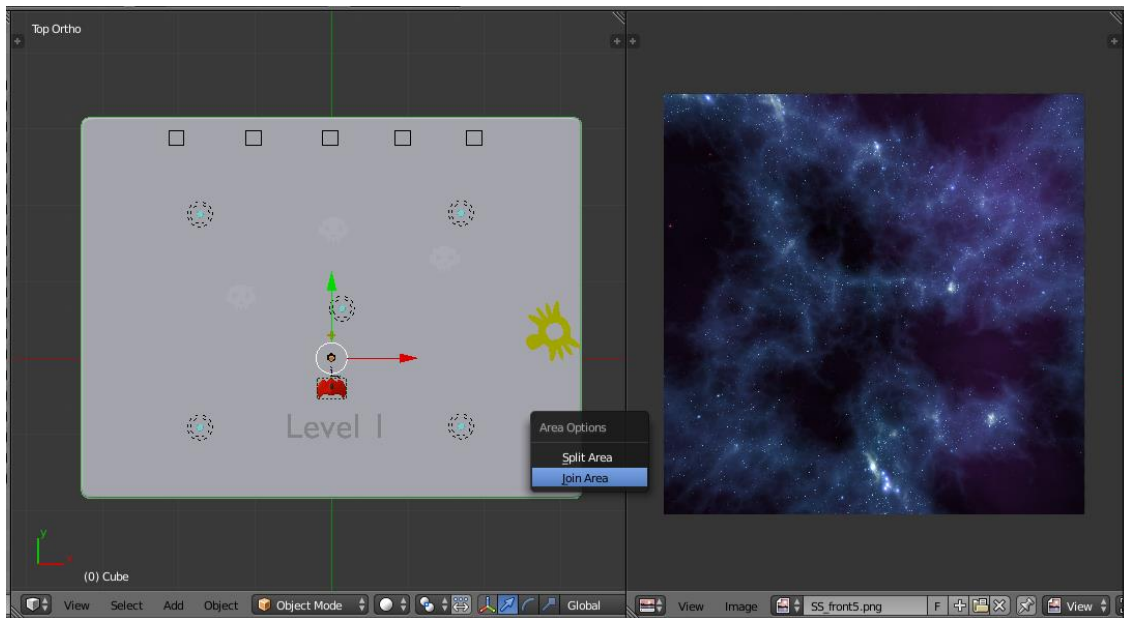
32) THE TEXTURE SHOULD APPEAR IN THE UV/IMAGE EDITOR.



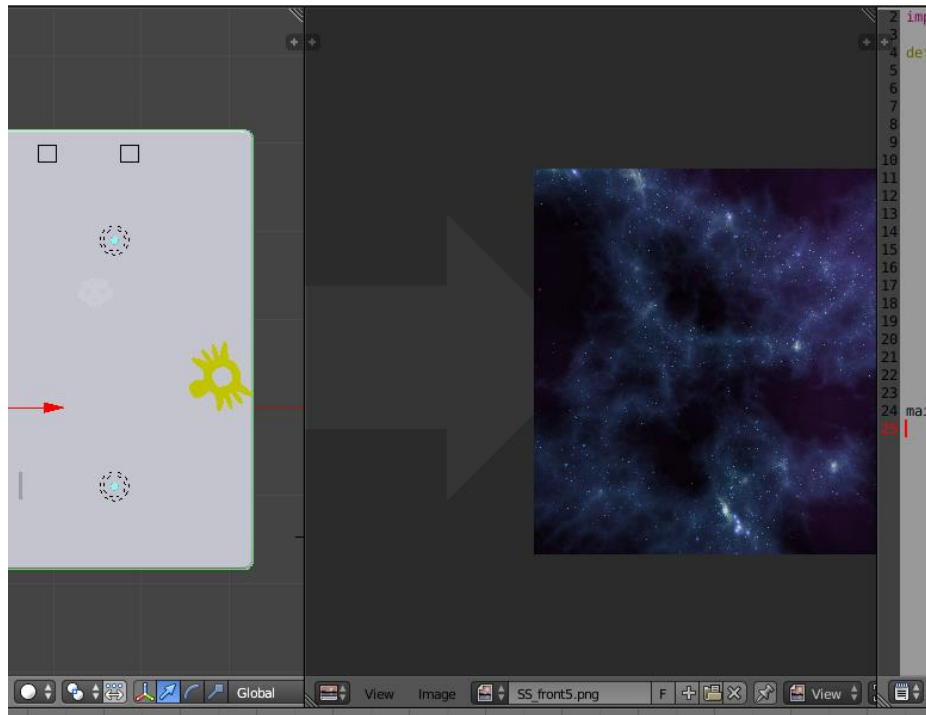
33) PRESS 'A' TO SELECT THE VERTICES IN THE UV/IMAGE EDITOR. PRESS 'S' AND SCALE THE RECTANGLE UNTIL IT IS ALMOST AS BIG AS THE PICTURE.



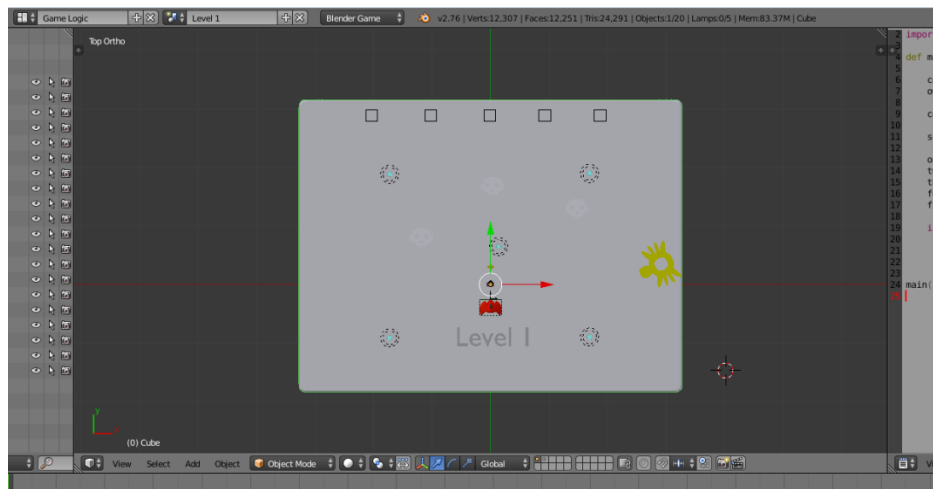
34) GO INTO OBJECT MODE ('TAB' OR SELECT FROM THE DROPDOWN PICTURED).



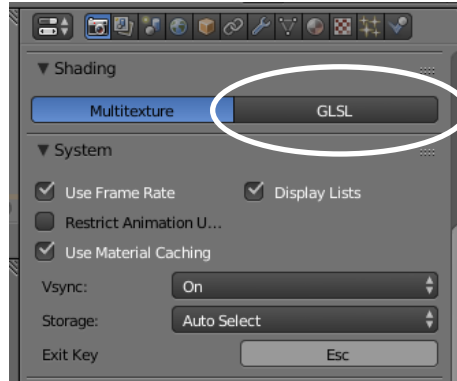
35) CLOSE THE UV/IMAGE EDITOR BY HOVERING THE CURSOR OVER THE DIVIDING LINE; RIGHT+CLICK; SELECT 'JOIN AREA'.



36) SELECT THE UV/IMAGE EDITOR SIDE (THE BIG ARROW WILL POINT TO IT). LEFT+CLICK.

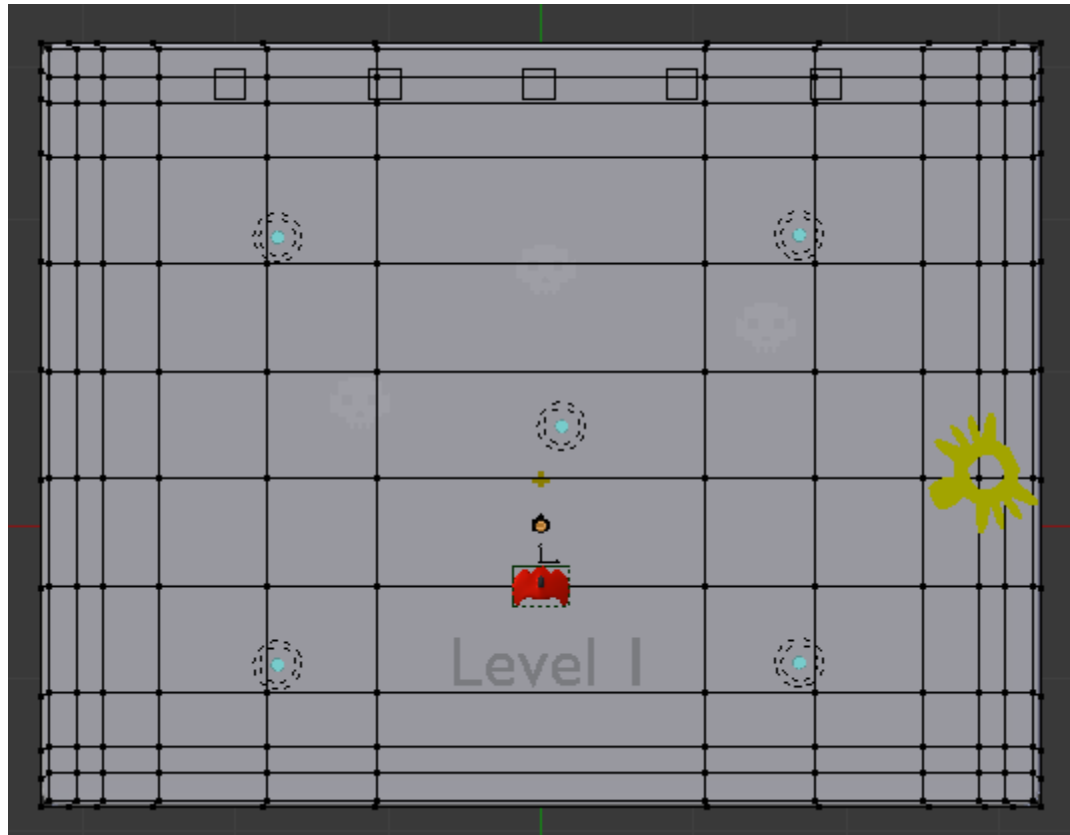


37) THE UV/IMAGE EDITOR SCREEN GOES AWAY. NOW, PLAY YOUR GAME. YOUR TEXTURE SHOULD SHOW UP AS THE BACKGROUND.

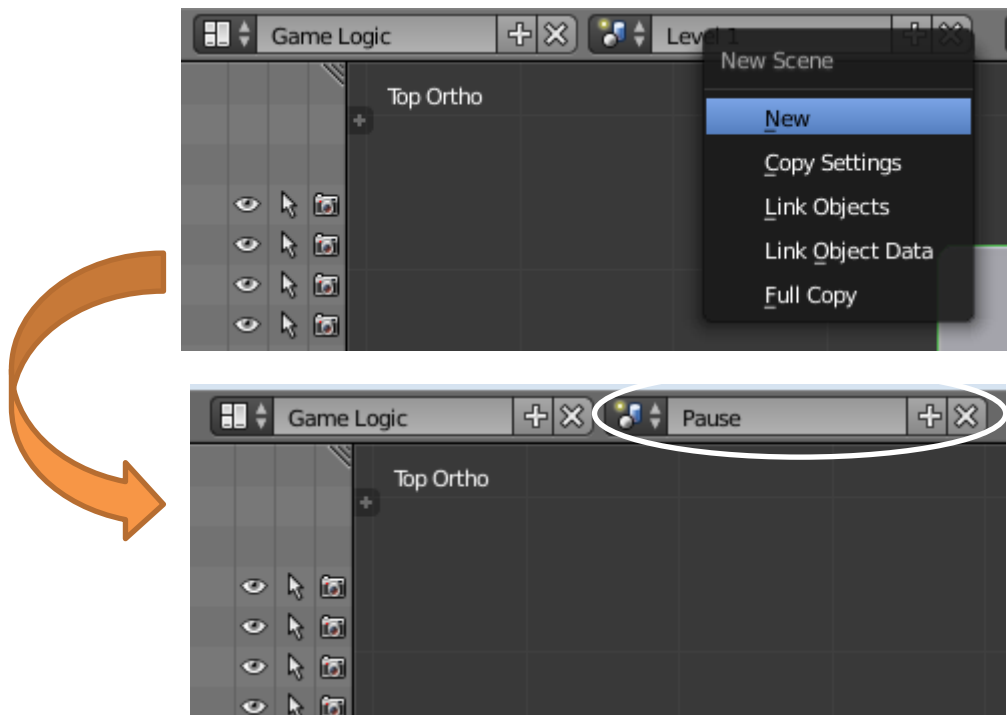


38) IF IT DOES NOT SHOW UP, TRY THE EXITING YOUR GAME AND PLAYING IT AGAIN. IF IT STILL DOESN'T SHOW UP, FIND YOUR SHADING BOX UNDER THE 'RENDER' TAB AND TOGGLE BETWEEN 'MULTITEXTURE' AND 'GLSL'.

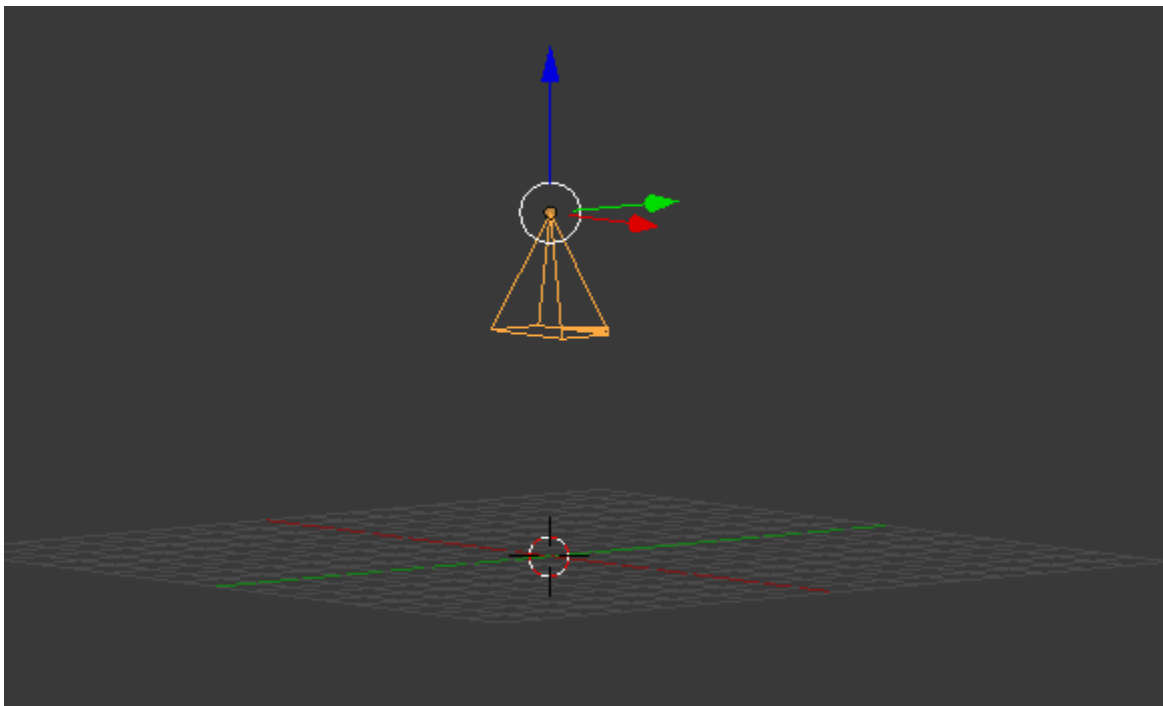
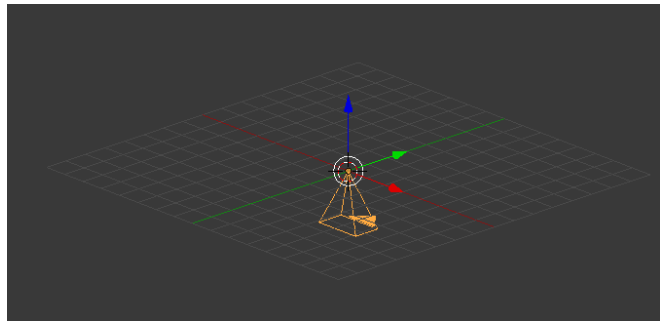
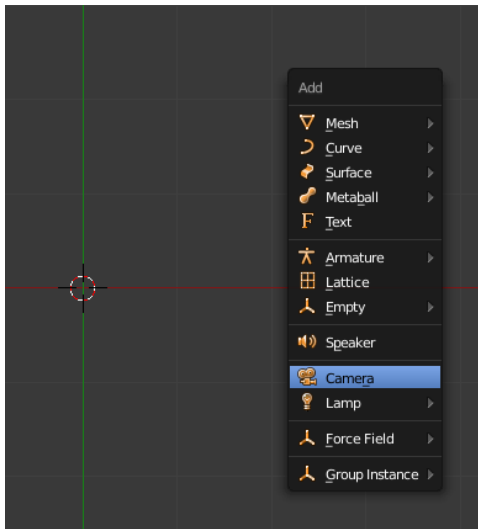
39) TRY ADDING DIFFERENT TEXTURES TO YOUR BACKGROUND PLANES. REMEMBER THAT YOU MUST HAVE A DIFFERENT MESH OBJECT IN EACH LEVEL; OTHERWISE, ANY TEXTURE YOU APPLY TO ONE BACKGROUND WILL CHANGE THEM ALL.



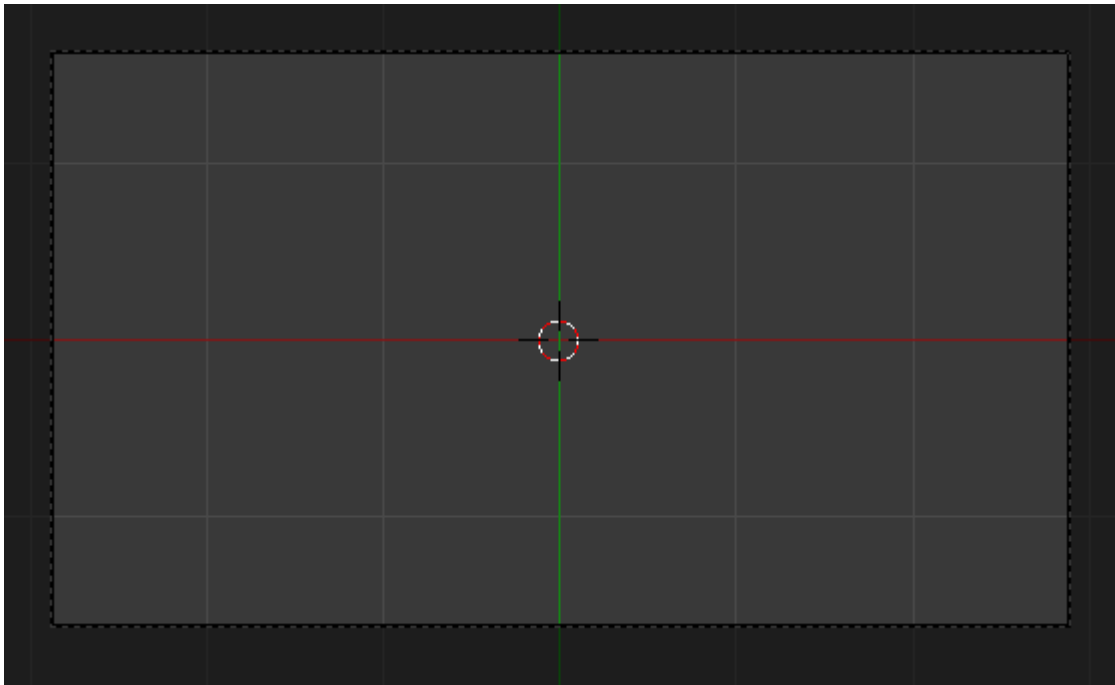
40) BUG FIX: IF YOU HAVE NOTICED THAT YOUR CHARACTER FALLS THROUGH THE FLOOR AT RANDOM SPOTS, ADD A SUBDIVISION SURFACE MODIFIER TO THE FLOOR MESH. THEN, USE CTRL+R TO ADD LOOP CUTS TO MAKE THE SHAPE MORE SQUARE-ISH. SINCE I DID THIS TO MY FLOOR MESH MY CHARACTER HAS NOT FALLEN THROUGH.



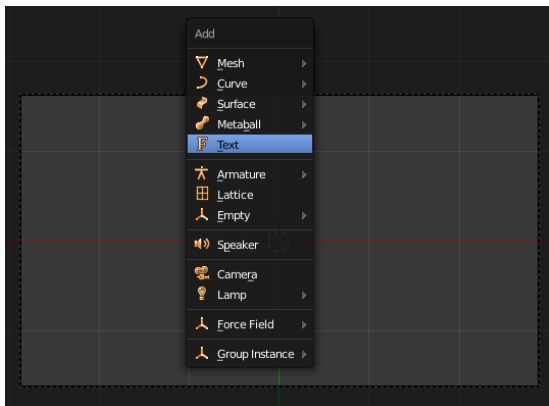
41) NOW LET'S MAKE A SIMPLE PAUSE FUNCTION. ADD A BRAND-NEW, BLANK SCENE. RENAME IT 'PAUSE'.



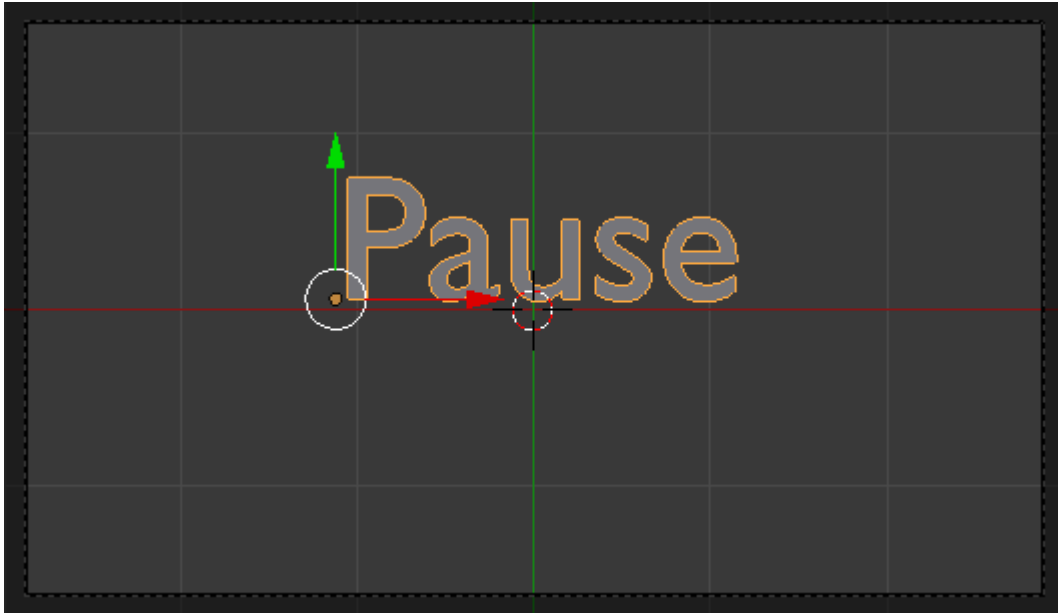
42) PRESS SHIFT+A TO ADD A
CAMERA. DRAG THE CAMERA UP
USING THE BLUE ARROW.



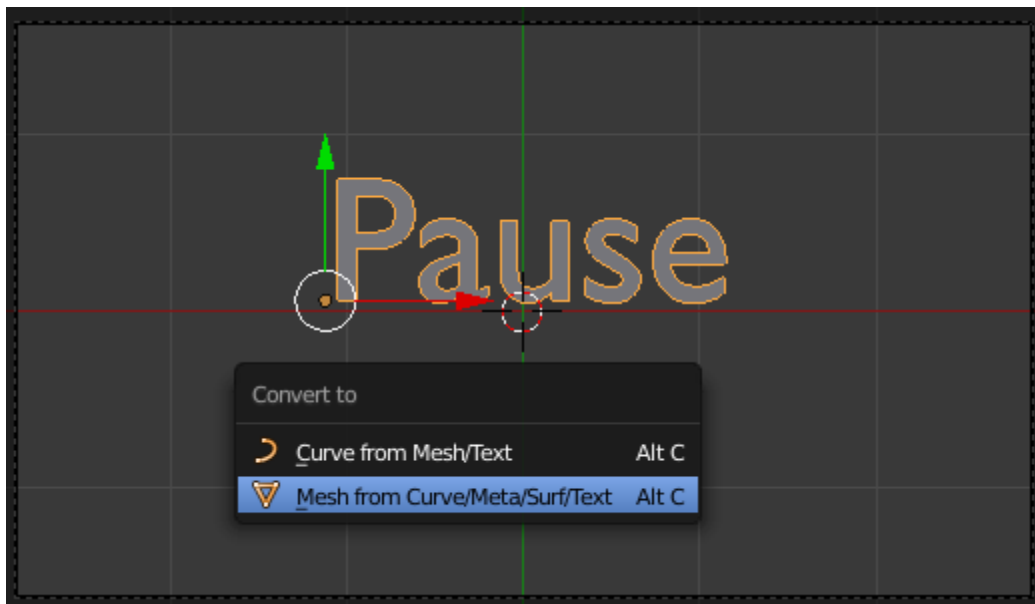
43) GO INTO CAMERA VIEW BY
PRESSING ZERO (NUM. PAD 0).
DESELECT THE CAMERA BY
PRESSING 'A'.



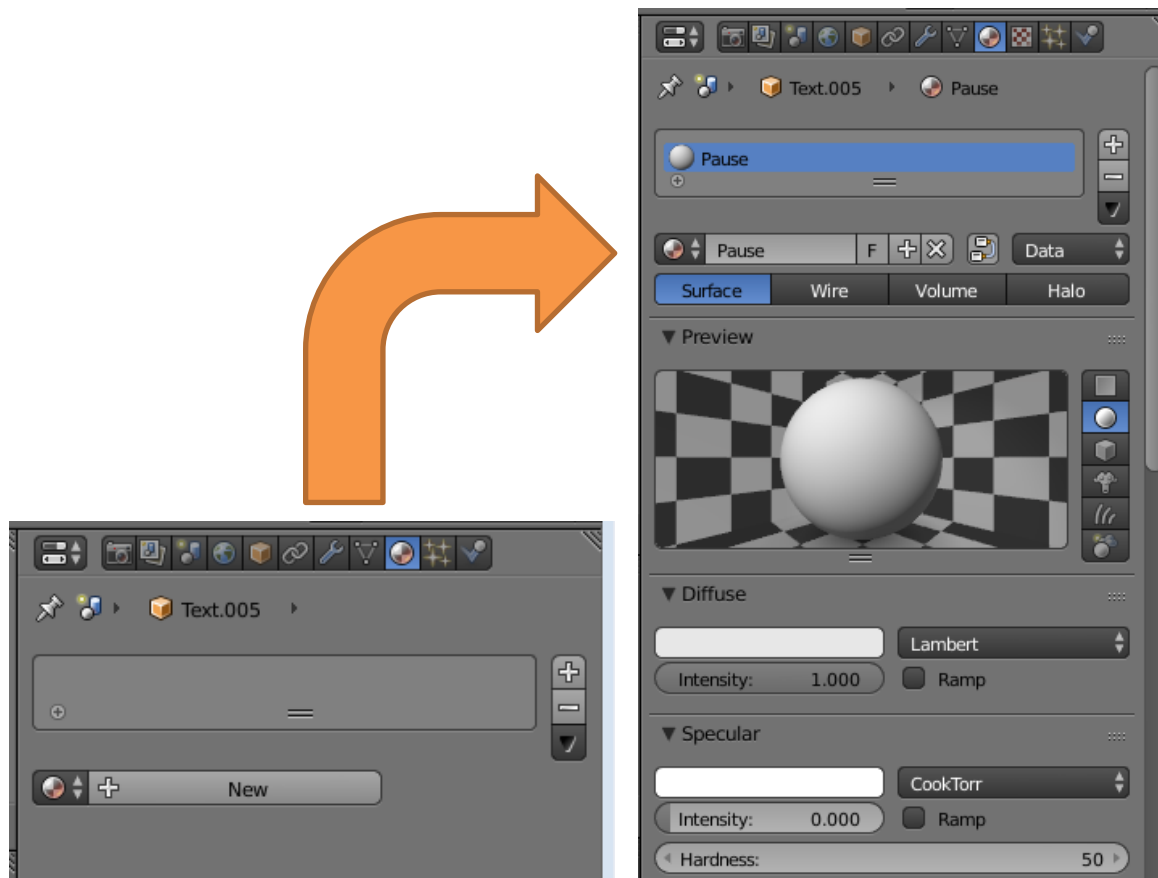
44) PRESS 'SHIFT+A' AND SELECT
'TEXT'.



45) PRESS 'TAB' TO ENTER EDIT MODE. DELETE 'TEXT'. TYPE IN 'PAUSE'.



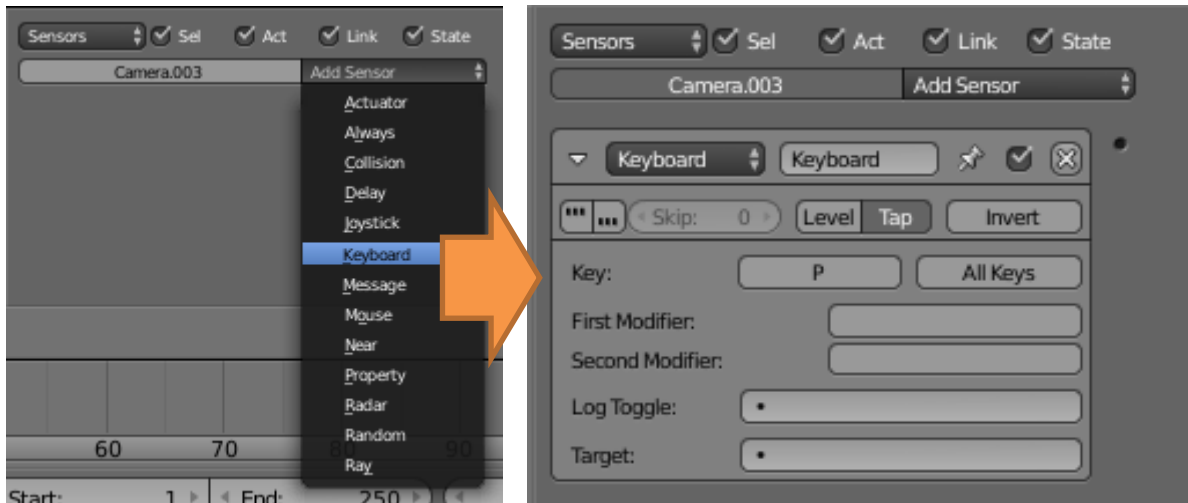
46) PRESS 'ALT+C' AND SELECT 'MESH FROM CURVE/META...'.



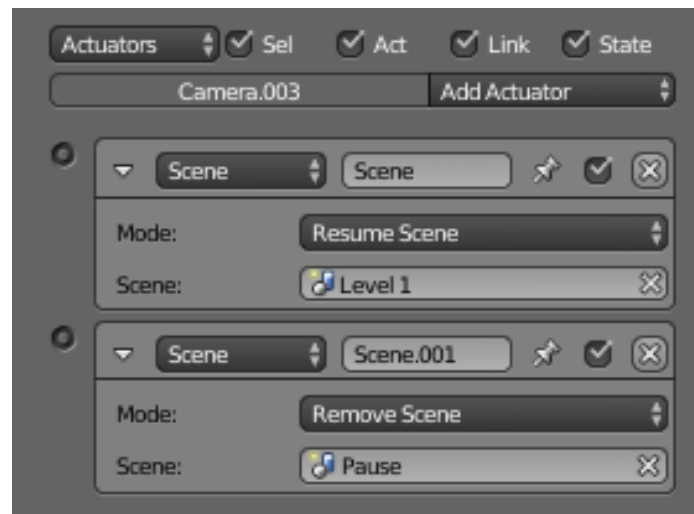
47) IN THE MATERIALS TAB, ADD A NEW MATERIAL. CALL IT 'PAUSE'.



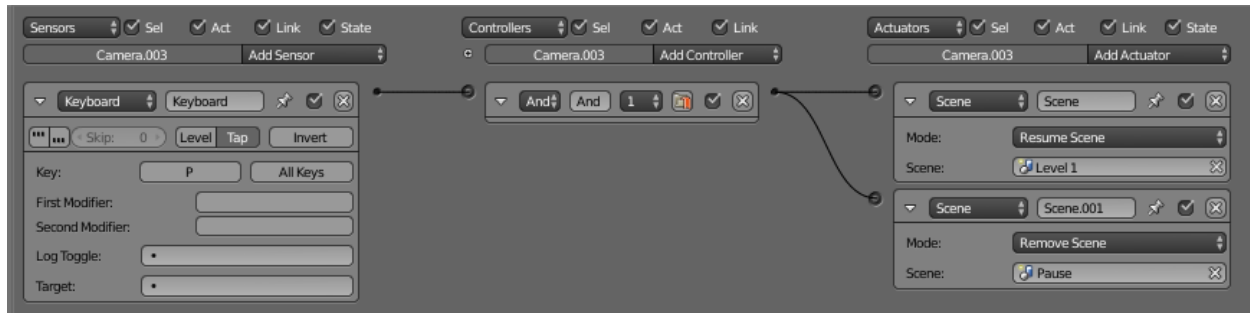
48) SELECT THE CAMERA.



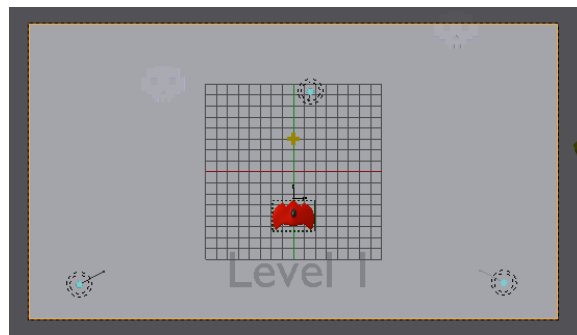
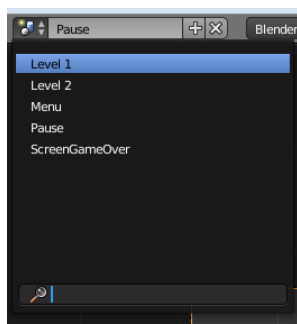
49) IN THE LOGIC BRICKS SECTION, ADD A KEYBOARD SENSOR. SELECT 'TAP'. CLICK ON THE BOX NEXT TO KEY AND PRESS 'P'. 'P' WILL BE OUR PAUSE BUTTON.



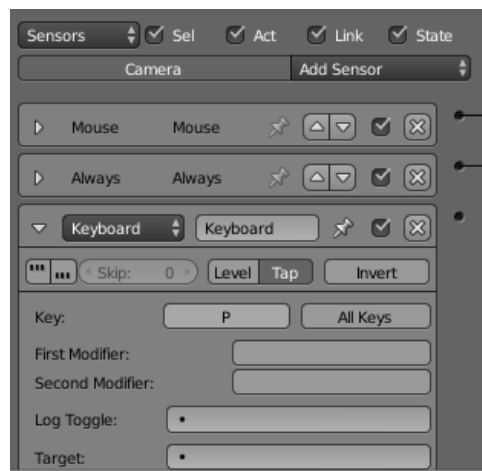
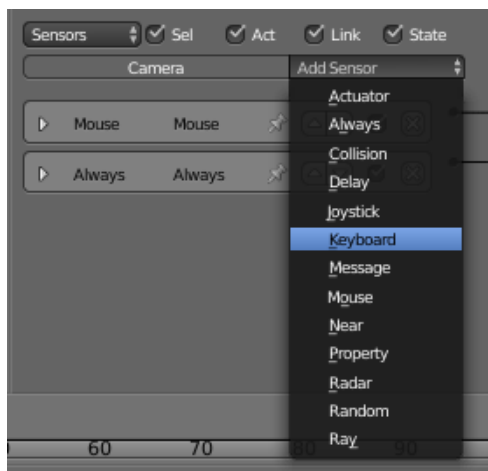
50) ADD TWO SCENE ACTUATORS. SET THE FIRST TO 'RESUME SCENE' AND SELECT 'LEVEL 1'. IN THE SECOND SCENE ACTUATOR, SET MODE TO 'REMOVE SCENE' AND SELECT 'PAUSE'.



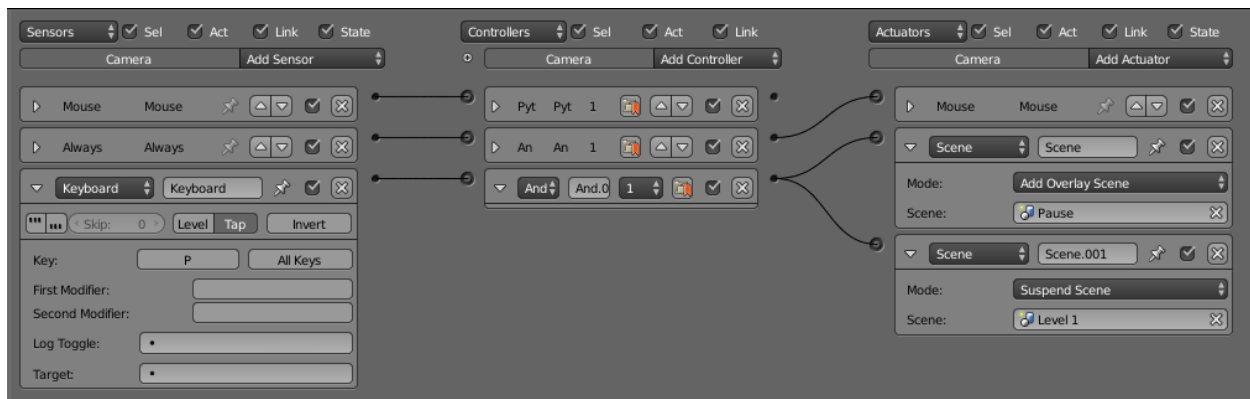
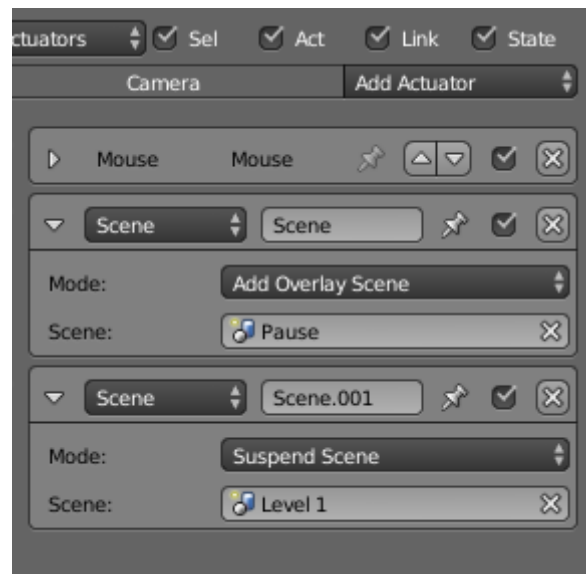
51) CONNECT THE LOGIC BRICKS AS PICTURED.



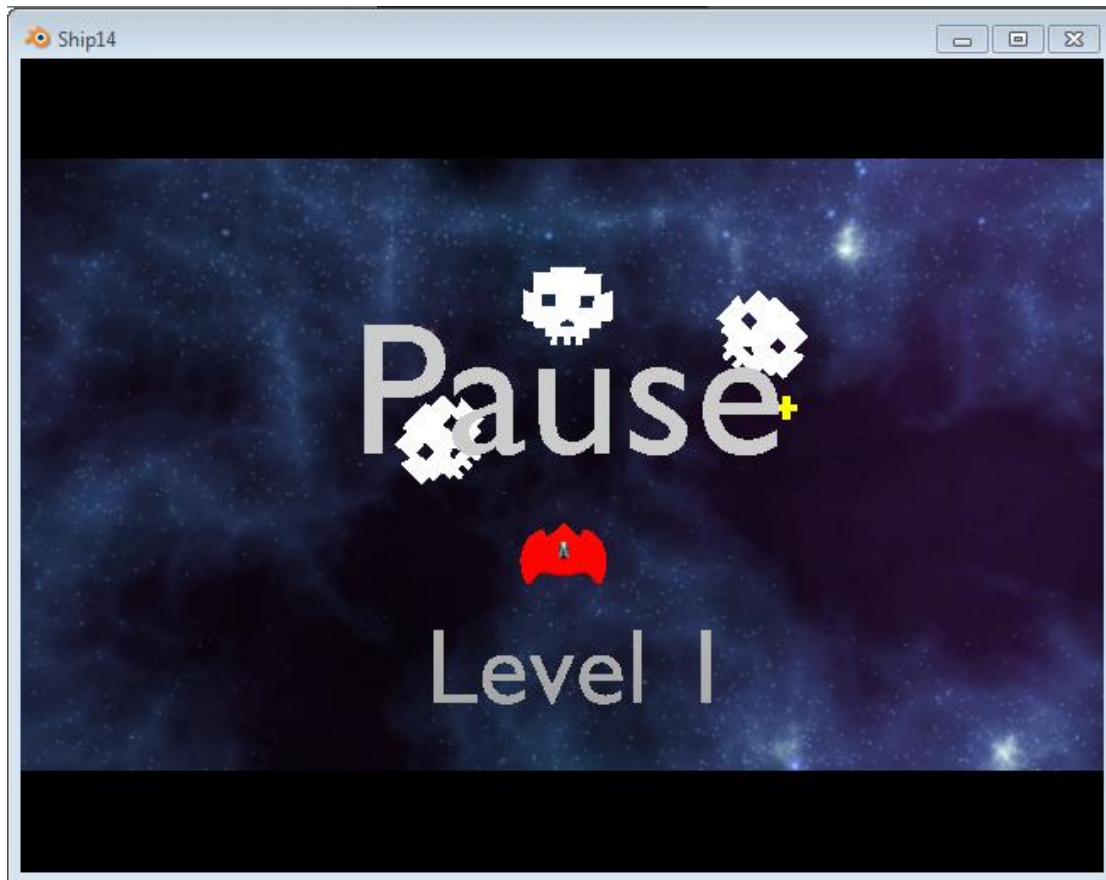
52) SELECT 'LEVEL 1' FROM THE SCENE DROPDOWN. SELECT THE CAMERA IN LEVEL 1.



53) ADD A KEYBOARD SENSOR. SELECT 'TAP' AND SET THE KEY TO 'P'.

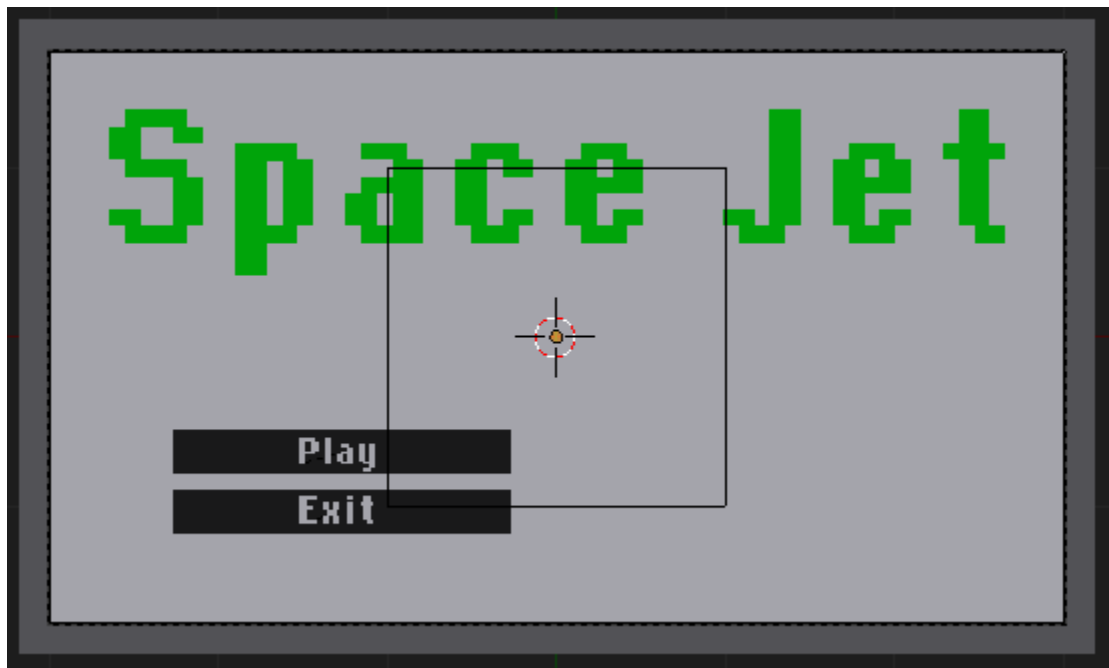


54) ADD TWO SCENE ACTUATORS. SET THE FIRST TO 'ADD OVERLAY SCENE' MODE, AND SELECT 'PAUSE'. SET THE SECOND SCENE ACTUATOR TO 'SUSPEND SCENE' AND SELECT 'LEVEL 1'. THEN, CONNECT YOUR LOGIC BRICKS AS SHOWN IN THE PICTURE.

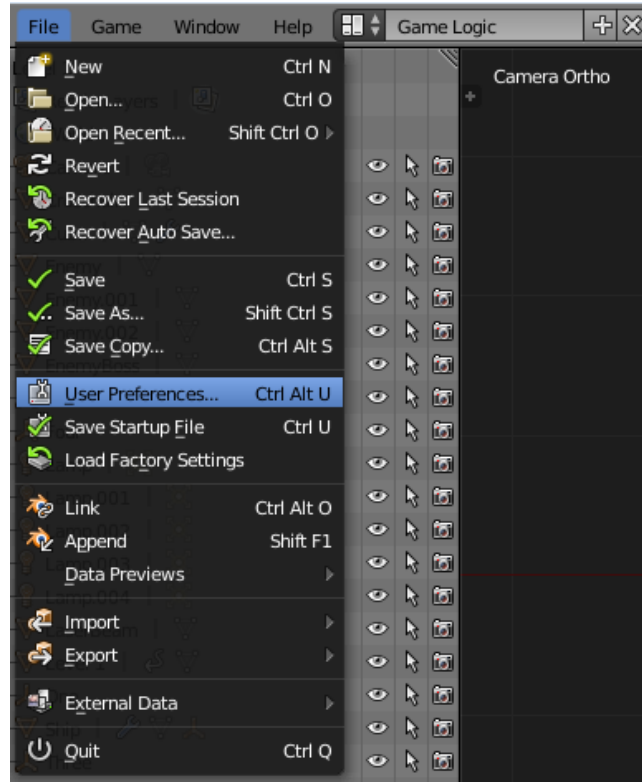


55) PLAY YOUR GAME ('P' OR 'START'). LEVEL 1 SHOULD PAUSE AND UNPAUSE WHEN 'P' IS PRESSED. THIS IS A SIMPLE PAUSE SCREEN; HOWEVER, IT WILL GET A BIT MORE COMPLEX WITH MULTIPLE LEVELS. BASICALLY, YOU'LL HAVE TO SET UP A NEW PAUSE SCENE FOR EACH LEVEL. THERE ARE OTHER WAYS TO MAKE BETTER PAUSE SCREENS, BUT THIS ONE WORKS FINE FOR THIS GAME. JUST REMEMBER TO SET UP A PAUSE SCENE FOR EACH LEVEL IN YOUR GAME.

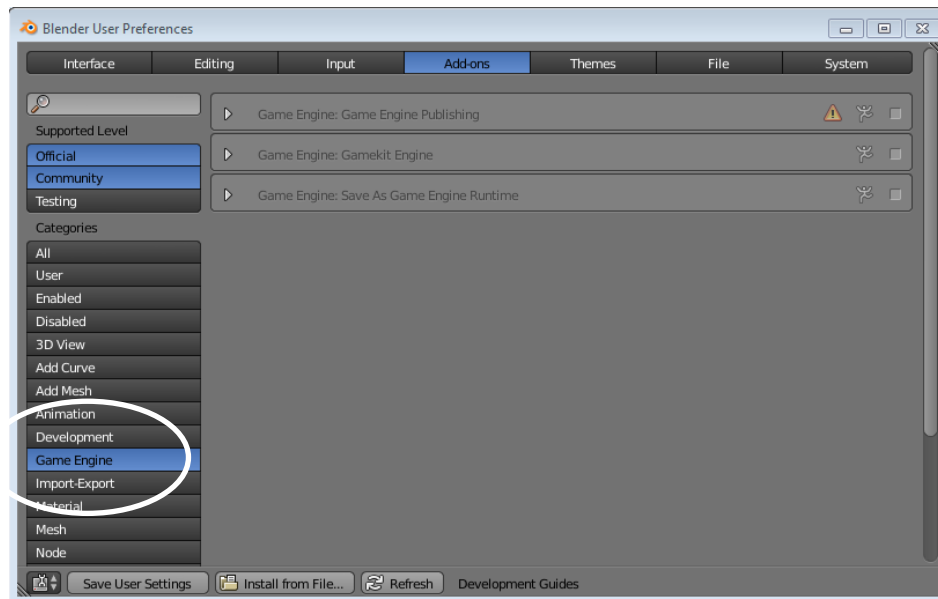
56) IF YOU HAVE FOLLOWED ALL OF THE PREVIOUS TUTORIALS CLOSELY, YOU SHOULD NOW HAVE A COMPLETED GAME. THE LAST STEP IS TO PACKAGE THE GAME FOR DISTRIBUTION. THIS MEANS THAT WE WILL BE TURNING YOUR GAME INTO A FILE THAT CAN BE READ BY OTHER COMPUTERS. YOU COULD EMAIL A COPY OF YOUR GAME TO A FAMILY MEMBER OR FRIEND, FOR EXAMPLE.



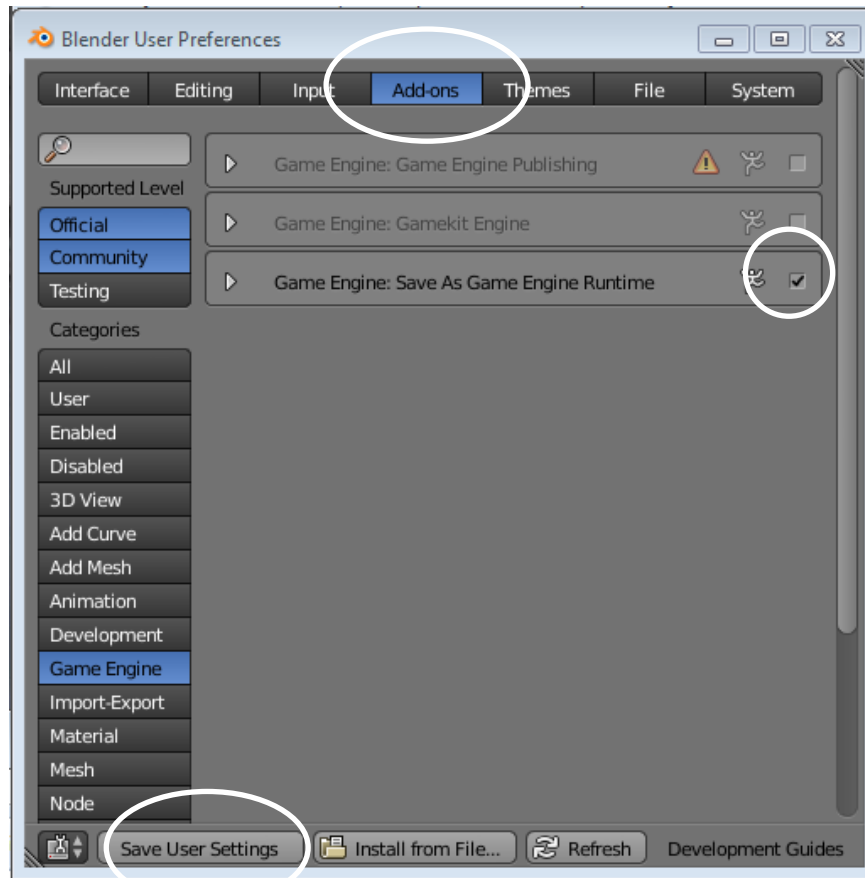
57) GO INTO YOUR GAME MENU SCENE.



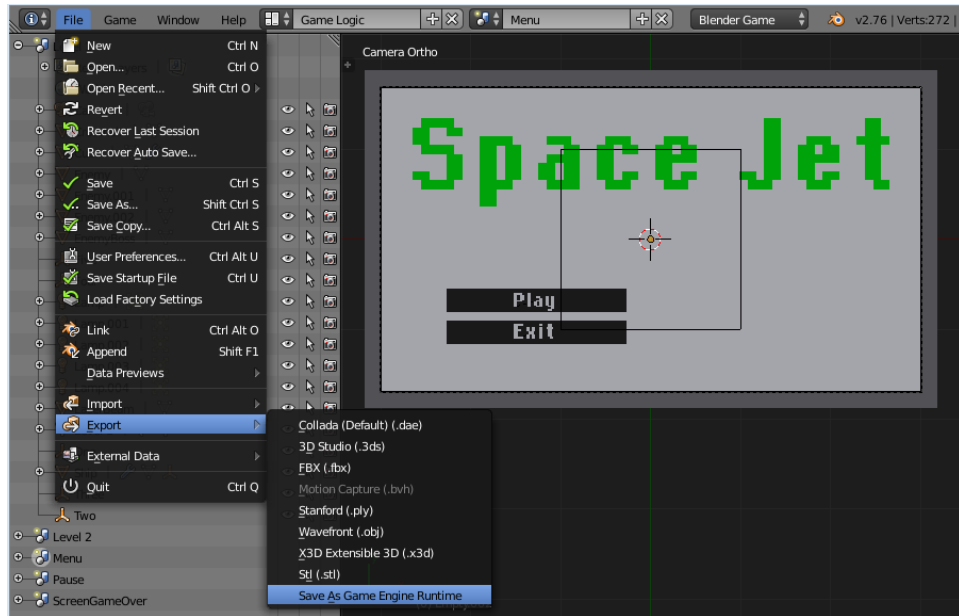
58) GO INTO FILE AND SELECT 'USER PREFERENCES'.



59) SELECT 'GAME ENGINE' FROM THE LEFT-HAND COLUMN.



60) MAKE SURE YOU ARE IN THE 'ADDONS' TAB. CHECK THE BOX TO THE RIGHT OF 'SAVE AS GAME ENGINE RUNTIME'. CLICK 'SAVE USER SETTINGS' AND THEN CLOSE THE USER PREFERENCES.

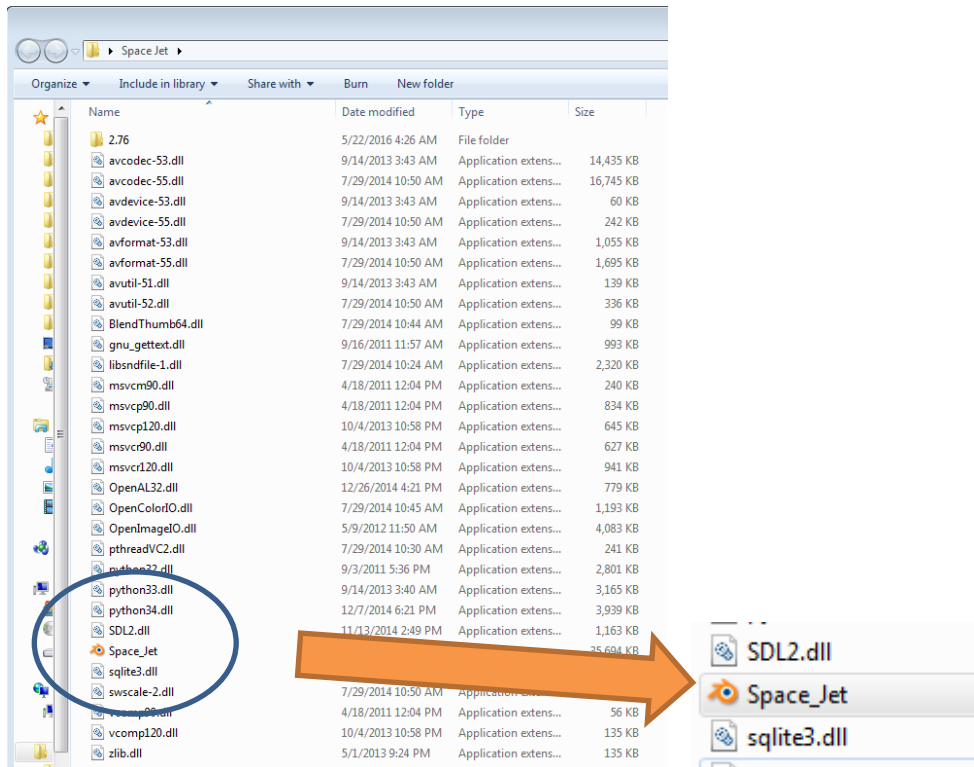


61) GO INTO FILE. SELECT 'EXPORT'. THEN SELECT 'SAVE AS GAME ENGINE RUNTIME'.



62) YOUR FILE DIRECTORY WILL OPEN. SELECT A LOCATION FOR YOUR GAME FILES. IN THIS EXAMPLE, I CREATED A FOLDER CALLED 'SPACE JET' AND PLACED IT ON MY DESKTOP. I ALSO NAMED MY GAME 'SPACE_JET.EXE'. TO PACKAGE THE GAME, CLICK 'SAVE AS GAME ENGINE RUNTIME'.

63) PACKAGING THE GAME COULD TAKE A WHILE. EVEN IF BLENDER LOOKS LIKE IT HAS FROZEN, IT MORE THAN LIKELY HASN'T. JUST WAIT UNTIL IT STOPS RENDERING.



64) YOUR FILE MIGHT LOOK DIFFERENT THAN THIS EXAMPLE. I AM USING BLENDER ON WINDOWS, SO IF I OPEN UP MY SPACE JET FOLDER I'LL SEE A BUNCH OF .DLL AND PYTHON FILES. THIS IS NORMAL. TO PLAY YOUR GAME, DOUBLE-CLICK ON THE BLENDER ICON WITH THE NAME OF YOUR GAME.



65) YOUR GAME SHOULD START AT THE MENU SCREEN. EVERYTHING SHOULD BE WORKING; GO THROUGH AND PLAY IT TO MAKE SURE.

66) YOUR OPERATING SYSTEM WILL DETERMINE THE OUTPUT OF YOUR FILE. MAC COMPUTERS PACKAGE THE FILE AS AN 'APP', SO THERE IS ONLY ONE ICON GENERATED. LINUX OPERATES SIMILARLY. SO IN ORDER TO MAKE YOUR GAME AVAILABLE TO ALL PLATFORMS, YOU'LL HAVE TO RENDER ONE OF EACH: WINDOWS, MAC, AND LINUX. FOR NOW, THOUGH, JUST WORRY ABOUT THE OS THAT YOU HAVE.

67) CONGRATULATIONS ON
COMPLETING THIS SERIES OF
TUTORIALS!!! PROGRAMMING CAN
BECOME FUN ONCE YOU HAVE
LEARNED THE BASICS, WHICH IS
WHAT I WAS AIMING TO TEACH YOU
THROUGH THIS COURSE. AS WITH
EVERYTHING IN LIFE, IF YOU WANT
TO BECOME GOOD AT PROGRAMMING,
YOU NEED TO KEEP PRACTICING
AND KEEP RESEARCHING. IN THIS
DAY AND AGE, IT'S NEVER BEEN
EASIER TO CREATE A VIDEO GAME
FOR FREE. IF YOU CAN FIND A
CHEAP COMPUTER, YOU CAN
INSTALL LINUX, BLENDER,
INKSCAPE, GIMP AND TONS OF
OTHER OPENWARE FOR FREE. ONCE
AGAIN, CONGRATULATIONS ON YOUR
GAME!!!

[illegible]