



## **CENG 241 OBJECT ORIENTED PROGRAMMING**

### **PROJECT : ADAMS BATTLE**

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# **A- Introduction of Program**

Program Language: C++

Main Programs Name: Adams Battle

Compiler: Code::Blocks

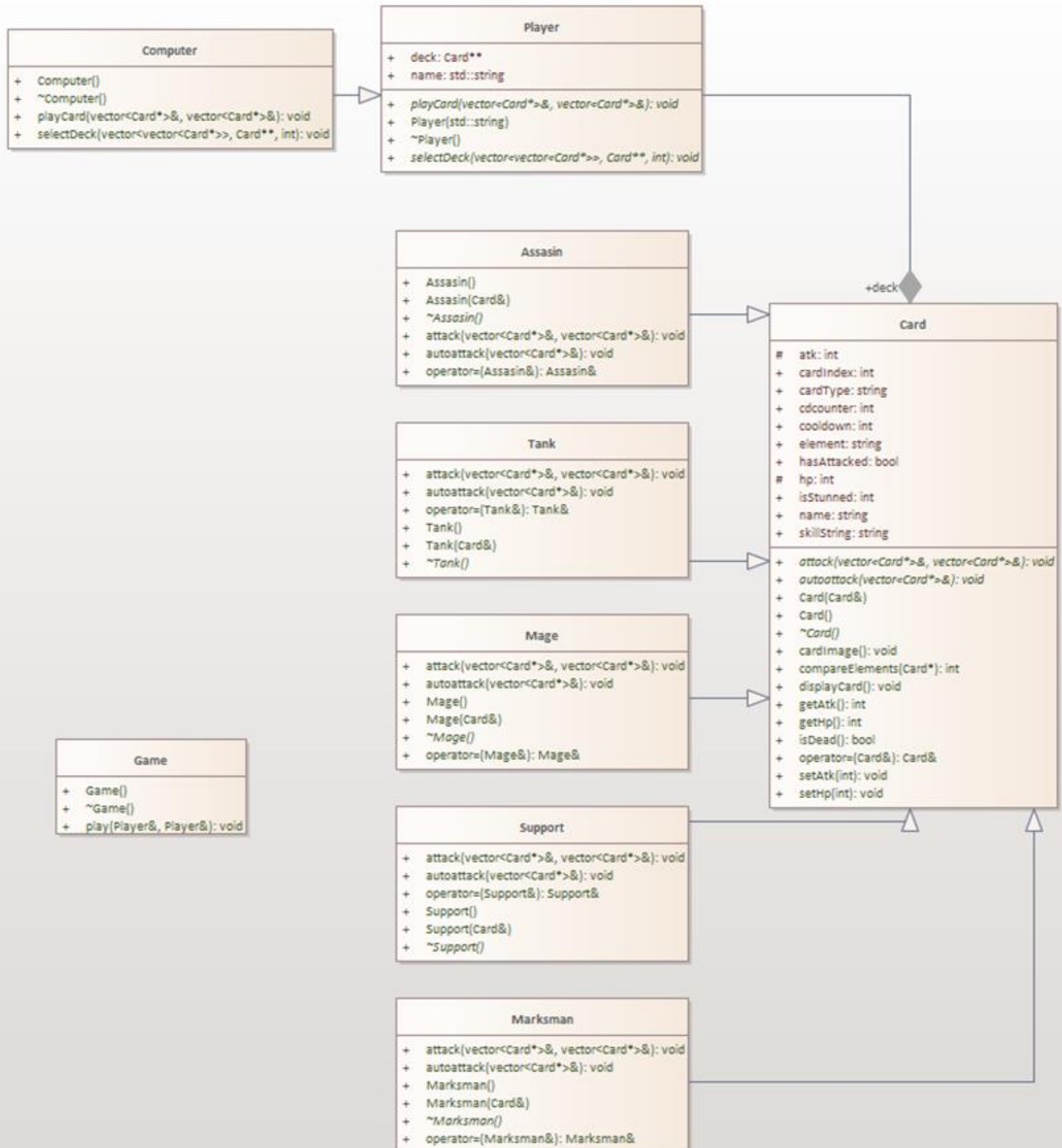
## **B- Design of Program**

### **1-) Aim of the Game**

Adams Battle is a Strategic Turn Based Auto Battle game.

Our aim is to make a turn-based card game where users enter a tactical battle. Player(s) can use various strategical ways to win the game. The game features variety of game modes such as: Boss Battle, Computer vs Player and Player vs Player.

# UML Diagram



## 2-) Design of the Game

### There are 5 types of Cards

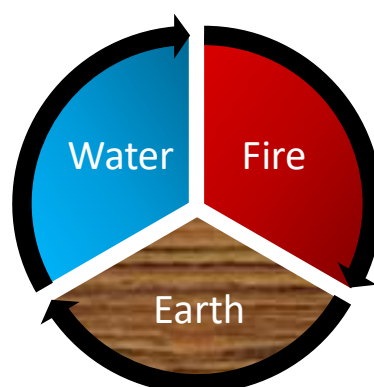
1. **Tank:** Tanks have high health points to take the front damage. If there is a Tank type card on the enemy field, cards will attack the Tank first.
2. **Mage:** Mages will get stronger as the game goes on. When a Mage type card attacks, they get +5 attack increase permanently. But they are weak early game.
3. **Support:** Supports are here to heal your cards. Their automatic attack doesn't deal any damage, but it will increase the HP of a card in your team.
4. **Marksman:** Marksman will carry the damage load for your team. Marksman type cards have the possibility to deal Critical Damage. It will double their damage(x2).
5. **Assassin:** Assassins will target the Lowest Health card. Assassins can bypass the Tank type in enemy field. Assassins have high attack damage early game.

### There Are 3 Types of Elements

1.Fire 2. Earth 3. Water. Elements counter each other like:

1. Fire>Earth
2. Earth>Water
3. Water>Fire

When a card attacks, the elements of the card they are attacking are compared. If the attacking card's element is superior, the damage is doubled. Element superior doesn't affect defending or skills.



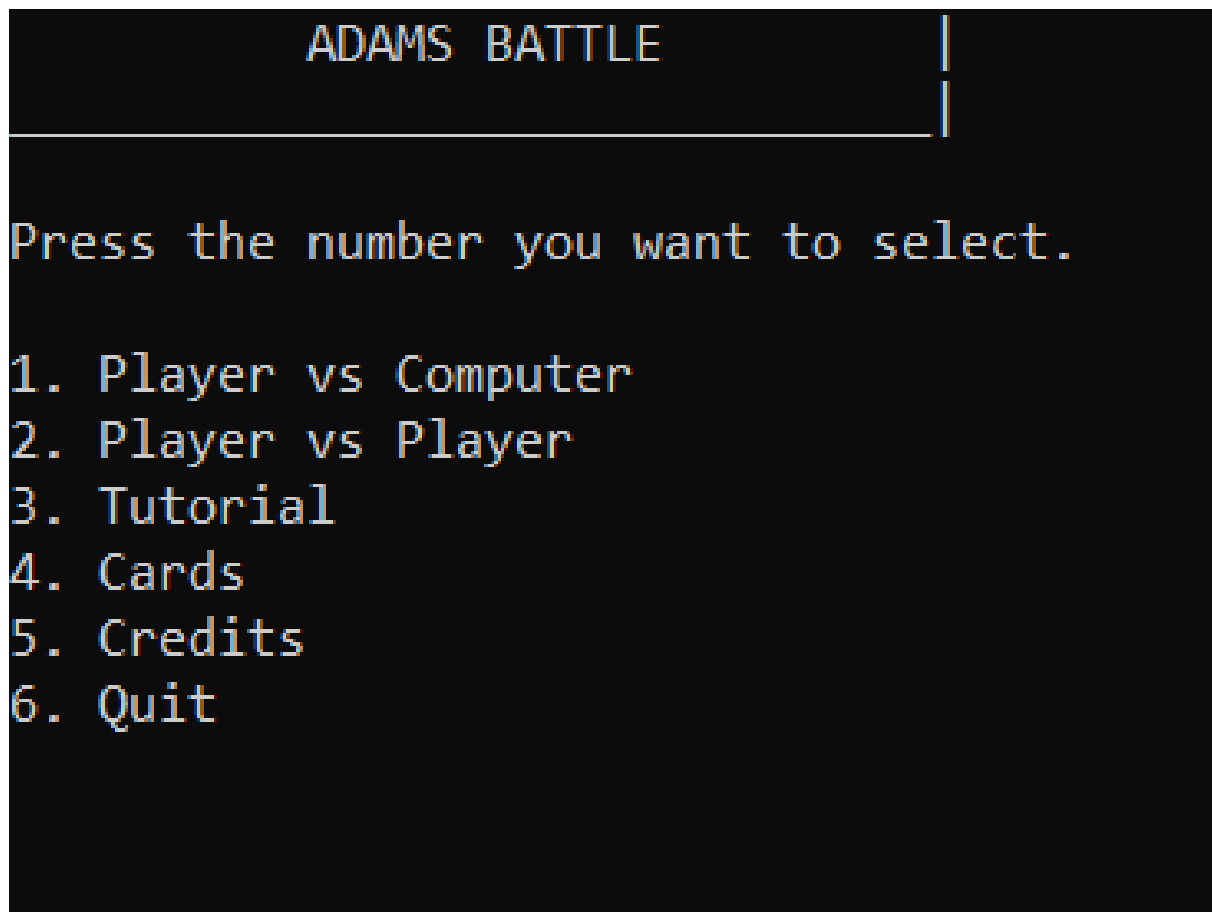
## Skills

Each card have their unique skill. Skills have cooldown so they can't always use skill (except if their cooldown is 0). When the round ends, cooldowns of the cards on the field will be reduced by 1. When the time comes for the card, they will use their skill! You can see it in Battle Info part.

## 3-) Overview of the Game

After opening the game player(s) could choose one of the:

1. Player VS Computer
2. Player VS Player
3. Tutorial
4. Cards
5. Credits
6. Quit



# 1-) Game modes

Player(s) can choose 3 different modes:

Players can choose Player Vs Computer Classic or Player vs Boss by entering number of mode or entering "x" for returning menu.

```
1.Play vs Computer Classic Mode
2.Play vs Boss

Select game mode(x for returning main menu):
```

And Player Vs Player which is on main menu

## A-) Gameplay

```
1.Play vs Computer Classic Mode
2.Play vs Boss

Select game mode(x for returning main menu): 1

Player 1 Select one.

1.Use existing deck
2.Create your deck
```

Player will choose deck by using existing deck or creating their own deck.

## Choosing Existing deck

Players can choose an existing deck.

```
1.Play vs Computer Classic Mode
2.Play vs Boss

Select game mode(x for returning main menu): 1

Player 1 Select one.

1.Use existing deck
2.Create your deck
1

1.Deck: Mobayi - Marcus - Bebi - Muccuk - Bedocan - Lorach - Umai -
2.Deck: Lisa - Atreus - Jagu - Bromen - Umai - Lorach - Bedocan -

Select your deck
```

## Create Your Own Deck

Players choose 7 cards to create a deck (Same card cannot be chosen twice)

```
Player 1 Select one.

1.Use existing deck
2.Create your deck
2
Cards:

0. Leoxane   Assassin   fire
1. Mobayi    Tank        fire
2. Marcus    Mage        fire
3. Bebi      Mage        fire
4. Muccuk    Mage        water
5. Bedocan   Assassin    water
6. Lorach    Support     water
7. Umai      Mage        water
8. Bromen    Tank        earth
9. Jagu      Assassin    earth
10. Atreus   Marksman    earth
11. Lisa     Mage        earth
12. Gus      Tank        earth
13. Saul     Support     water
14. Hector   Assassin    fire
15. Xeno     Mage        fire
16. Terra    Support     earth
17. Napo     Marksman    earth

Select 1. card: 0

Select 2. card: 2

Select 3. card: 3

Select 4. card: 5

Select 5. card: 8

Select 6. card: 5

You cant select same card

Select 6. card: 4

Select 7. card: _
```

# Preparation Screen

Player 1

Deck 1:

	name	atk	hp	type	element
1)	Leoxane	15	40	Assasin	fire
2)	Marcus	8	38	Mage	fire
3)	Bebi	9	37	Mage	fire
4)	Bedocan	13	34	Assasin	water
5)	Bromen	6	81	Tank	earth
6)	Muccuk	9	36	Mage	water
7)	Umai	7	37	Mage	water

BATTLE FIELD

Player 1 area:

ROUND: 1

damage advantages(x2): water>fire; fire>earth; earth>water

Computer area:

Computer

Deck 2:

	name	atk	hp	type	element
1)	Lisa	7	37	Mage	earth
2)	Atreus	13	38	Marksman	earth
3)	Jagu	15	40	Assasin	earth
4)	Bromen	6	81	Tank	earth
5)	Umai	7	37	Mage	water
6)	Lorach	4	40	Support	water
7)	Bedocan	13	34	Assasin	water

Player 1's turn. Select a card to play from your deck:

n.

Players choose a card from their deck. This card is placed in the field section. After the cards are selected, the battle will start.

By entering the mighty battlefield, Battle Screen will open and show both players cards in field.

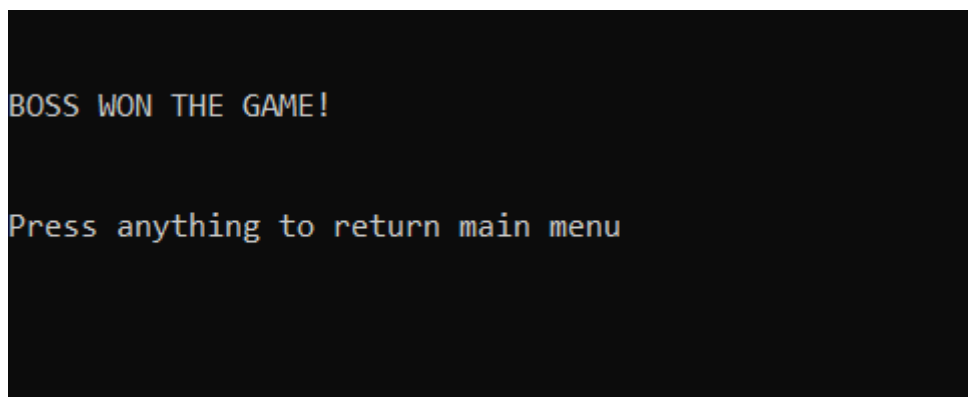


# BATTLE SCREEN



Played cards appear in the field section. Cards attack sequentially according to the round. If the round is odd 1. player cards have priority, if round is even 2. Player cards have priority. Attacks made and skills that are used appear in the battle info section. If all the cards in field have attacked or stunned (unable to attack or use skill) round ends.

## End Screen



After game ends you can return main menu.

## B-) Play Vs Boss

```
BOSS
Deck 1:      name  atk  hp   type   element

                BATTLE FIELD

BOSS area:      -BOSS atk:10  hp:500 Tank fire-

ROUND: 1_____ damage advantages(x2):  water>fire; fire>earth; earth>water

Player 1 area:

Player 1
Deck 2:      name  atk  hp   type   element
1)  Leoxane   15  40  Assassin  fire
2)  Mobayi    5   80  Tank      fire
3)  Marcus    8   38  Mage      fire
4)  Bebi       9   37  Mage      fire
5)  Muccuk    9   36  Mage      water
6)  Bedocan   13  34  Assassin  water
7)  Lorach    4   40  Support   water

Player 1's turn. Select a card to play from your deck:
```

In this mode Boss has a unique skill set.

- Boss has high health pool.
- If boss dies game ends.
- Boss cannot be stunned.
- Has 4 different skills.

```
ROUND: 1

FIELD 1:      -BOSS atk:10  hp:500 Tank fire-

_____ damage advantages(x2):  water>fire; fire>earth; earth>water

FIELD 2:      -Atreus atk:13  hp:38 Marksman earth-

Battle Info:
BOSS : gained +50 hp.
```

```
ROUND: 2

FIELD 1:      -BOSS atk:15  hp:484 Tank fire-

_____ damage advantages(x2):  water>fire; fire>earth; earth>water

FIELD 2:      -Atreus atk:13  hp:38 Marksman earth-  -Bromen atk:6  hp:81 Tank earth-

Battle Info:
Player 1 : Atreus attacked BOSS for 13x1x1=13 damage. BOSS's remaining hp: 471
BOSS : Attacked everyone for 15 Damage
```

# Results

We managed to make a tactical turn-based game while using OOP's fundamentals such as:

- Polymorphism
- Abstraction
- Encapsulation
- Inheritance

The problems we faced in the programming process allowed us to improve ourselves and the program.

In the future we can develop this game more.

We can improve the game with:

1. Adding more cards
2. Adding more mechanics
3. Adding proper graphics
4. Making it online service game
5. Balancing existing cards

