

**Code / Project** : CME1102 / 2  
**Year / Semester** : 2015-2016 Spring Semester  
**Duration** : 6 weeks

## Project: CENG-a-WAR

The aim of the project is to defeat enemy and destroy enemy's settlement and survive.



### GENERAL INFORMATION

The game is played in a 19\*49 game field. There are two competitors: Player and Computer. Player and Computer have a base. There is one kind of sources in the field, which is collected by players to upgrade own state. The aim of the game is to eliminate the enemy.

Production Queue → CCCTTTCWT →

Base Life : 1000

Time : 138

Base Mods

T	C	W	R
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Active Unit

CengMAN01

Life : 100

Level: 3

Active Unit Mods

G	E	F	W
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Production Queue → CTTTCWTTCT →

Base Life : 1000

Time : 188

Base Mods

T	C	W	R
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Active Unit

CengMAN03

Life : 100

Level: 1

Active Unit Mods

G	E	F	W
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## GAME INITIALIZATION

- The game area is loaded from a file "map.txt" at the beginning of the game. The player can load another maze from the main menu if he wants.
- Computer and Player Bases are placed at different parts (e.g., left and right) randomly of the map.
- At the beginning, player and computer have 3 CengMANs, their Bases, and 3 Trees.

## GAME ELEMENTS

### UNITS

There is one type of movable unit, which is soldier. Enemy units are represented with blue and player units represented with red.

**CengMAN:** CengMAN is our soldier and worker unit. He can collect resources or fight against enemies.

- CengMANs are named like CENG01, CENG02, etc. but represented in the field with only their levels.
- Player can create infinite number of CengMAN but he should pay attention of resource limits.
- For collecting items, soldiers have a backpack with 8 units. 1 cell can contain 50 Food max or 1 Cement.
- Soldiers can see everything within their View Range no matter any obstacle.
- If Player commands soldier to attack, it starts to search a path to reach the enemy element.
- CengMANs can eat Food as much as they want and their life increases. As soon as their life increase, their levels increase 1 for every 100 life (e.g., 199 life = level 1, 300 life = level 3). Level is increased maximum 5. This mechanism works on the other way around.
- If a soldier is situated to next to (i.e., North, South, East or West) of an enemy element, it automatically starts fighting.

Status of CengMAN		Modes of CengMAN		
Life	100	E	Extract	Drop contents of bag one by one to neighbor floor
Attack Damage	10 * level	F	Feed	Feed CengMAN
Attack Speed	1 hit per second	W	Wall	Place Cement to build Wall
Movement Speed	1 square per second	G	Go	<ul style="list-style-type: none"><li>• Go to pointed location</li><li>• Attack enemy Base, Tree, Wall, or CengMAN</li><li>• Harvest pointed Tree</li><li>• Collect dropped items</li></ul>
View Range	5 squares			
Needs	50 foods			
Creating Time	8 seconds			

### BUILDINGS

There are two types of buildings, which are Base and Wall.

**Base ([ ]):** It is given at the beginning of the game to all players. When a new soldier is created, it appears next to the Base. If player wants, Base can be repaired.

Status of Base		Modes of Base		
Life	1000	C	CengMAN	Create CengMAN
Repair Cost	1 Food/Life	W	Wall	Create Cement
Repair Time	10 Life/sec	T	Tree	Create Tree
		R	Repair	Repair Base if there are Food next squares

**Walls:** Walls are used for blocking enemy soldiers to reach us. At the beginning of the game, some walls are given that represented with #, but player can place new ones via a CengMAN and these walls are represented with X. Walls are produced from Base as Cement and Cement represented with O.

Status of Cements		
Building Cost	:	100 Foods
Creating Time	:	1 seconds

Status of Walls		
Life	:	200
Building Cost	:	1 Cement per Wall
Creating Time	:	1 second

## RESOURCES

- There are 3 types of resource in the game field, which are **Tree (T)**, **Food (F)**, and **Cement (O)**.
- Tree is necessary for growing food. Food is necessary for creating, upgrading, or healing CengMAN.
- Cement is produced from Base and CengMAN can carry them. Produced Cement drops on the next empty square of Base. If player wants, he can drop cement or place as a wall. If cement turns to wall, it cannot be moved but it can be demolished.
- Player can produce Tree. Produced Trees placed on the map randomly. Trees should be different colors depending on producer color.
- Trees give five Food every second and Foods pile up on the tree. Players can only harvest their own Trees, and they can destroy opponent's Trees.
- CengMAN can only eat Foods from his backpack. If a soldier eats a Food, his life increases according to amount of the food (e.g., 1 food = 1 life).
- Like Foods, Cements are carried with same bag pack. Cements are heavy materials therefore they should be stored at the bottom of the backpack. If a Cement placed over a Food, Food is crushed and it becomes unconsumable but occupies space and represented with ~. To prevent crushing of Foods, player should extract their backpack on the floor without any collision to the other game elements and take back materials correct order.

Status of Trees		Status of Foods	
Life	50	Creating Time	5 Foods/sec
Building Cost	50 Foods	Max Food Limit	50 Foods
Creating Time	1 second		

## GAME PLAYING INFORMATION

If two enemy soldiers encounter while they are walking around; they start to fight and the winner will continue to do his mission after the fighting. Units cannot move in the diagonal directions; they can only go 4 directions (i.e., North, South, East or West).

Player controls the game with mouse commands. Game should continue while the player is clicking any command. Firstly, player should select a CengMAN with mouse then click the command which is located right side of the screen and then click anywhere he wants.

Game time displayed on the screen is based on real time. You can use system time for that purpose.

## END OF THE GAME

A competitor who destroys enemy's Base and CengMANs will win the game.

## SUGGESTED WEEKLY PROGRAM

1. Designing screen, menu, classes and data structures. Load map. Game screen.
2. Base productions. Mouse movements.
3. Path finding.
4. CengMAN operations.
5. Remaining parts of the game, test.

<b>First Evaluation:</b> 22.4.2016 <b>Report:</b> 22.4.2016	<b>Final Evaluation:</b> 16.5.2016 (presentation <b>in English:</b> powerpoint + poster) <b>Report:</b> 16.5.2016
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