

# PROGRAMMING ASSIGNMENT: CREATING A PLATFORM GAME IN GAMEMAKER

**F**or your next programming assignment, you will be responsible for creating a platform game. As we have learned in this unit, a platform game is a game that involves controlling a character by having it jump between suspended platforms, over obstacles, or both to advance the game. ("Platform Game". *Wikipedia: The Free Encyclopedia*. Wikimedia Foundation, Inc. 22 July 2004. Web. 9 November 2015.)

I'm going to give you a bit more freedom with this assignment than your previous assignments. However, your game must meet the following minimum requirements.

## ROOMS AND BACKGROUNDS

- Your game must include at least two levels or rooms.
- The rooms do not need to feature scrolling graphics but can feature single screen movement.
- Your rooms must also include a background image that compliments the theme of your game.

## OBJECTS

- Your game must include an object for your main character that includes at least two sprites of the character facing left and facing right.
- You must also include walls and platforms.
- You will need at least 2-3 different types of enemies that are strategically placed in the room to make it challenging for the player to navigate through the room.
- You will need to include rewards and a goal that will advance the player to the next level.
- You will also need to include various hazards that will cause the player to lose a life or lose health if they come into contact with them.
- Finally, you will need to include various sound effects and background music for your game.

## KEEPING SCORE

- You will need to keep score as well provide the player with lives.
- Be sure to also include a High Scores table that should appear at the end when the game ends.



## GAME PLAY

- You will need to make use of some of the advanced tools and actions that we learned during this unit including **collision masks**, **parent objects**, **variables**, and **question actions** in order to ensure that your character jumps and moves through the room smoothly and accurately.
- You will also need to ensure you set gravity correctly so that the character jumps and falls properly.



## GAME DESIGN OUTLINE

In addition to creating the game, you will also need to come up with an outline of your game. Your outline should include a brief description of the game that walks us through the main points and objective of the game.

For your game design outline, you will need to use the following Game Design template:

# Game Title

## SUMMARY

Provide a brief description of the game, including the objective of the game, the gameplay (i.e. how the game works), characters in the game, the scene(s) in which the action takes place, etc.)

## GAME OBJECTS

Describe the objects that you will be using, what these objects will look like, and the purpose these objects will serve in the game.

## SOUNDS

Describe the sounds (and sound effects) you will be using and the purpose the sounds will serve in the game.

## CONTROLS

Explain what the user will be using to control the objects in the game (e.g. left mouse button, a key on the keyboard, etc.).

## GAME FLOW

Describe how the game works, from beginning to end. In other words, describe what happens when the game begins, what the user's options are, what the other objects in the game do, what happens when the user performs certain actions, etc.

## LEVELS

If there is more than one level, describe each level. Even if there is only one level, describe how the difficulty of the game increases as the game progresses.

Feel free to explore some of the numerous platform games that are available online. The following are just some websites you may find helpful when coming up with ideas:

<http://www.miniclip.com/games/genre-40/platform/en/>

<http://www.kongregate.com/platform-games>

<http://armorgames.com/category/platform-games>

<http://www.platformgames.com/>

Be sure to save your project, as well as your Game Design outline, in a folder called **Platform Game** in your COMPLETED ASSIGNMENTS folder.

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CATEGORY	CRITERIA	< LEVEL 1 0 – 49%	LEVEL 1 50 – 59%	LEVEL 2 60 – 69%	LEVEL 3 70 – 79%	LEVEL 4 80 – 100%	MARK
<b>Knowledge and Understanding</b>	Demonstrates an understanding of how to create a platform game using some of GameMaker's advanced tools and techniques	<ul style="list-style-type: none"> <li>Demonstrates no understanding of how to create a platform game using GameMaker's advanced tools and techniques</li> </ul> <p style="text-align: center;"><b>0-4.9</b></p>	<ul style="list-style-type: none"> <li>Demonstrates limited understanding of how to create a platform game using GameMaker's advanced tools and techniques</li> </ul> <p style="text-align: center;"><b>5.0-5.9</b></p>	<ul style="list-style-type: none"> <li>Demonstrates some understanding of how to create a platform game using GameMaker's advanced tools and techniques</li> </ul> <p style="text-align: center;"><b>6.0-6.9</b></p>	<ul style="list-style-type: none"> <li>Demonstrates considerable understanding of how to create a platform game using GameMaker's advanced tools and techniques</li> </ul> <p style="text-align: center;"><b>7.0-7.9</b></p>	<ul style="list-style-type: none"> <li>Demonstrates thorough understanding of how to create a platform game using GameMaker's advanced tools and techniques</li> </ul> <p style="text-align: center;"><b>8.0-10</b></p>	<b>/10</b>
<b>Thinking</b>	<p>The game meets all the outlined requirements</p> <p>Tests and debugs the game to ensure the program meets all the requirements</p>	<ul style="list-style-type: none"> <li>The game meets none of the outlined requirements</li> <li>Tests and debugs the program with no success</li> </ul> <p style="text-align: center;"><b>0-4.9</b></p>	<ul style="list-style-type: none"> <li>The game meets a limited number of the outlined requirements</li> <li>Tests and debugs the program with limited success</li> </ul> <p style="text-align: center;"><b>5.0-5.9</b></p>	<ul style="list-style-type: none"> <li>The game meets some of the outlined requirements</li> <li>Tests and debugs the program with some success</li> </ul> <p style="text-align: center;"><b>6.0-6.9</b></p>	<ul style="list-style-type: none"> <li>The game meets most of the outlined requirements</li> <li>Tests and debugs the program with considerable success</li> </ul> <p style="text-align: center;"><b>7.0-7.9</b></p>	<ul style="list-style-type: none"> <li>The game meets all of the outlined requirements</li> <li>Tests and debugs the program with great success</li> </ul> <p style="text-align: center;"><b>8.0-10</b></p>	<b>/10</b>
<b>Communication</b>	Provides a game design outline that clearly describes the key features and objective of the game	<ul style="list-style-type: none"> <li>Communicates the key features and objectives of the game with no success</li> </ul> <p style="text-align: center;"><b>0-4.9</b></p>	<ul style="list-style-type: none"> <li>Communicates the key features and objectives of the game with limited success</li> </ul> <p style="text-align: center;"><b>5.0-5.9</b></p>	<ul style="list-style-type: none"> <li>Communicates the key features and objectives of the game with some success</li> </ul> <p style="text-align: center;"><b>6.0-6.9</b></p>	<ul style="list-style-type: none"> <li>Communicates the key features and objectives of the game with considerable success</li> </ul> <p style="text-align: center;"><b>7.0-7.9</b></p>	<ul style="list-style-type: none"> <li>Communicates the key features and objectives of the game with great success</li> </ul> <p style="text-align: center;"><b>8.0-10</b></p>	<b>/10</b>
<b>Application</b>	Effectively applies programming knowledge and skills of GameMaker to create a platform game	<ul style="list-style-type: none"> <li>Applies programming knowledge and skills of GameMaker to create a platform game with no success</li> </ul> <p style="text-align: center;"><b>0-4.9</b></p>	<ul style="list-style-type: none"> <li>Applies programming knowledge and skills of GameMaker to create a platform game with limited success</li> </ul> <p style="text-align: center;"><b>5.0-5.9</b></p>	<ul style="list-style-type: none"> <li>Applies programming knowledge and skills of GameMaker to create a platform game with some success</li> </ul> <p style="text-align: center;"><b>6.0-6.9</b></p>	<ul style="list-style-type: none"> <li>Applies programming knowledge and skills of GameMaker to create a platform game with considerable success</li> </ul> <p style="text-align: center;"><b>7.0-7.9</b></p>	<ul style="list-style-type: none"> <li>Applies programming knowledge and skills of GameMaker to create a platform game with great success</li> </ul> <p style="text-align: center;"><b>8.0-10</b></p>	<b>/10</b>

### CURRICULUM EXPECTATIONS THAT ARE COVERED IN THIS ASSIGNMENT:

- B1. Describe fundamental programming concepts and constructs.
- B2. Plan and write simple programs using fundamental programming concepts.
- B3. Apply basic code maintenance techniques when writing programs.