**Joseph of Egypt**

**Description**

“Now therefore let Pharaoh look out a man discreet and wise, and set him over the land of Egypt. Let Pharaoh do this, and let him appoint officers over the land, and take up the fifth part of the land of Egypt in the seven plenteous years. And let them gather all the food of those good years that come, and lay up corn under the hand of Pharaoh, and let them keep food in the cities. “

Joseph has been given power over the land and now he must become the savior of Egypt.

As the major officer in Egypt, Joseph will administer all the preparations for the 7 harsh years of drought.

Egypt’s land has 7 territories. (1) The riverside territory which is the most fertile land where all the crops will be planted and sowed. (2) The mineral territory which is the richest part of ore and other minerals to create both tools to work the land and the warehouses for the grains to be contained. (3) The city which is the land of the blacksmith and the ovens to melt the mineral to construct. (4) The village territories which is the place where all the people live, (Memphis, Giza, Thebes and Aswan). (5) The cattle territory where the cattle are bred. (6) The warehouse territory where the building of pyramids is done. (7) The mountain territory which can provide help from the “Lord”.

Each territory has a chief officer over that specific territory. Joseph will cooperate with them to coordinate the people to work the land and prepare every needful thing for the harsh season.

Depending on the difficulty the population will increase. Losing the game is equivalent to a lack of harvest and the death of the people. Joseph will need to produce enough to maintain the people and keep a fifth part of the harvest.

Winning the game is having a good administration and reaching the required quantity in less time.

Joseph will have to define direction, counsel together, and direct the work.

Main actors are Joseph, chief officers, workers, blacksmith. (All this will have different actions).

**End User Stories**

|  |  |
| --- | --- |
| Start Game  Continue Game(start existing game)  Main Menu  Help Menu  Game Play Menu  Construct Container  Calculate Harvest  Construct Warehouse  View Container status  View Warehouse status  Move Character  Construct Tools  Harvest  Transportation resources  Labor resources  Save Game  Time status  Feast or Famine | Explore location  Transport goods  Deliver goods  View Game map  Show current inventory  Riverside territory  Mineral territory  City territory  Village territory  Cattle territory  Warehouse territory  Mountain territory  Exit Game |

**Start Game**

End user executes the program. Computer displays a welcome message with a description of the game. Computer prompts for the player’s name. The end user enters his name. Computer displays a personalized message with the name of the player. Computer ensures a valid name is given and repeats the process until a valid name is entered.

Start or continue (from the main menu)

If end user continues, computer reads the previous file. If user starts a new game, a new file is created and the computer displays:

B beginner

E expert

A architect

Computer prompts user to enter a difficulty. User chooses a difficulty. Computer assign different values to the variables of total population, workers, land extension, etc

**Main Menu**

Computer Display the main menu

G - Start Game

C - Continue Existing Game

H - Get Help

S - Save the game

E - Exit Game

End user selects an option from the catalogue. Computer displays the desired option. If the option is invalid, the computer will show an error message. The program ends if Exit is selected.

**Help Menu**

Computer Display the Help Menu

O - Game Objectives

M - Moving yourself and others

E - Estimate Resources needed

H - Harvesting resources

D - Delivering resources

Q - Quit

End user selects a desired choice. Computer Displays the new screen. Selecting Quit will return the user back to the previous menu or screen.

**Game play menu**

M - move to a new location

X - explore a location

H - calculate the harvest

W - construct warehouse

T - construct tools

C - construct containers

G - transport goods

D - deliver goods

M - View Game Map

I - Show current inventory

Q - Quit

The user enters a selection and the computer takes them to the indicated view. If Exit is selected, the computer shows the Main Menu.

**Construct Container**

This is the first of three complex equations. This container will aid in carrying all the material to the warehouses or big containers. Each equivalent is that of a barrel. V = π \* r \* 2 \* h. The user will input the radius and height of the desired barrel.

**Calculate Harvest** (Similar to calculate resources)

7 years of food must be stored in containers, every year there will be 2 harvests of wheat, and every harvest will separate ⅕ of its total amount. Depending on the total amount of people Joseph must decide how much should be stored every season and therefore how much should he planted for. Each harvest is calculated by C \* P / .8 / 2

C = # of containers

P = # of people

.8 compensates for 20% saved

2 converts and annual supply into a single harvest

**Construct Warehouse** (pyramids)

This huge warehouse will have the form of a pyramid; one in each city of Egypt (Memphis, el Cairo, Alexandria). Construction will require many men, and tools. To design, calculate the volume of a Pyramid. How much food will the total amount of people require per day for 7 years. How many people are living in each city? How much do you need to store will determine the size of the pyramid. Then according to the labor force he will also need to bring stone, that will require cattle, men and a vehicle. Joseph has certain amount of vehicles that Pharaoh has disposed to his use.

Formula is V=(l\*w\*h)/3. The user will enter the length, width and height of the desired container to see the total volume of the container. The program will return the necessary amounts of materials and labor needed to construct the container.

**View container status**

Every season in which the containers have been filled with the fifth part of everything harvested. As the seasons go by Joseph must know what the status of the containers is and what he must still achieve, due to the complexity of creating a pyramid he would have to construct one and then others or he could start the three at the same time, but that will all have consequences. If the harvest is ready and is not taken to a container it will rot and not be accumulated in any container, hence, this requires careful calculation of things and use of personnel. The menu will show each container and its state of construction.

**View warehouse status**

This screen will show the user the current status of construction of each warehouse as well as the level of grain for each completed warehouse. It will also show the overall completion percentage of the game in relation to time, people and resources.

**Move character to a new location**

Because Joseph is the Chief Officer over the different land officers he has to travel and give instructions to others and organize people. Officers will have a conversation with Joseph whenever he reaches a city, they will offer help such as Men to work, or whatever. Joseph will also need to move to certain locations and direct the work with the personnel that he was given.

If Joseph has in total 10,000 men to work, he has to distribute the men to different areas to start working on priorities. Say 5 thousand to harvest, 1000 to harvest metal, carry it to the city and blacksmiths convert it to tools. Three thousand people will work on pyramids.

**Construct Tools**

The user will be shown a list of the following tools to be constructed along with the necessary materials and men to make it.

H - Hammer

C - Chisel

S - Saw

T - Transportation cart

Q - Quit

The user will select the tool to construct and it will be added to the inventory if they have enough resources to complete it. Selecting Quit will return them to the main menu.

**Harvest**

The user will be shown the current level of grain that can be harvested and prompted where that grain should be used (to feed cattle, people or to be put in a container). The user will also see current levels of grain for each category. When levels drop below zero for people or cattle, the user will be prompted that cattle or people are starving and they need to take action before death occurs. If levels exceed a certain threshold, people and cattle will be added and not simply maintained, thereby increasing the capacity to work.

**Transportation Resources**

The user will see the current transportation resources at their disposal and the location of each one. (ie, 5 carts at the containers, 10 at riverside, etc.) They will be able to create more carts based on their inventory levels of materials and available men.

**Labor Resources**

The user will see the current level of labor (man) resources and where they are currently working. They will also see how many are available for assignments. The user can make assignments in this part of the game to shift resources to other constructions or locations.

**Save Game**

User can save the current game at the current status and have the option to continue or exit.

**Time Status**

The user will see the current time status, in months. After 84 months, the game is over.

**Feast or Famine**

Once 84 months has expired in the game, the user will be presented with a Feast or Famine screen letting them know if they successfully saved Egypt or not. Statistics will also be shown of inventory levels as well as containers, grain, warehouses, people, etc.

**Explore Location**

When a location has been visited, it is marked and message is displayed with the description of the location's contents. The map and game menus is displayed with contents of the location showing on the map.

**Transport Goods**

The screen will show a message with the amount of goods that can be transported, the amount of resources that will be needed to complete the journey and the time that will take to do the journey. If the resources to complete the journey are not enough the computer will show a message telling “It is not possible to do the journey. Lack of resources: If the resources are enough the computer will display a message telling “good journey” and the journey will start.

**Deliver goods**

Check to see if the wagon and a worker is available to load the wagon with the kind of resource that it is permitted on the storage where the wagon and the worker are, if the resource to be delivered is not on the correct storage the computer will show a message telling “Please change the storage to the correct one to deliver the good” and then show the game menu to change the storage. If the storage is the correct to deliver the good and it has space, the computer will show a message telling “good delivered successfully” and will show the spaces left. If the storage is the correct to deliver the good but it has not enough space the computer will show a message telling “The storage is the correct but has not any free space. go to the menu to construct a new one”.

**View Game map**

After selecting the option “View game map” the computer will show a screen with the image of the game map and the parts of the map that has been visited will be showed with a mark.

**Show current inventory**

The computer will show a message with the amount of all the resources stored in inventory for each item in inventory.

**Riverside territory**

This is the most fertile land where all the crops are planted and sowed, is the main source of vegetables, legumes and seeds for the people and the workers that work in this place are peasants. This is the main source of wood of the seven lands to create tools.

**Mineral territory**

This is the richest part and the main source of ore and other minerals to create both tools to work the land and the warehouses for the grains to be contained. The workers that are on this place are the miners.

**City Land of blacksmith.**

This city is near of Memphis where the dealers get the meal and other things to live. The people are gentle and specialist in the manufacture of things of metal, copper, silver, gold, and so for.

There are five principals blacksmiths with big ovens, these are at North of the city and the buildings for manufacture the tools are at North West.

The houses are at south of the city, and the commerce is at the center.

This city is not a good fertile land.

Villages

**Memphis**

Latitude 350 08’ 57” N

Longitude 900 02’ 56” E

Is capital of [Aneb-Hetch](https://en.wikipedia.org/wiki/Aneb-Hetch), the first of the Lower Egypt it is near (12 mi) south of [Giza](https://en.wikipedia.org/wiki/Giza).

The city was founded by the pharaoh Menes It occupied a strategic position at the mouth of the [Nile delta](https://en.wikipedia.org/wiki/Nile_delta), and was home to feverish activity. Its principal port, Peru-nefer, harbored a high density of workshops, factories, and warehouses that distributed food and merchandise throughout the ancient kingdom. During its golden age, Memphis thrived as a regional center for commerce, trade, and religion

It is located in the lower Egypt.

Giza

Longitude 29.9830710 N

Longitude 31.13264 0E

It is located on the west bank of the [Nile](https://en.wikipedia.org/wiki/Nile), some 20 km (12.43 mi) southwest of central [Cairo](https://en.wikipedia.org/wiki/Cairo).

Giza is the most important city which served as the necropolis for the royalty of the Old Kingdom of [Egypt](http://www.ancient.eu/egypt/)

Located in the lower Egypt

Thebes

Latitude 380 19’ 30” N

Longitude 230 19’ 08” E

Is the center of the most important culture of Egypt, lied on the east side of the Nile, in the middle Egypt, 430 miles of Giza

Ancient Thebes with its Necropolis

Thebes, the city of the god Amon, was the capital of Egypt during the period of the Middle and New Kingdoms. With the temples and palaces at Karnak and Luxor, and the necropolises of the Valley of the Kings and the Valley of the Queens

Thebes is in middle Egypt

Aswan

Latitude 24005’26” N

Longitude 320 53’ 57” E

- East bank of [Nile](http://www.aldokkan.com/geography/nile.htm)

- Upper Egypt - immediately north of the first cataract. Navigation to the delta was possible from this location without encountering a barrier. From this frontier town to the northern extremity of Egypt the river flows for more than 1100 km without bar or cataract.

- The voyage from Aswan to the lower Egypt usually occupied between 15 and 20 days in favorable weather.

**The cattle territory**

It is an extensive land located in the lower Egypt, the land is excellent for the cattle, is nearest of the Nile and have approximately 100 hectares. This land is excellent to breed the cattle but when the weather is dry the people need to do channel and the life is difficult.

**Warehouse territory**

This is the place where all the grain will be stored. There is one man in charge of the product that goes into the warehouse, he keeps an inventory of the products stored in here and he will be responsible of the check-product. He will have control of the first in and first out (FIFO) in order to maintain control of what will go out of the warehouse first and not lose any portion of the product.

**Mountain territory**

Just like Nephi, Moses or the brother of Jared went to a mountain to get more knowledge about the tasks they were assigned to do, the mountain territory is a place to find knowledge, to visit and get some hints about the game, what it is required of the user to do and how to accomplish the task, depending of the level the user has selected.

**Exit game**

As part of the menu, the exit command will take the user out the program, but before the command is executed, the program will ask the user if he/she is sure to leave the game, the condition then will take place, whether the user leaves or stays on the game.