



Team 4 - Singleton**9.5/10****Game:** Age of Empires

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GAME: Age of Empires	
Screenshot	Description
	It is important that there is a single instance of the item that controls the flow of the game, such as the item that manages available resources (gold, wood, stone, etc.) and game progress. To ensure that only one instance of this object exists, the Singleton pattern can be applied.

	The Singleton method could be applied to delimit that there is only one place where you can build various buildings offered by the game in addition to building important places like the castle, ensuring the management of resources in addition to avoiding duplicate buildings.
	The design pattern singleton is applied to take the resources, as we can see, one of this resources is the food, in the game exist so many buildings to have food, as farms, windmills and even we can hunting, all of these bring us food as a resource, but it is just initialized one variable of amount in all the game, from the start of the game to the end of the game.



The Singleton pattern in Age of Empires more generally is used to ensure that there is only one instance of a resource management class, such as a sound manager or animation manager, that is shared among all instances in the game. This prevents the creation of multiple instances of these handlers, which can unnecessarily consume resources and affect game performance. Applying this pattern correctly can help improve the efficiency and performance of the game.



The Singleton pattern can be seen reflected in the connection to the game server. In the game, players can play online and connect to a server to play multiplayer matches. The connection to the server is made through an object that handles the communication between the client and the server. To ensure that there is only one instance of this object in the entire game, the Singleton pattern can be used. In this way, any part of the game that needs to access the connection to the server can do so through the single instance of the Singleton class, which avoids problems such as duplicate connections or lack of synchronization between players.

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Singleton is also applied in this video game when you want to select which campaign you want to enter to, this makes sense since it is impossible to play two or more campaigns at the same time, so there only can be one campaign that you can select per game and this problem is solved by using the design pattern Singleton.