



PRAGATI ENGINEERING COLLEGE

(AUTONOMOUS)

DEPARTMENT OF INFORMATION TECHNOLOGY

PEC/CIRCULAR/2023

Date: 23-09-2023

CIRCULAR

It is hereby informed to all the students that “**GAMING CLUB**” of “Department of Information Technology” is conducting an offline meeting on “**Game design Workshop-1**” On 29-09-2023. Interested students are informed to register their names and participate in the workshop.

Faculty Coordinator:

HOD - IT

D. Konda Babu
Ganga Bavani
Assist. Professor (Department of IT)

T.

Student Coordinators:

N. Dana Ganesh (21A31A1254)
P. Sahitya (21A31A1223)



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GAMING CLUB

DATE: 29-10-2023

MODE: OFFLINE

TIME: 10.30 a.m. TO 12.00 p.m.

Here is the official poster of our workshop:



FACULTY CO-ORDINATOR:

D. Konda Babu (Asst. professor, IT Department)

STUDENT CO-ORDINATORS:

Navya (3rd Year ECE)

Manahor (3rd Year AIML)

U. Bheemeswar (3rd Year IT)

K.V.V. Sai Karthik (3rd year AIML)



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REGISTRATIONS:

Students Registered for workshop on “Game design Workshop-1”.

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ATTENDENCE:

Students Attended for workshop on “Game design Workshop-1” are as follows;

Name	Branch	Roll Number	Year	section
Ramya	Aiml	21a31a4220	III	A
Anirudh Hruthen Parasa	Ai	21A31A4356	III	A
s.karthikeya venkata Sai Reddy	Ece	21A31A04Q0	III	D
Kunche Veera venkata Sai karthik	Aiml	21A31A4243	III	A
OLETI.VIJAYKUMAR	Ece	22A31A0454	II	A
Ch.Hemanth babu	Ece	22A31A0433	II	A
ksk_aditya	Ece	22A31A04U1	II	E
Alekhya	Ece	21a31a0483	III	B
B Ashwitha	Ece	21A31A0468	III	B
Dongara Abhiram	Ece	22A31A0435	II	A
Mummareddy Sri harshitha Siva kalyani	Ece	22A31A04E4	II	C
K.Anitha	Cse	22A35A0516	III	C
Sabitha Pilla	Ece	22A31A0414	II	A
Sai Ramya Harshitha Bhemala	It	21A31A1227	III	A
Saniya Anjum	Ece	22A31A04F0	II	C
Mohana Surekha Kolla	Ece	21A31A04E8	III	C
D Haasini	Ece	22A31A04J8	II	D
Ch.Tirumala teja	Ece	22A31A04G3	II	C
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Ch Deepthi sri	Ece	22A31A04J7	II	D
Bangaru Mahendra raj	Cse	22A31A05A0	II	B
Gorrela veera venkata sowjanya devi	Ece	22A31A04Q8	II	E
B.Durga jahnvi	Ece	22A31A04Q5	II	E
RAMNATH	Ece	22A21A0431	II	A
V sri vishnu priya	Ece	22A31A04P8	II	E
G Neeraj Surya	Ece	22A31A0438	II	A
Praneeth	Ece	22A31A04I6	II	C
Tanuku lakshman kumar	Ece	22A31A04I8	II	C
ALLADA SRIHARISH	Ece	22A31A0428	II	A
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R. Jayanth	Ece	22A31A0459	II	A
Teja Kumar	Ece	22A31A04J1	II	C
M.siva teja	Ece	22A31A04H3	II	C
Kottedda manideep	Ece	22A31A04H2	II	C
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Kanithi.Vinay	Ece	22A31A04H1	II	C
P.vinay	Ds	22A31A44A6	II	B
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Shaik Zuheruddin	It	21A31A1259	III	A
G.jahna Sindhu	Ece	22a31a04k1	II	D
A.reshma	Ai	22A31A43B7	II	C
Sucharitha	Ece	22A31A04K8	II	D
A.HARI PRIYA	Ece	22A31A04J3	II	D
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Bodasingi Lahari	It	21A31A1232	III	A
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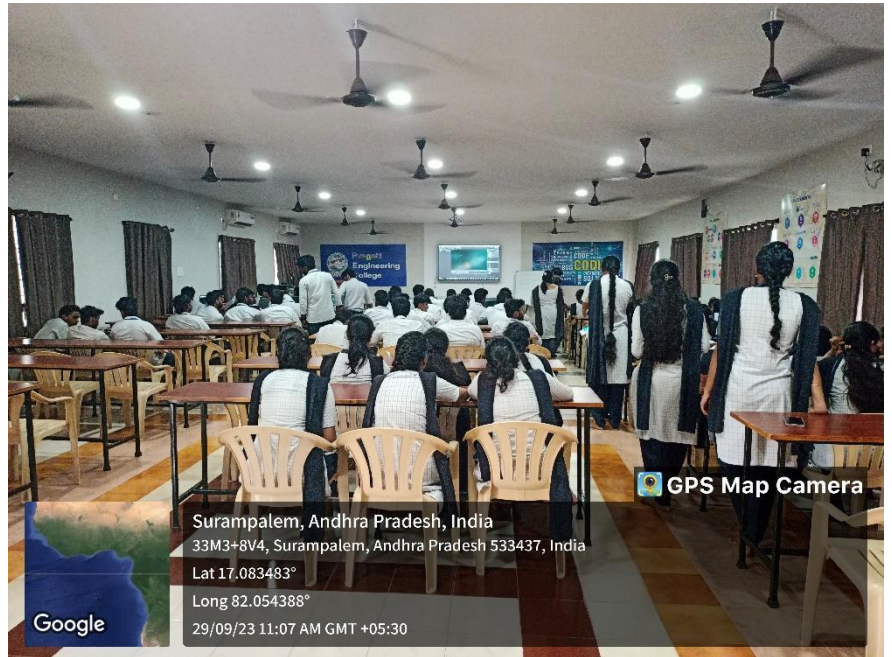
Surampalem, Andhra Pradesh, India
33M3+8V4, Surampalem, Andhra Pradesh 533437, India
Lat 17.083483°
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REPORT:

On 29-09-2023, The “**Gaming Club**” of Department of Information Technology have Organized a workshop on “**Game Workshop-1**”.

This workshop makes you some more knowledge and practice on the game designing. This will help you to get a useful and knowledge about **Game developing**.

The Resource Persons of this Event are:

1. K. Phaneendra Saketh (3rd Year CSE-DS)
2. U. Bheemeswar (3rd Year IT)

Faculty Coordinator;

1. D. Konda Babu (Assistant Professor- Department of IT)

Students from all the branches have attended the session and joined into the Gaming Club and want to be part of Gaming Club Community. Number of Registrations: **104**

Number of Attendees: **63**

Number of Telegram Group Members: **220**

Number of WhatsApp Group Members: **355**

Number of Instagram page Members: **48**

At last, the workshop completed Successfully by giving an introduction and developing game informative session to students about Game designing.



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THEME OF THE WORKSHOP:

We conduct a workshop based on “**GAME DESIGNING**”. To give the awareness about how game will be designed, created, game career and guidance. Its advices to students who goes to gaming filed as developer. In this workshop we a game developing software [Game Maker] which helps designing the game. And it has the easy interface to design.

Software:

Game Maker is a tool designed to empower you and your team to make new and innovative games as well as prototype ideas in the fastest and most intuitive way possible across multiple target platforms. It is intended primarily as a tool for making 2D games - although 3D games are perfectly doable - and comes with a number of tools and editors to help you realize your dreams and ideas, with your final project being ported across multiple platforms from the same initial base resources.

For those that are new to the world of programming or who have never used any game creation tool before, Gamemaker offers an intuitive and easy to use **GML Visual** interface of actions that allow you to start creating your own games very quickly using visual scripting. If you are a more experienced - or less visual - programmer, then you can use the proprietary scripting language **GML** to create your games. Gamemaker comes with a number of powerful tools, like a complete **Image Editor** for creating your own *sprites* and the ability to use *tile sets* and you can also import images that you have made in any external editor, including Spine skeleton animations and SWF format vector files. Once you have your images it's simply a question of assigning them to objects in the **Object Editor**, adding some code or GML Visual actions, and then placing instances of these objects into a game room in the **Room Editor**. There are also additional tools for creating **Paths**, **Sequences**, **Shaders** and a whole lot more. You'll find the IDE is also incredibly flexible, and it can be customized to your needs, should the default IDE setup not cover something you require, using the different PREFERENCES.

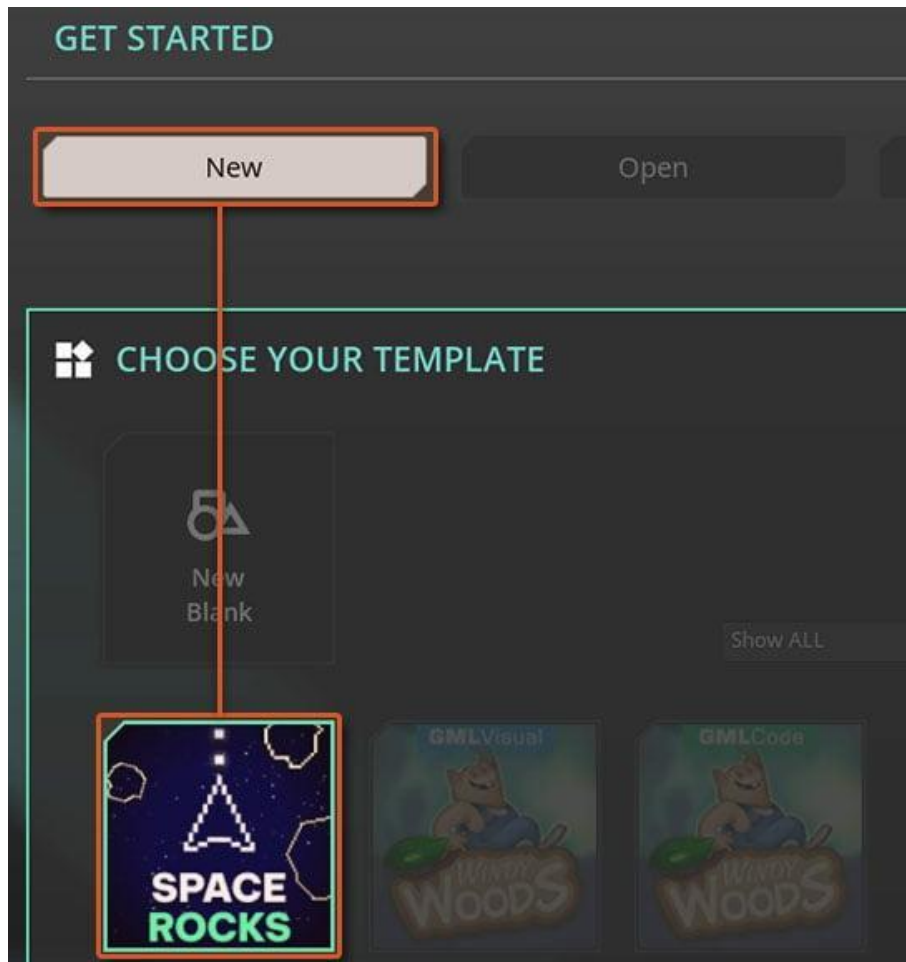
Steps to install and run the software:

- Visit the official Gamemaker Studio 2 website ([HTTPS://WWW.YOYOGAMES.COM/GAMEMAKER](https://www.yoyogames.com/gamemaker)) and go to the "Get Gamemaker" or "Download" section.
- Click on the "Download for Windows" button or link to start downloading the installer.
- Once the download is complete, locate the installer file (usually a .exe file) and double-click on it to run the installer.
- Follow the on-screen instructions to install Gamemaker Studio 2. You may be asked to choose installation options and specify a destination folder for the installation.
- After the installation is complete, you should be able to launch Gamemaker Studio 2 from your Start menu or desktop shortcut.



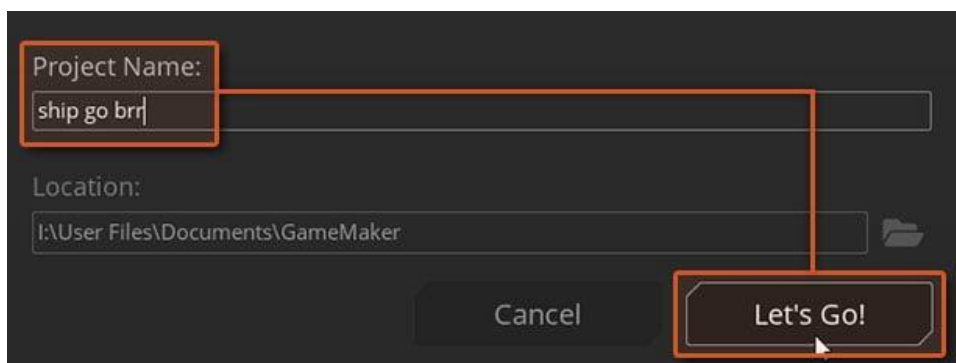
HOW TO CREATE A NEW PROJECT

Open GameMaker. You'll see a "New" button – click on it.



Here you can start with a blank project, or choose a template.

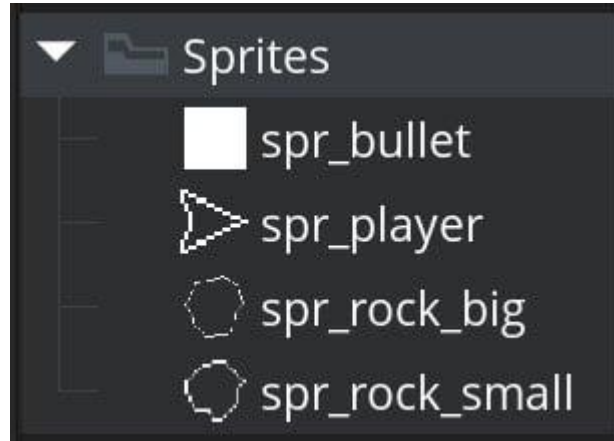
For this game, let's use the "Space Rocks" template. This gives you all the images for this tutorial.





Enter a "Project Name", and hit "Let's Go!".

You're now in your project!



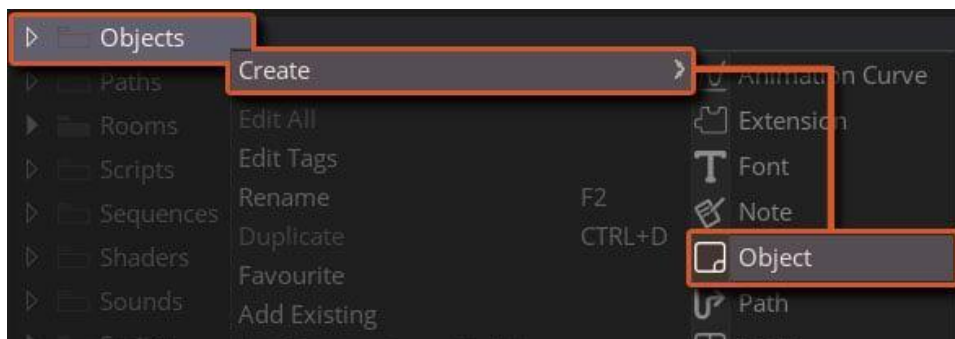
The Asset Browser on the right contains all your assets. You'll now see four Sprites, which are images you can use in your game.

There's "spr_player", the ship you'll fly, "spr_bullet", which you'll fire from your ship, and two rocks, which you'll destroy.

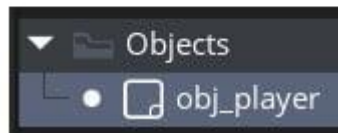
HOW TO USE THE ASSET BROWSER

In the same Asset Browser, we want to create some objects. An object is how you bring an image to life, by programming it to move, shoot, or do anything you need it to.

Your ship, rocks, and even the bullets you fire are created as objects. We'll put these in the "Objects" group in the Asset Browser, which is currently empty.



Create a new Object

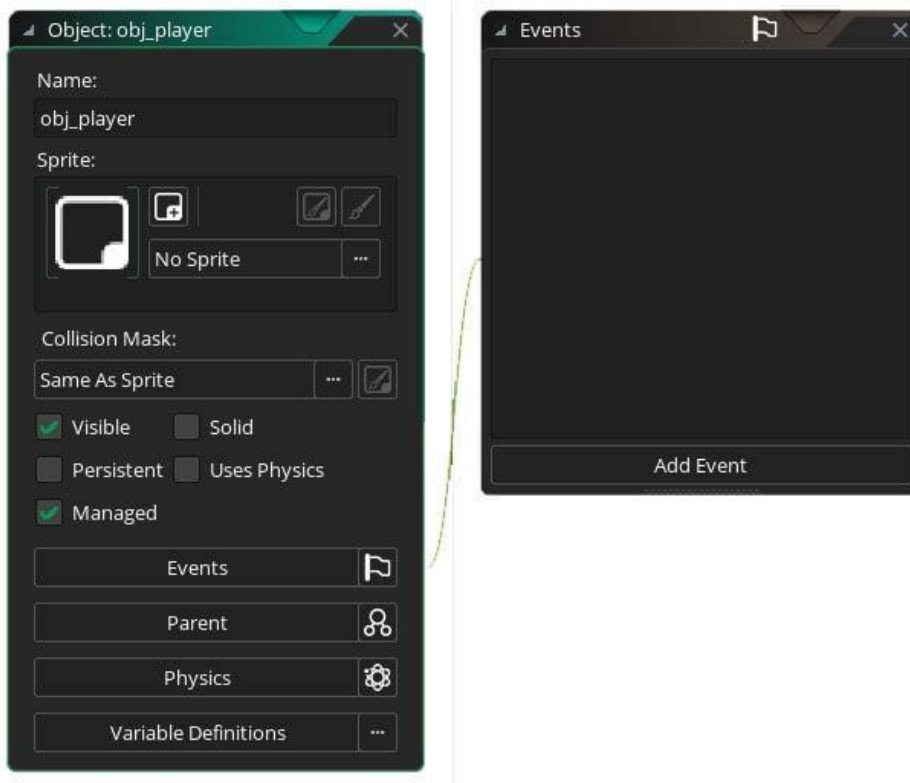


Rename it to obj_player

Right-click on the “Objects” group, and select “Create -> Object”. Change its name from “Object1” to “obj_player”.

Press **F2** to rename your selected object, or right-click on it and select “Rename”.

HOW TO EDIT AN OBJECT



Your new object has an editor. Here you change its properties, and program it, which we'll do very soon.

Every object needs a sprite – otherwise how would you see it?

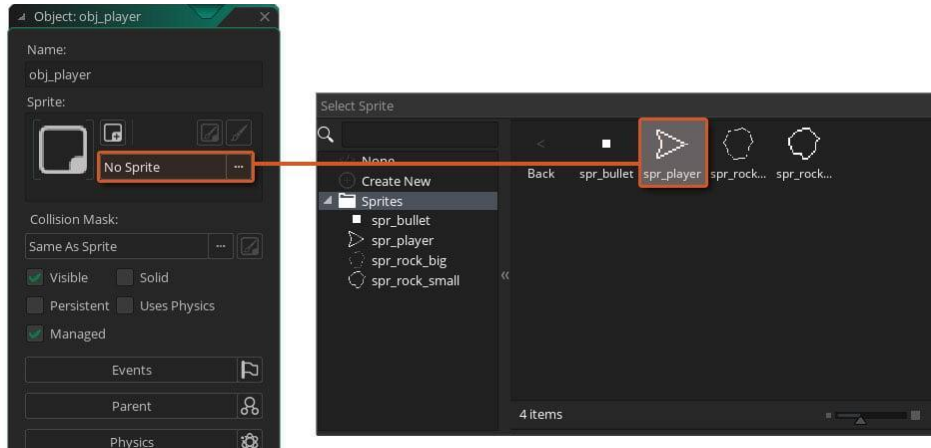


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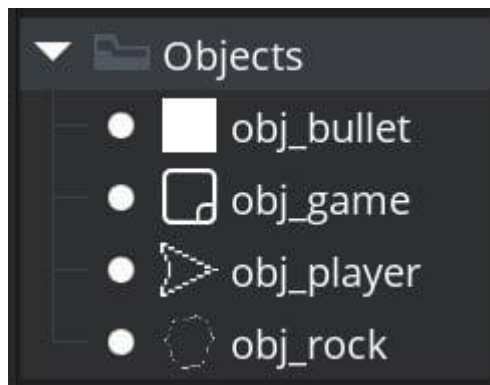
DEPARTMENT OF INFORMATION TECHNOLOGY

Click where it says “No Sprite”, and from under the “Sprites” group, select **spr_player**.



We need some more objects now. Just like you created **obj_player**, create three more objects:

1. **obj_bullet**: This is the bullet your ship fires.
Set the sprite to **spr_bullet**.
2. **obj_rock**: This is the rock you'll destroy.
Set the sprite to **spr_rock_big**, as every rock will start big, and shrink as you shoot it.
3. **obj_game**: This is a “silent” object that will manage your game.
It doesn't need a sprite.



These are all the objects you need! Let's now place these inside a level.

HOW TO MAKE A LEVEL IN GAMEMAKER

Each “level” in GameMaker is a **room asset**. Look in the Asset Browser – there's one already there for you:

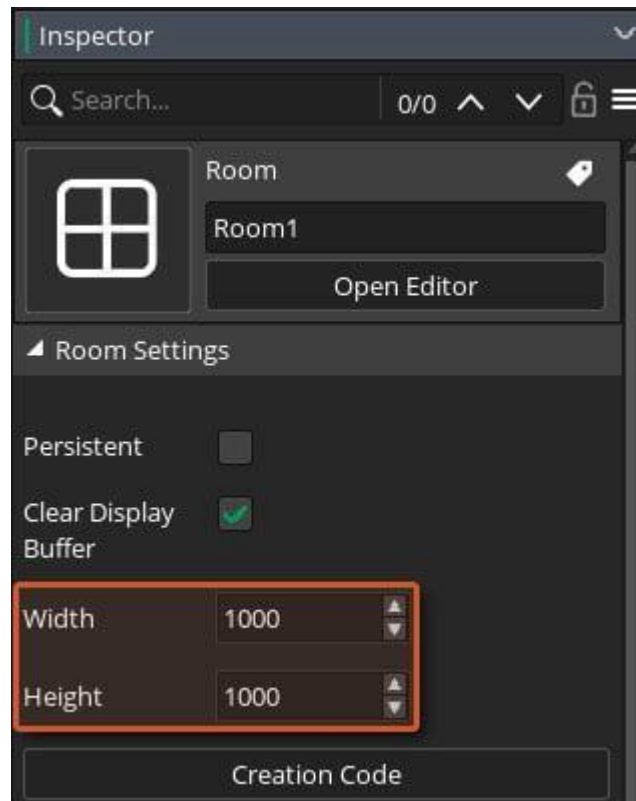


Double-click on it. The “Room Editor” will open, where you’ll build your level.

Before doing anything, I want to resize the room to make it a 1000x1000 square.

HOW TO RESIZE A ROOM IN GEMEMAKER

Look at the lower-left corner of the window - you'll see an "Inspector" window.

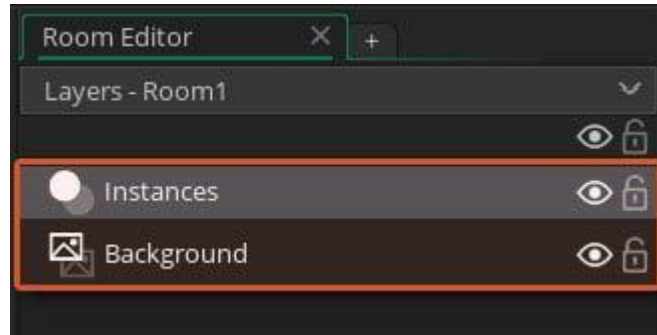


Here, set the **Width** and **Height** of the room to 1000. You can use a different size.

If you don't see these options, go into your Asset Browser and click on **Room1**. They should be visible while the room is selected.



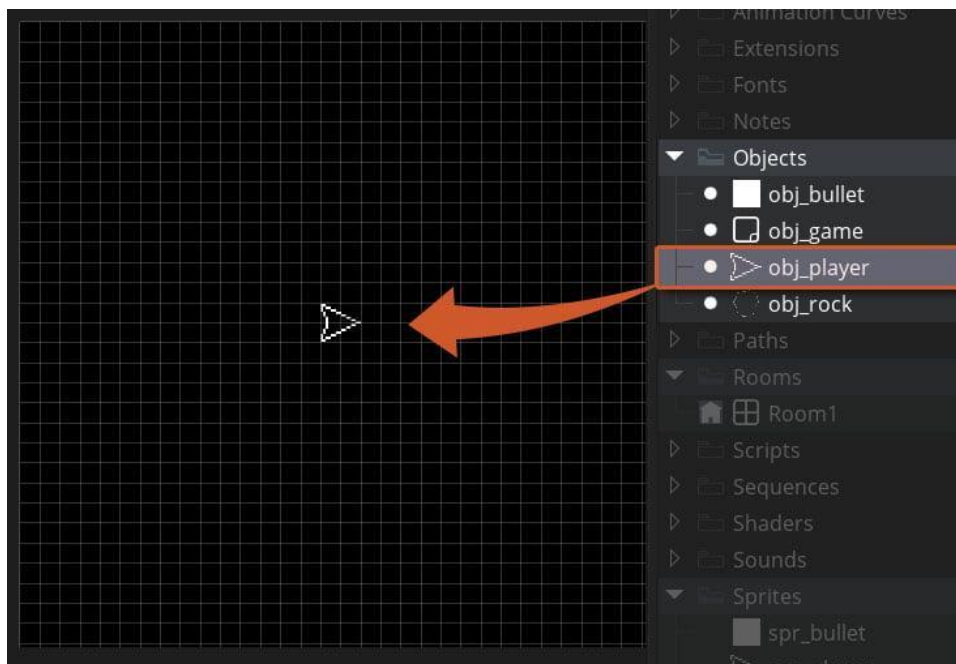
HOW TO PLACE OBJECTS IN A ROOM



Look at the left panel in the Room Editor: there are two layers created by default, “**Instances**” and “**Background**”.

4. **Instances**: This is an instance layer. Your objects go here, just like cereal goes into a bowl.

5. **Background**: This is a background layer. Change the background colour or apply an image. Click on the “Instances” layer to select it – this is where your objects will go:



From the Asset Browser, drag **obj_player** and place it in the room.

Your player ship is in the room now, as an “instance” – you can place multiple “instances” of any object in the room!

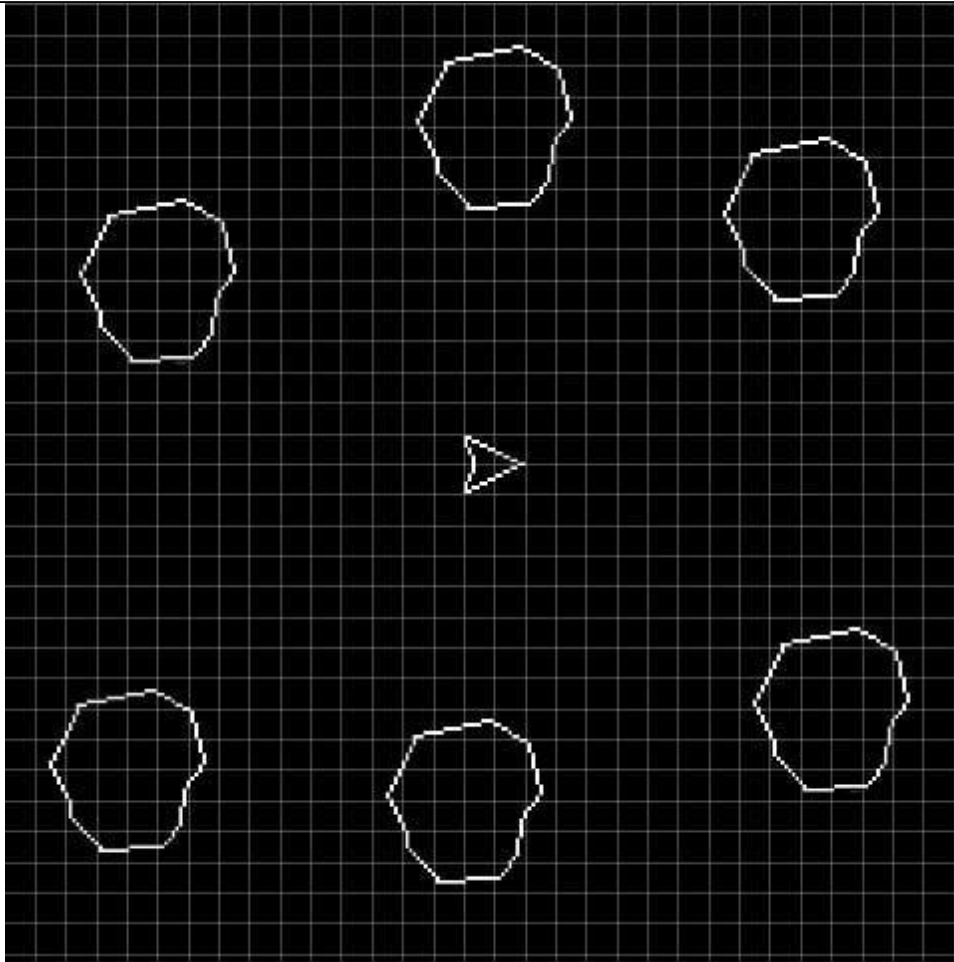
Do this with the rocks – drag **obj_rock** into the room multiple times, until you have around six instances:



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The stage is set for the play. We just need to teach the actors their roles.

HOW TO MOVE THE SHIP



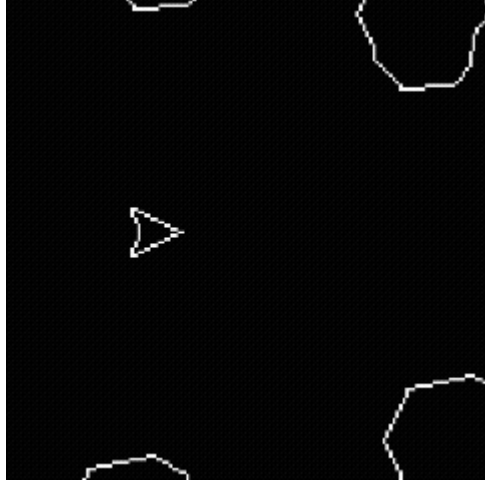
If you run the game right now (press F5 or the “Play” button at the top) your game will open, but it’ll be as still as a frozen lake at night.

Your objects are there, your room is there, but nothing is programmed to move or do anything.

Let’s work on that.



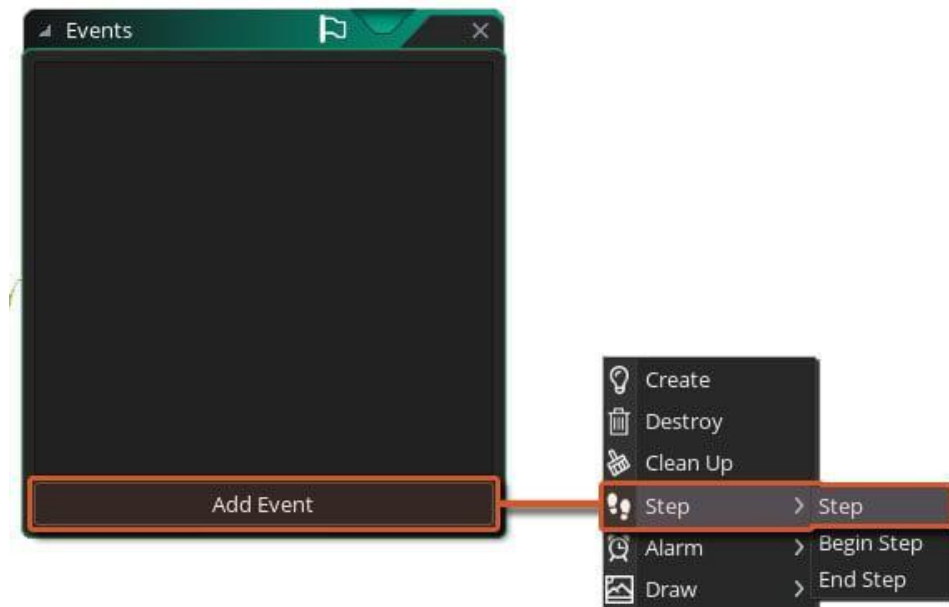
HOW TO USE EVENTS IN GEMMAKER



On pressing the “up arrow” key, we want to push the player ship forward.

In your Asset Browser, double-click on **obj_player**.

Look at its Object Editor – specifically the “Events” window.

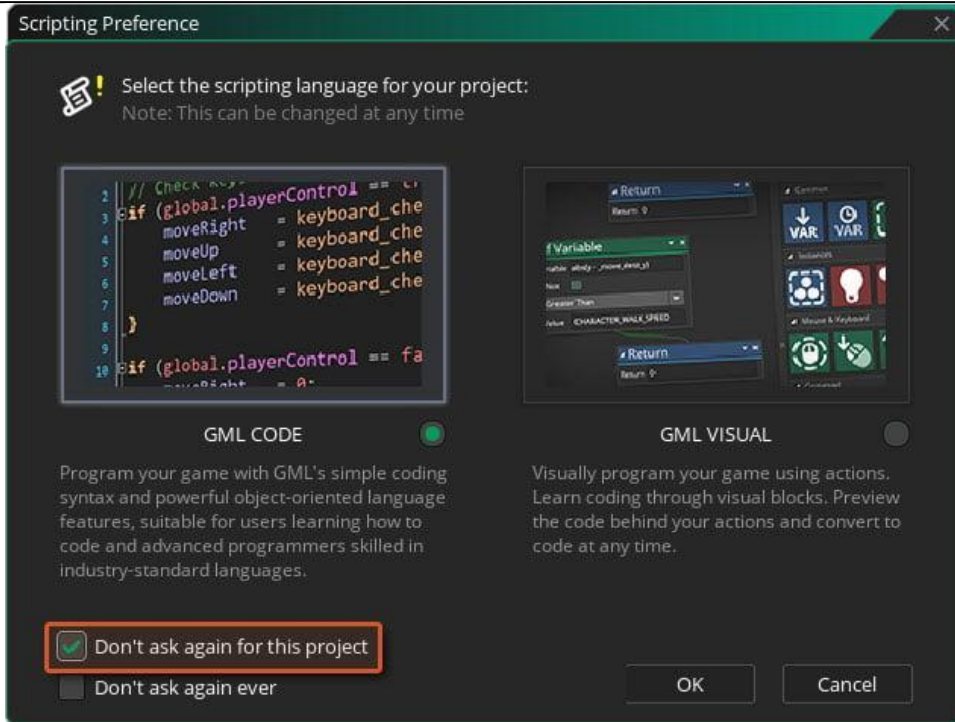


Click on “Add Event”, and select “Step”.

You might be asked to choose between **GML Code** and **GML Visual**.

Choose **GML Code** if you've done programming before, or **GML Visual** if you're new.

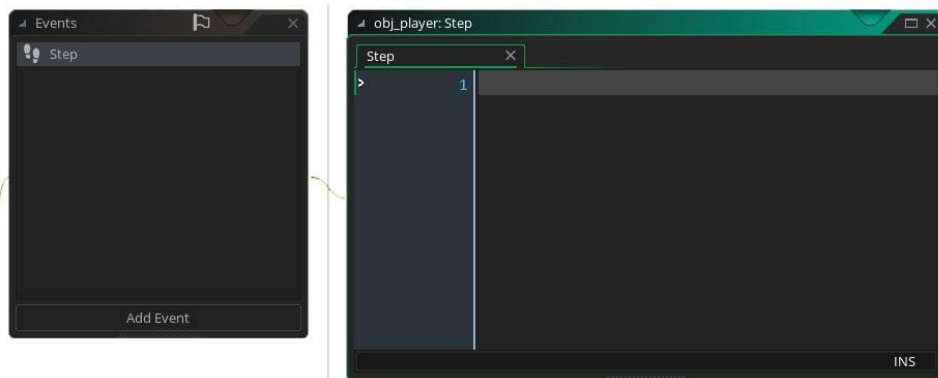
This tutorial will cover both options, so you can choose whichever option you prefer.



Make your choice, and enable “Don’t ask again for this project.”

WHAT IS THE STEP EVENT?

After making your choice above, you'll see the window for the Step event open up.



GML Code window for the Step event

An object has many events. Each event has its own unique time when it runs.

For example, you brush your teeth in the morning. Then you breathe pretty much all day, every second.



```
obj_person: Create
Create
1 brush_teeth();

obj_person: Step
Step
1 breathe();
```

If you were a GameMaker object, you would brush your teeth in the "Create" event, and breathe in the "Step" event.

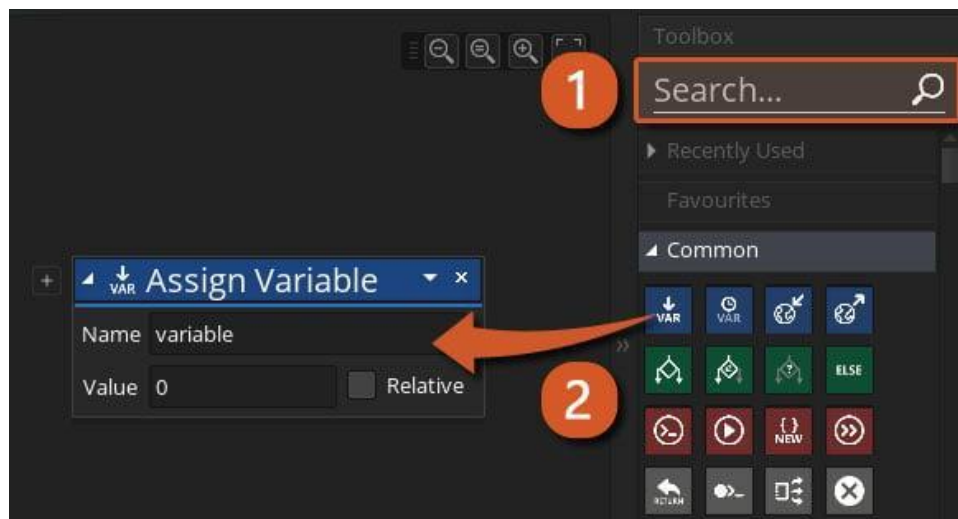
That's because the "Create" event is the first event to run for an instance, and it only runs once. The "Step" event then runs all the time in every single frame while the instance exists.

We're going to program this "Step" event to move the ship, as it's a continuous thing that must happen, akin to breathing.

HOW TO PROGRAM AN EVENT

Soon I'll show you some things to add into the "Step" event. The way you add them differs in GML Code and GML Visual.

If you're using GML Visual, search for the relevant actions in the Toolbox, and drag them into the event area:



Search for an action, and drag it into the Event Area.



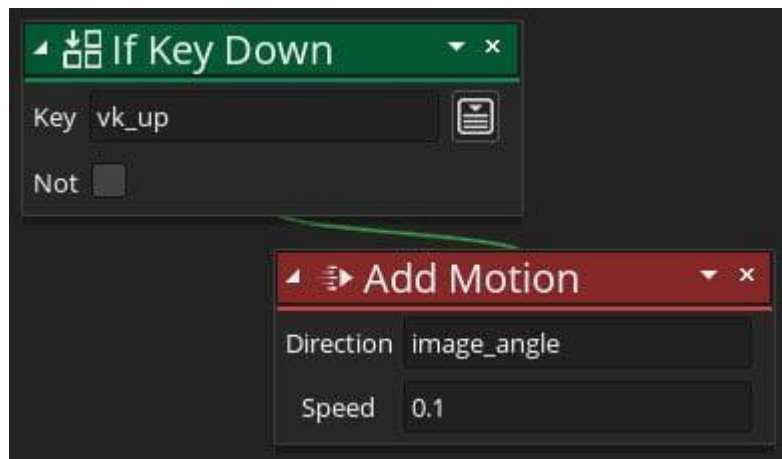
If you're using GML Code, simply write your code into the event window.

HOW TO ADD MOTION

we need to move the ship.

In your Step event, add the following code/actions:

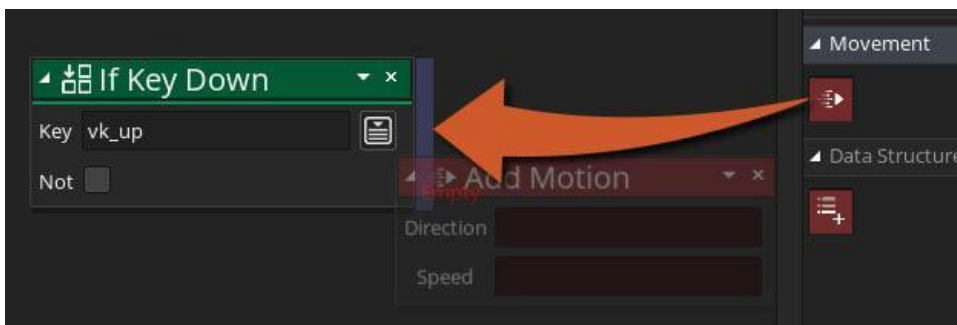
```
if keyboard_check vk_up  
{  
    motion_add=image_angle 0.1;  
}
```



Here we're checking if the up-arrow key is held down.

If you're holding the up-arrow key, this adds motion to the instance, so it moves in a particular direction.

In GML Visual, the second action is "attached" to the first action. The second action will only run **if the first action's condition is true**.



To attach "Add Motion" to "If Key Down", drop it on the right edge of the conditional action, as shown above.

You can only attach actions to green "conditional" actions.



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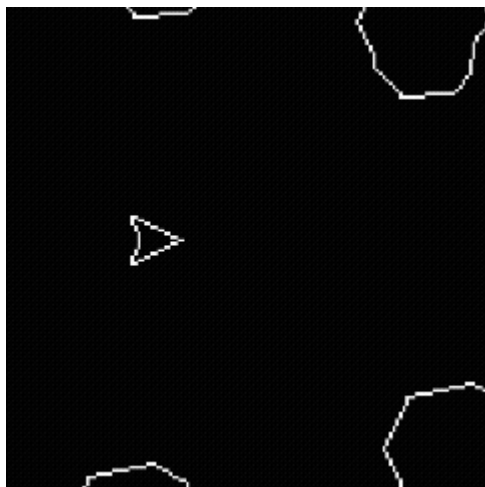
So – we’re adding motion in a direction. What direction is that?

That direction is the “**image_angle**” of the instance, which is where the ship is facing.

The amount of motion we’re adding is 0.1. You can change this to make your ship faster or slower.

OKAY WHAT NOW?

Run the game (press F5, or hit the Play button at the top) and in the game, press the up-arrow key.



The ship is alive! It moves to the right, as that’s the default angle of an instance.

It’s not turning though...

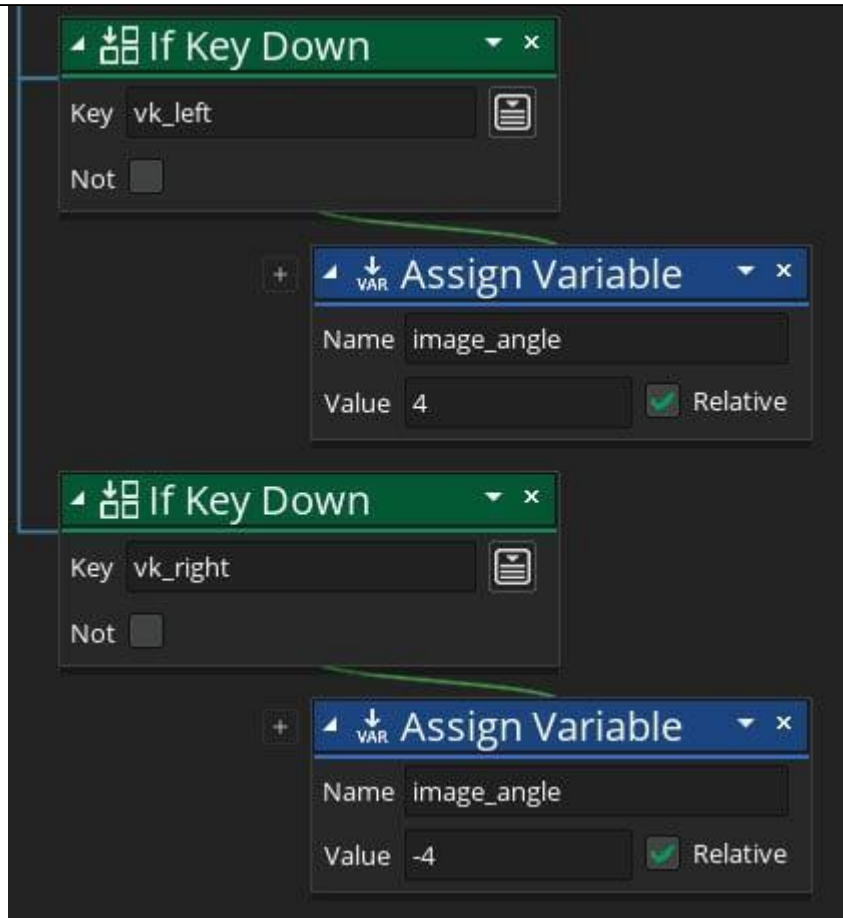
HOW TO ROTATE AN INSTANCE

To move the ship, we’re adding motion towards the “**image_angle**”. This **variable** stores the angle of the instance’s rotation.

To rotate the instance, you simply need to change this variable.

In the same “Step” event, add this:

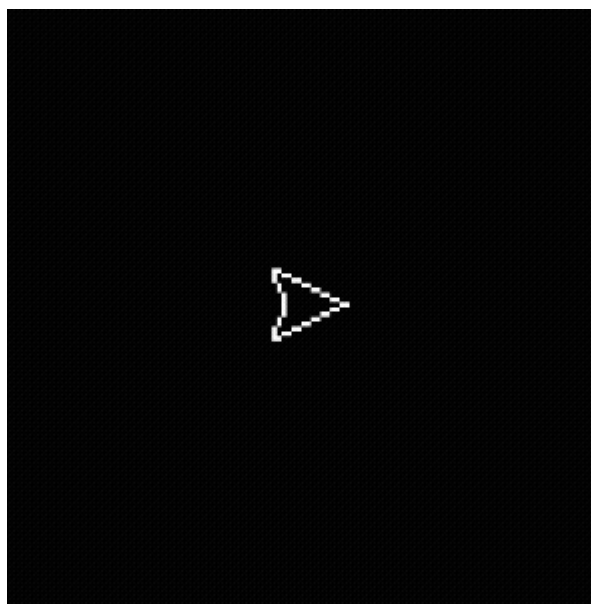
```
if keyboard_check vk_left
{
    image_angle += 4
}
if keyboard_check vk_right
{
    image_angle -= 4
}
```

The logic here is simple:

- 6. If the left arrow key is held, subtract 4 from image_angle
- 7. If the right arrow key is held, add 4 to image_angle

Run the game, and you can now move and turn!





This is great, but there is a small problem.

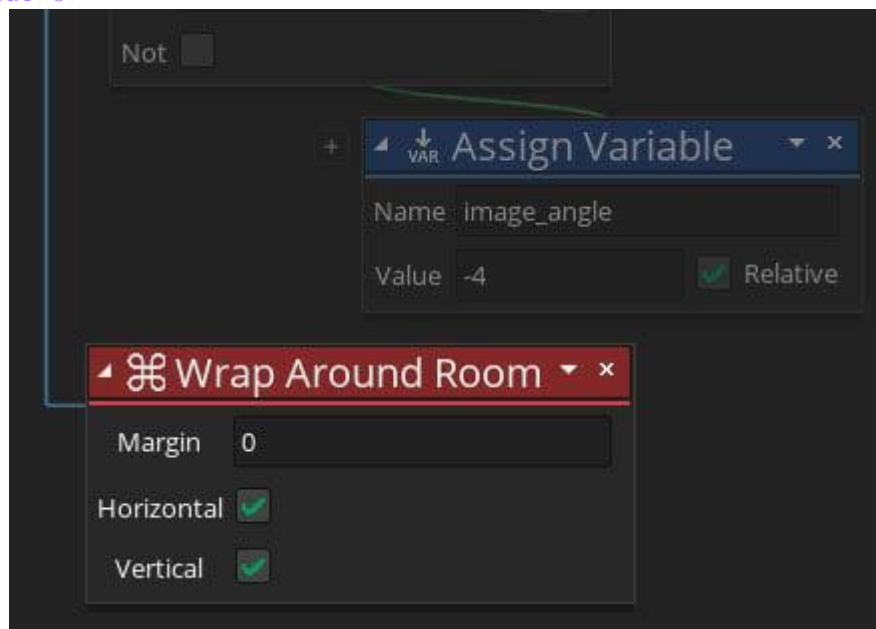
If your ship goes out of the room, it's lost forever.

To solve this, we'll make the ship "wrap" around the room: if it leaves through the top, it comes back through the bottom.

HOW TO WRAP AN INSTANCE IN GEMEMAKER

In the same "Step" event, add this:

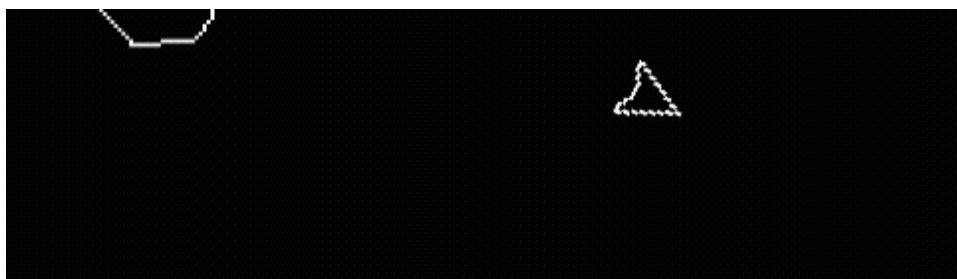
`move_wrap=true true 0`



Make sure to add it outside of any conditions.

This tells the ship to wrap around the room when it's outside. Both horizontal and vertical wrapping are enabled, and the wrap margin is set to 0.

The wrap margin controls how far outside the room the instance has to go before it wraps. We're not using it for now, but it will come in handy later.





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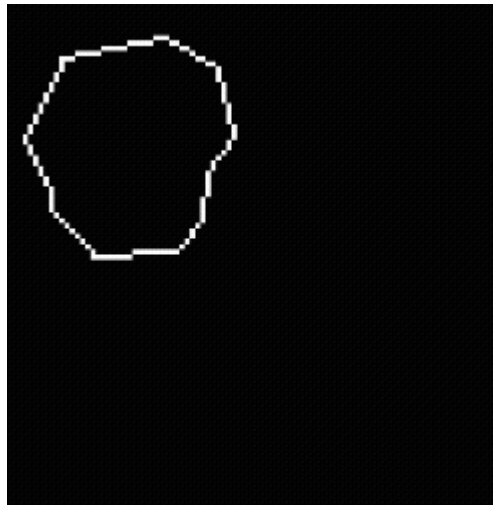
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and the ship movement is done! You can now move, turn and wrap around the room.

[~~1 Ship Movement~~ □ / 2 Destroying Rocks / 3 Finish Your Game]

HOW TO SHOOT IN GEMMAKER

Earlier we created an object called **obj_bullet**. To shoot, we'll create a new instance of this object at the ship's location.



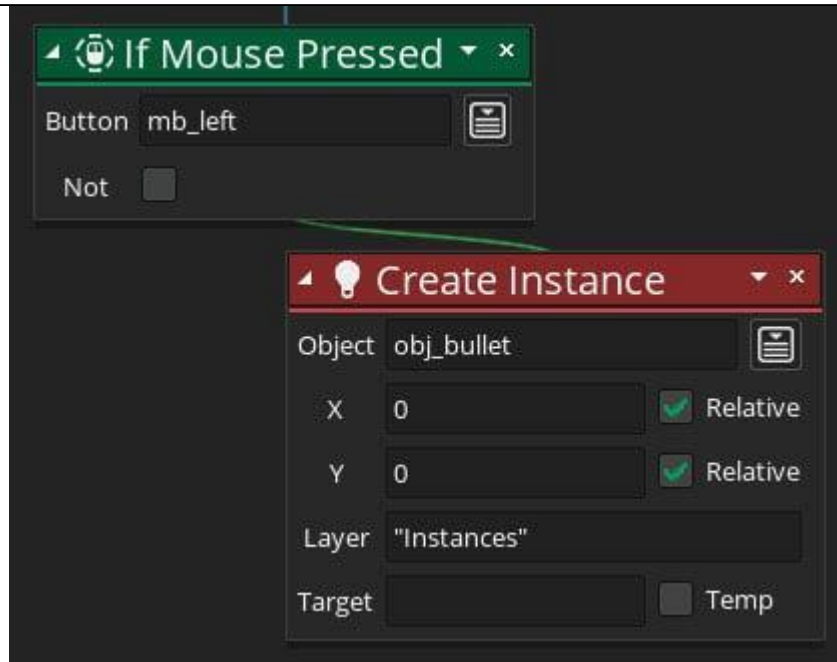
The bullet will move at a fast pace, in the same direction as the ship itself.

When the bullet is outside the room, we'll destroy it. This prevents a memory leak that would happen if all the bullets you shot continued to exist forever.

HOW TO CREATE AN INSTANCE

In the Step event of **obj_player**, add this:

```
if mouse_check_button_pressed mb_left  
{  
    instance_create_layer=x y "Instances" obj_bullet  
}
```

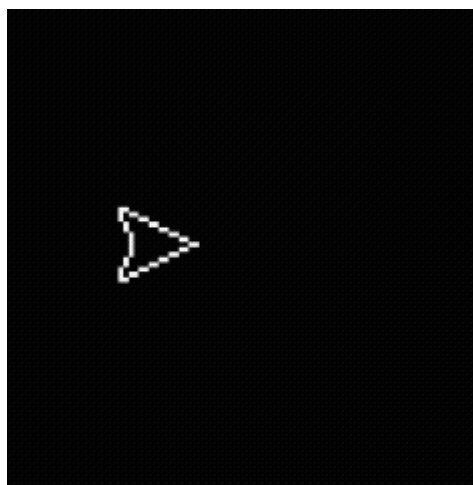


This checks if the left mouse button is “pressed”. This is different from checking if it’s “held down”, as this only checks if you’ve just hit the button.

If you hit the left mouse button, it creates an instance of **obj_bullet**. Apart from the object to create, it takes three other parameters:

- 8. **x**: The x (horizontal) position where the instance will be created
- 9. **y**: The y (vertical) position where the instance will be created
- 10. **layer**: The room layer where the instance will be created

For the x and y, we’re passing in the **x** and **y** variables of the player, so the bullet is created at the same position. We’re setting the layer to “**Instances**”.

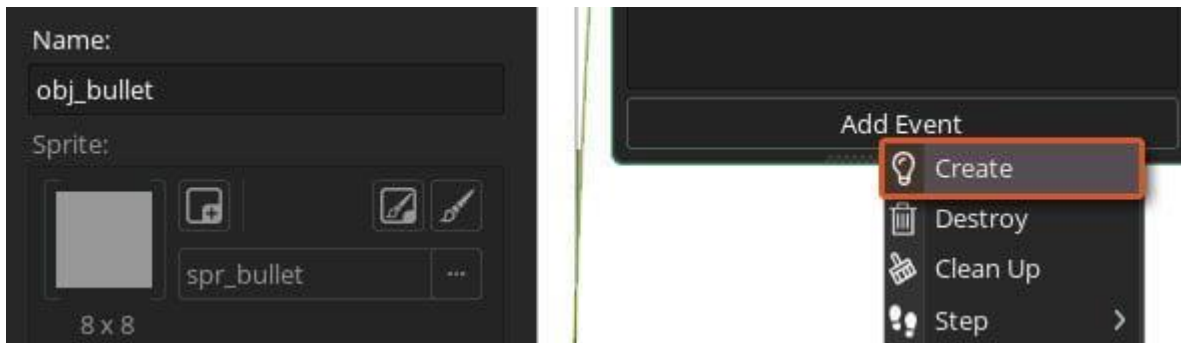


You can now shoot! Thing is... the bullets don’t move at all.



HOW TO MOVE AN INSTANCE CONSTANTLY

For the bullet, we'll set its speed once it's created. After that, it will continue to move forever until it's outside the room.

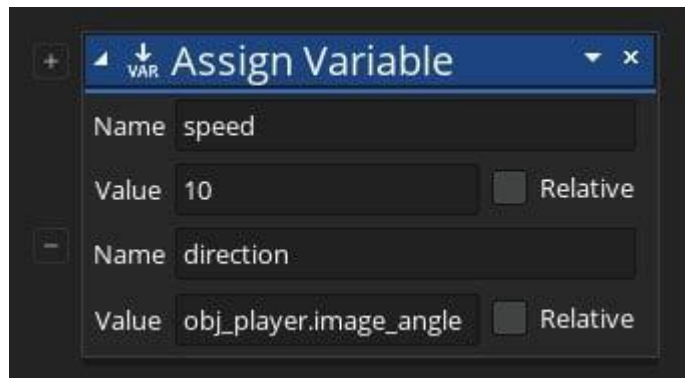


Double-click on **obj_bullet**. In the Events window, add the “Create” event.

This event is the first to run in an instance, and only runs once. That's why it's called “Create” because it runs as soon as the instance is created.

In this event, add this:

```
speed = 10  
direction = obj_player.image_angle
```



We're telling the bullet to move at a speed of 10 – that's 10 pixels every frame. Change this to make your bullet go faster or slower.

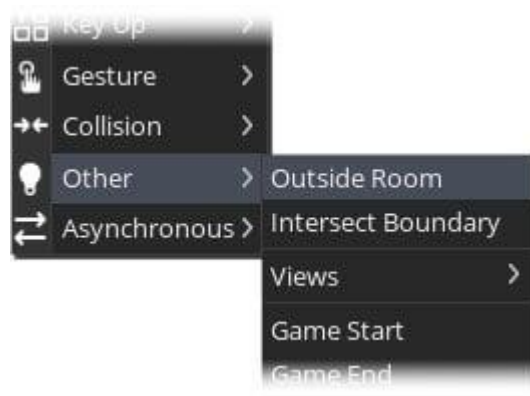
So that's how fast your bullet moves, but where does it move?

That's what **direction** controls. We're setting it to **obj_player.image_angle** – which means we're pulling **image_angle** from **obj_player** – telling the bullet to move where the player is facing.



HOW TO DESTROY AN INSTANCE IN GEMMAKER

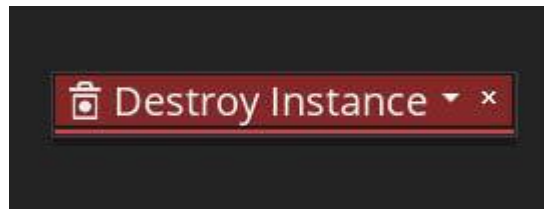
Our bullets should be moving now, but they should be destroyed when they exit the room.



In the Events window, click on “Add Event”. Hover over “Other” and select “**Outside Room**”.

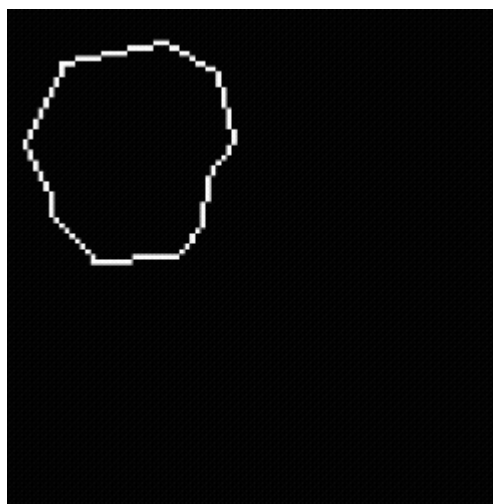
This event runs as soon as the instance has exited the room area. Add this here:

```
instance_destroy();
```



Here, the instance is destroyed, so it no longer exists in the room.

Of course, the object itself continues to exist in the Asset Browser, and new instances can be created from it at any time.





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Doesn't look like the rocks care, though. They better run.

And with that:

[~~1 Ship Movement~~ / 2 Destroying Rocks / 3 Finish Your Game]

NOTE:

In this workshop, the speaker in this workshop guides the students towards the Game designing and development and its career. How it was trend in the present market. What programming and technical skills should be learned etc....

Resource Persons:

1. K. Phaneendra Saketh (3rd Year CSE-DS)
2. U. Bheemeswar (3rd Year IT)
3. Manahor (3rd Year AIML)



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Feedback Back Report:

Form link: <https://forms.gle/dSEqnHwKUUCXWPsS7>

The students who attended the workshop had given the feedback.

List of the members are given below:

Name	Branch	Roll Number	Year	Section	Feedback	Comments
Ramya	Aiml	21a31a4220	III	A	Diamond	It's good
Anirudh Hruthen Parasa	Ai	21A31A4356	III	A	Diamond	Good ☐
s.karthikeya venkata Sai Reddy	Ece	21A31A04Q0	III	D	Diamond	excellent
Kunche Veera venkata Sai karthik	Aiml	21A31A4243	III	A	Diamond	Very good
OLETI.VIJAYKUMAR	Ece	22A31A0454	II	A	Gold	Nice workshop
Ch.Hemanth babu	Ece	22A31A0433	II	A	Gold	explanation is very awesome.
ksk_aditya	Ece	22A31A04U1	II	E	Diamond	I'm love this club. And really interested to join in this club
Alekhya	Ece	21a31a0483	III	B	Gold	Great
B Ashwitha	Ece	21A31A0468	III	B	Gold	Nothing
Dongara Abhiram	Ece	22A31A0435	II	A	Diamond	Nice
Mummareddy Sri harshitha Siva kalyani	Ece	22A31A04E4	II	C	Silver	Good
K.Anitha	Cse	22A35A0516	III	C	Gold	Good
Sabitha Pilla	Ece	22A31A0414	II	A	Silver	Good
Sai Ramya Harshitha Bhemala	It	21A31A1227	III	A	Silver	Well done
Saniya Anjum	Ece	22A31A04F0	II	C	Diamond	Nicely involved
Mohana Surekha Kolla	Ece	21A31A04E8	III	C	Gold	Good
D Haasini	Ece	22A31A04J8	II	D	Diamond	I learnt how to design a game...
Ch.Tirumala teja	Ece	22A31A04G3	II	C	Diamond	Nice
PABBINEEDI VEERA SATYA SIVAMANI SAI ADITYA	Ece	22A31A0455	II	A	Diamond	awesome
IYNAPARTHI SHASHANK KUMAR	Ece	22A31A0425	II	A	Diamond	Good
Surya Teja Yellaboyina	Ece	22A31A04F5	II	C	Diamond	The way approaching the students in friendly manner is very good
Ch Deepthi sri	Ece	22A31A04J7	II	D	Diamond	Fantastic
Bangaru Mahendra raj	Cse	22A31A05A0	II	B	Diamond	EXCELLENT ☐
Gorrela veera venkata sowjanya devi	Ece	22A31A04Q8	II	E	Diamond	Good
B.Durga jahnavi	Ece	22A31A04Q5	II	E	Gold	superb
RAMNATH	Ece	22A21A0431	II	A	Gold	nice



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V sri vishnu priya	Ece	22A31A04P8	II	E	Gold	Good
G Neeraj Surya	Ece	22A31A0438	II	A	Silver	The workshop is absolutely a big succession
Praneeth	Ece	22A31A04I6	II	C	Diamond	Good work
Tanuku lakshman kumar	Ece	22A31A04I8	II	C	Silver	Good
ALLADA SRIHARISH	Ece	22A31A0428	II	A	Diamond	Excellent
Sivakoti Lakshmi satya narayana	Ece	22A31A0462	II	A	Silver	Learnt new stuff
S.T.G.Varalakshmi	Ece	22A31A04L5	II	D	Diamond	EXCELLENT
B. Renuka	Ece	22A31A04Q4	II	E	Gold	Actuallyy Its like Greattt Listening to Intresting Things that I Always Wanted too....
Padala Vivek Reddy	Ece	22A31A04H7	II	C	Diamond	good
R. Jayanth	Ece	22A31A0459	II	A	Gold	Good explanation
Teja Kumar	Ece	22A31A04J1	II	C	Diamond	Workshop is nice
M.siva teja	Ece	22A31A04H3	II	C	Gold	Great job guys..
Kottedda manideep	Ece	22A31A04H2	II	C	Bronze	Cool
K. Kalyan kumar	Ece	22A31A0443	II	A	Gold	It's good
A HEMANTH NAGA SIVA	Ece	22A31A0426	II	A	Gold	Good □
Rubenjoy Adapa	Ece	22a31a04f6	II	C	Gold	I love this
Ram	Ds	22a31a44a5	II	B	Diamond	I really enjoyed!
N Saritha	Ece	22A31A04K9	II	D	Diamond	Nice Speakers , Very Nice
P.Pavan Kumar	Ai	22A31A43G6	II	C	Diamond	the presentation is very interesting and I learnt how to develop a basic game.
Kanithi.Vinay	Ece	22A31A04H1	II	C	Silver	I'm love this club.
P.vinay	Ds	22A31A44A6	II	B	Diamond	Great
Durga veera chakradhar.k	It	21a31a1245	III	A	Gold	Nothing
Shaik Zuheruddin	It	21A31A1259	III	A	Diamond	Nice
G.jahna Sindhu	Ece	22a31a04k1	II	D	Gold	Good
A.reshma	Ai	22A31A43B7	II	C	Diamond	Good
Sucharitha	Ece	22A31A04K8	II	D	Gold	Good
A.HARI PRIYA	Ece	22A31A04J3	II	D	Gold	Well done
Manne Namratha Sai	Ds	22A31A4416	II	A	Diamond	Nicely involved
THORAM NAGA VENKATA LAKSHMI RATNA HEMA	Ece	22A31A04S5	II	E	Diamond	Good
P SAI PRUDHVI	Ece	22a31a04i3	II	C	Silver	Good interaction with us...and way of explaining the things is also excellent
Bodasingi Lahari	It	21A31A1232	III	A	Diamond	Excellent



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BHEEMESWAR UNDURI	It	21A31A1264	III	A	Diamond	Awosome, the workshop is useful for Gamers.
PABBINEEDI VEERA SATYA SIVAMANI SAI ADITYA	Ece	22A31A0455	II	A	Diamond	Good teaching and dynamic presentation
Sana Navya	Ece	21A31A0489	III	B	Diamond	Good Presentation
Sorapalli Yaswanth pallav	Ece	22a31a04i7	II	C	Diamond	Good explanation and good caring
Kalepu Anjani Bhargav Kumar	Ece	21A31A04O6	III	D	Gold	Nice explanation
PENKE. SREERAMKASULU	Aiml	22A31A42C0	II	B	Diamond	Very good

Feedback Analysis Report:

We collected feedback from all the students via online. We have designed a feedback form for this. Student's feedback on the event is presented below:

FEEDBACK	NO OF STUDENTS
Diamond	34
Gold	20
Sliver	8
Bronze	1
Total	63