Valentin Vasilev

PROBLEM ANALYSIS

Core logic of the game (problem)

1. Display an explanation of the rules of the game.
2. Display and explain the possible action moves.
3. Let the user choose one action move (from 5 possible) and get the input.
4. Make the move and update the stats of the player and the enemy.
5. Display the move and the updated stats.
6. Calculate the enemy move base on the player move, player stats and enemy stats.
7. Make enemy move and update the stats of the player and the enemy.
8. Display the move and updated stats.
9. Get and make player move.
10. Repeat until either the player has died or the enemy.
11. Display a victory or lose message.

I. Player Input

The player input consists of simple choice from 1-5.

- **‘1’** = normal attack
- **‘2’** = special attack
- **‘3’** = re-charge
- **‘4’** = dogde
- **‘5’** = heal

II. Enemy ‘Input’

The enemy choice of action move is based on the player`s choice and stats.

- **Normal attack**

1. The player used normal attack as well. This just makes the game a little bit easier.
2. The player used dogde. That is because when dogde is used the hit chance is lower. However, the hit chance is still bigger then the hit chance for special attack, therefore bigger chance for successful hit.
3. Enemy has only 10EP. This ensures that the enemy will still make a move when it has low EP, instead of using re-charge.

- **Special attack**
  1. The player used re-charge. That is when the player is more vulnerable and the hit chance goes up.
  2. The player has only 16 HP left. That way the enemy will kill the player in one hit, because the special attack does 16 dmg.

- **Re-charge** – simply when it runs out of energy points (EP), but it has 2 conditions
  1. Of course, when it has 0EP.
  2. When it has less than 10EP. That way it is ensured that the last move it would make when it has 10EP, before using re-charge, would be normal attack.

- **Dogde** - I gave 2 options to the enemy to use dogde
  1. When the player did special attack. That way the player has less chance of successful hit.
  2. When the player has 25EP (that`s the cost for special attack). Again that makes it harder for the player to hit.
     Or when the enemy has 16 HP left, because the special attack does 16 dmg and it will try to protect itself.

- **Heal**
  1. When the enemy has 10 HP or less. That way if the player does not pay attention and doesn’t see that he can kill the enemy in one hit, the enemy will heal above the normal attack dmg (10) and it wouldn’t die in 1 hit.
  2. When the enemy has 16 or less HP. Same logic.

III. Output (displaying the scene)

1. Display an explanation of the rules of the game. (only before the first move. After that skip this step)
2. Display and explain the possible action moves.
3. Displays player stats.
4. Ask for player`s choice of action move.
5. Displays the action move that the player chose and what the move does.
6. Displays enemy action move and what the move does.
7. Displays enemy stats.

IV. Information stored

- **Attack moves variables** (for the player and the enemy)

1. **Normal attack and special attack**
   - Dmg and EP cost.
   - hit and miss chance.

2. **Re-charge**
   - new EP charge rate.
   - updated EP for the enemy and player.
   - updated hit and miss chance for normal attack and special attack for the enemy and the player.

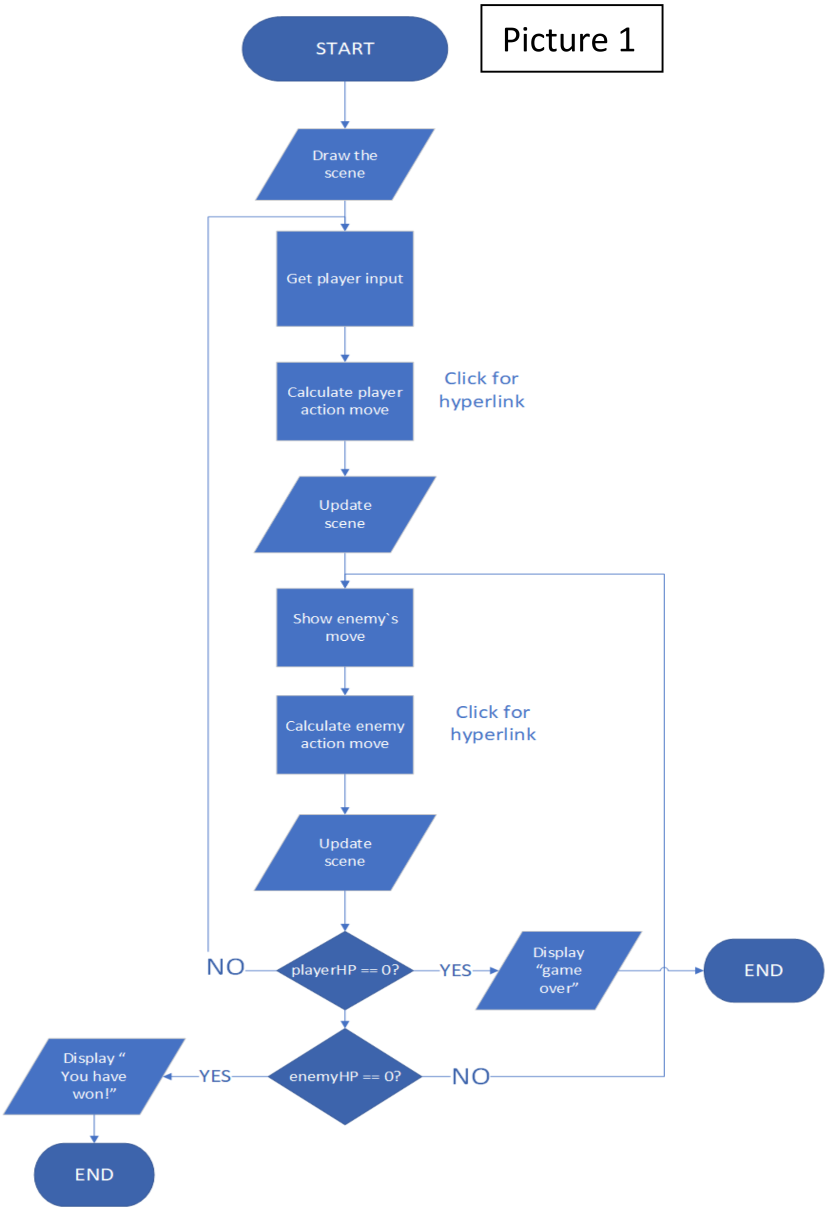
3. **Dogde**
   - EP cost.
   - updated hit and miss chance for normal attack and special attack for. the enemy and the player.

4. **Heal**
   - EP cost.
   - updated EP and HP for the player and the enemy.
   - second move for the player and the enemy.

- **Other variables**
  - player and enemy HP, EP.
  - updated enemy and player HP, EP.
  - max and mix HP and EP.
  - EP charge rate per turn and updated EP charge rate.
  - five chars for the player choice.
  - attack moves hit and miss chance for both the player and the enemy.
  - updated attack moves hit and miss chance for both the player and the enemy.
  - functions to calculate the attack moves and the hit and miss chance for both the player and the enemy.

DESIGN

This flow chart shows the main logic loop of the game.
For 'calculate player action move' refer to **picture 2.**
For 'calculate enemy move'
Refer to **picture 7.**



Picture 1

Click for hyperlink

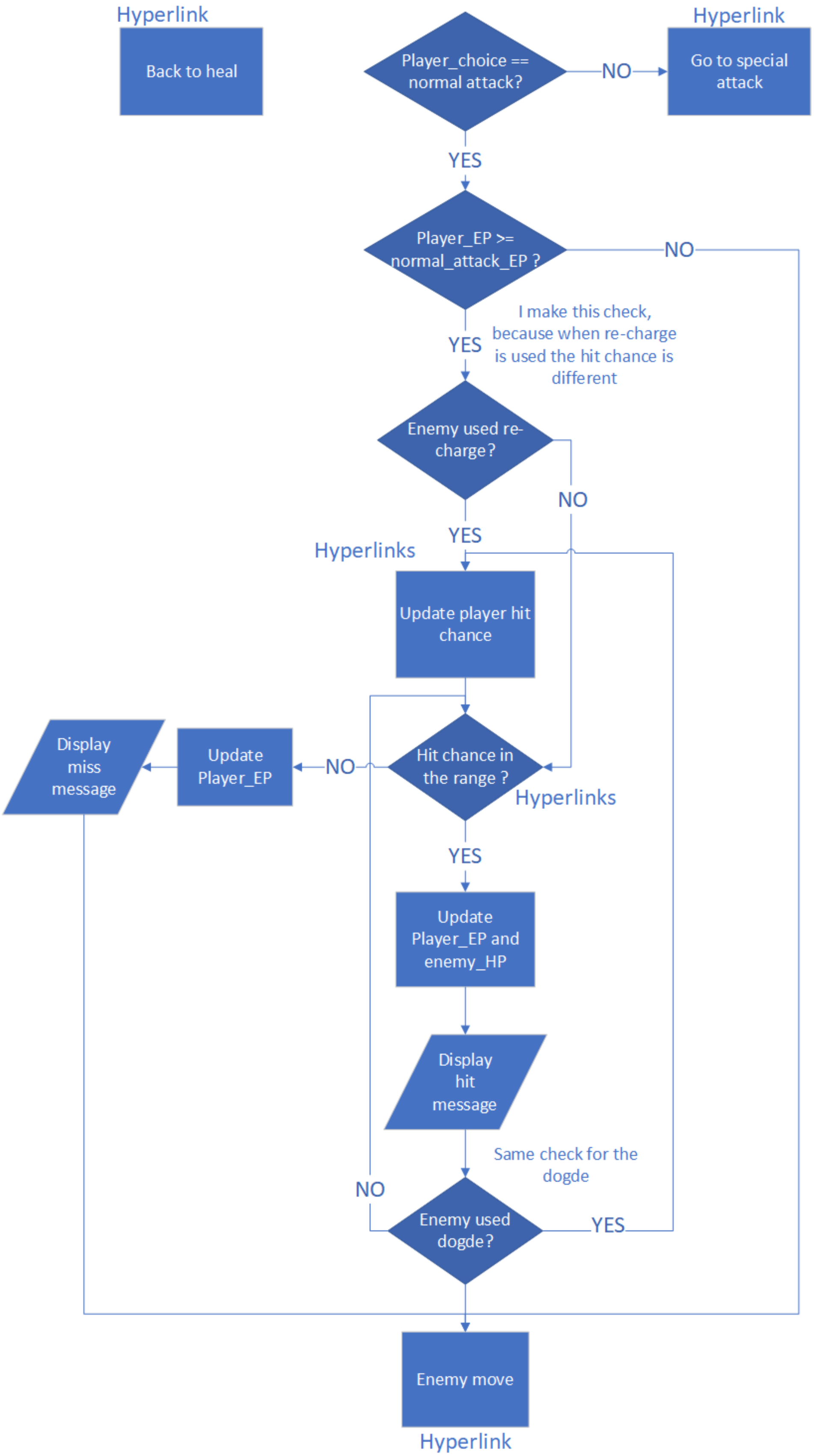
Click for hyperlink

This flow chart calculates the normal attack move for the player.
For ‘go to special attack’ refer to **picture 3.** For ‘back to heal’ refer to **picture 6.**

For ‘update player hit chance’ refer to **picture 12.**

For ‘enemy move’ refer to **picture 7.**

Picture 2



Picture 3

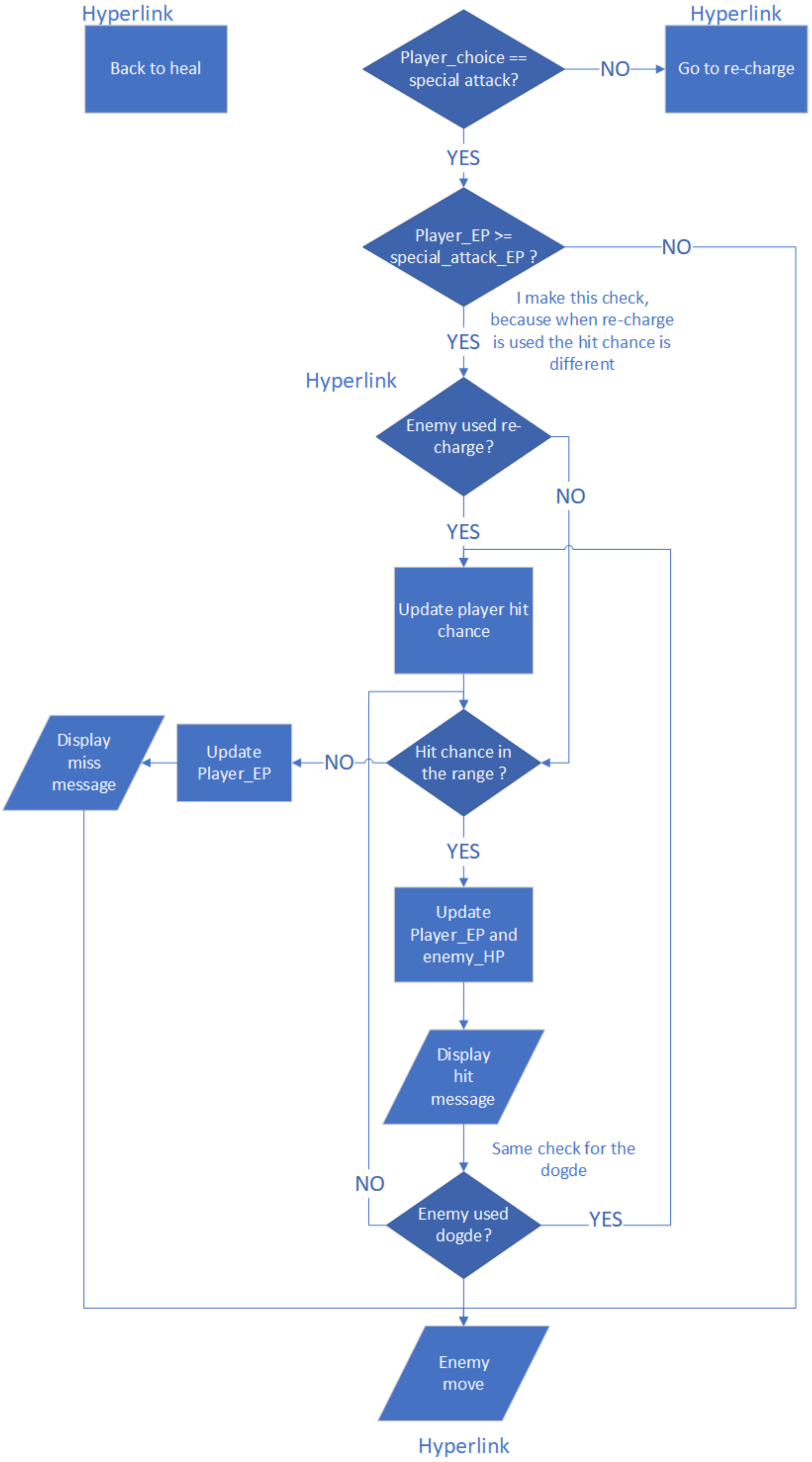
This flow chart calculates the special attack move for the player.

For ‘go to re-charge’ refer to **picture 4.**

For ‘back to heal’ refer to **picture 6.**

For ‘enemy move’ refer to **picture 7.**

For ‘update player hit chance’ refer to **picture 13.**



This flow chart calculates the re-charge move for the player.

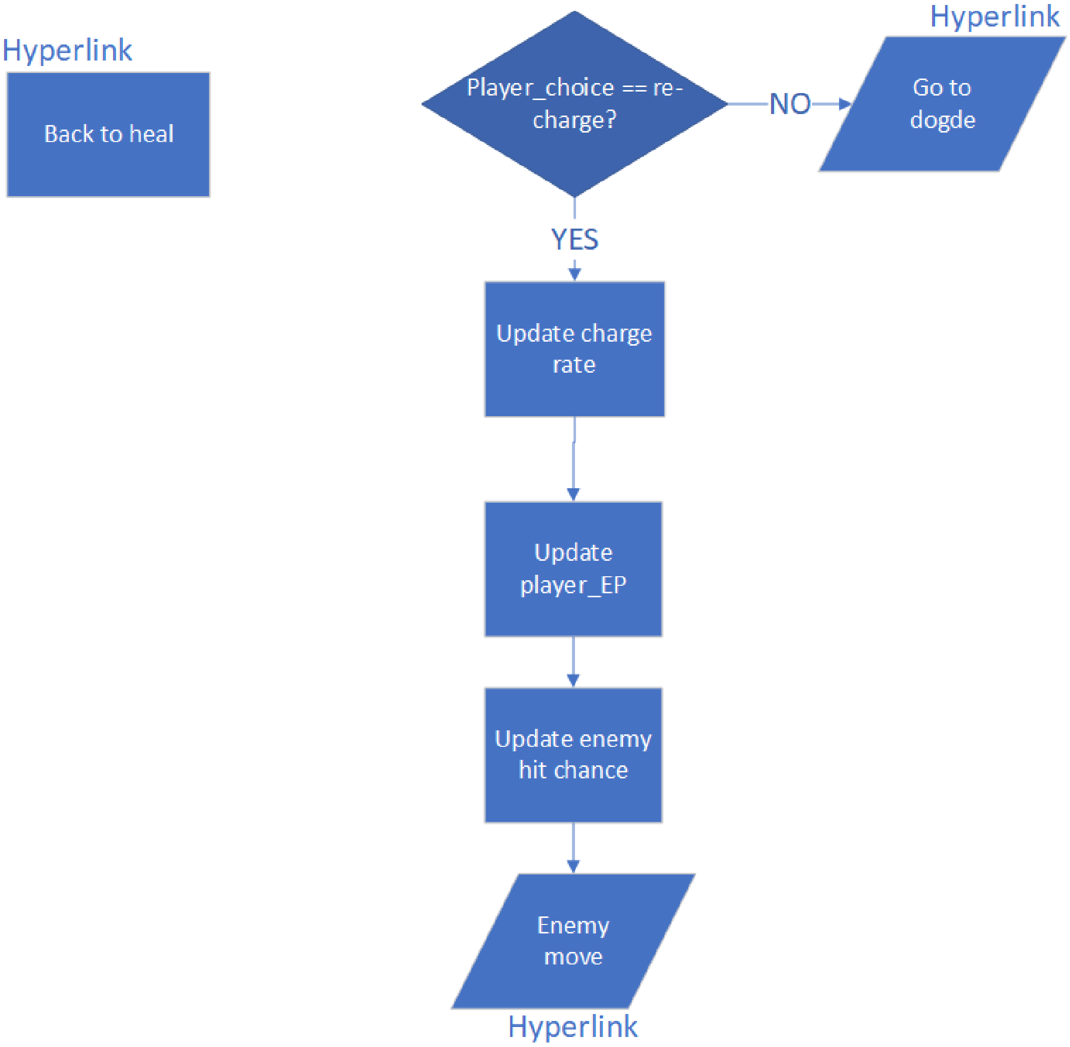
For ‘go to dogde’ refer to **picture 5.**

For ‘back to heal’ refer to **picture 6.**

For ‘enemy move’ refer to **picture 7.**

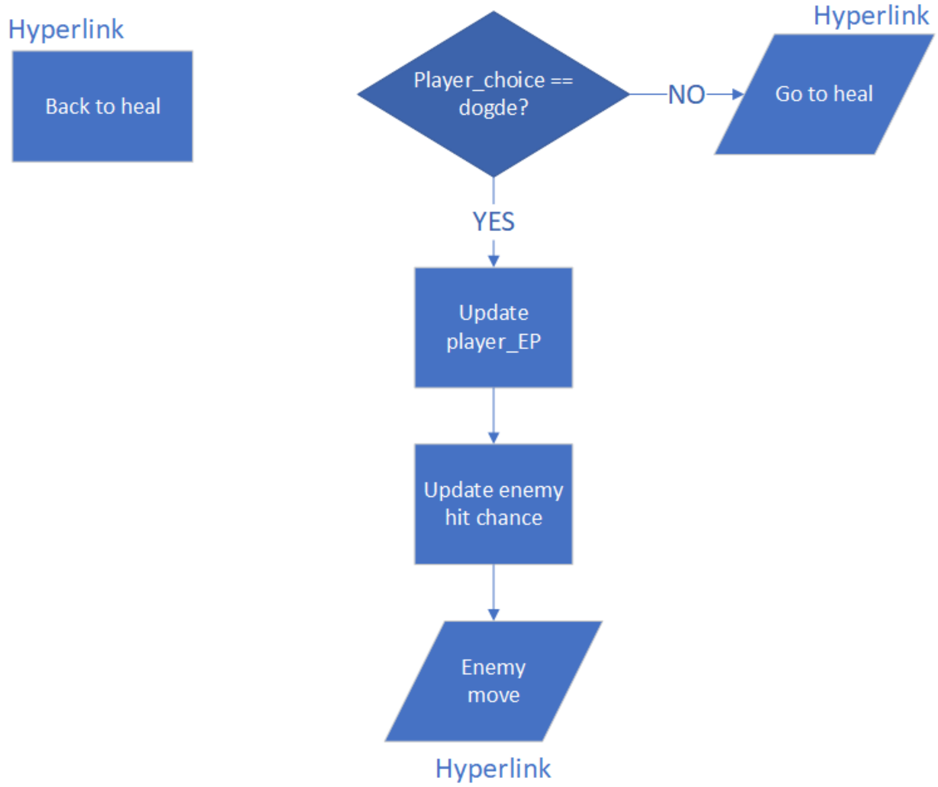
For ‘update enemy hit chance’ refer to **picture 14,15.**

Picture 4



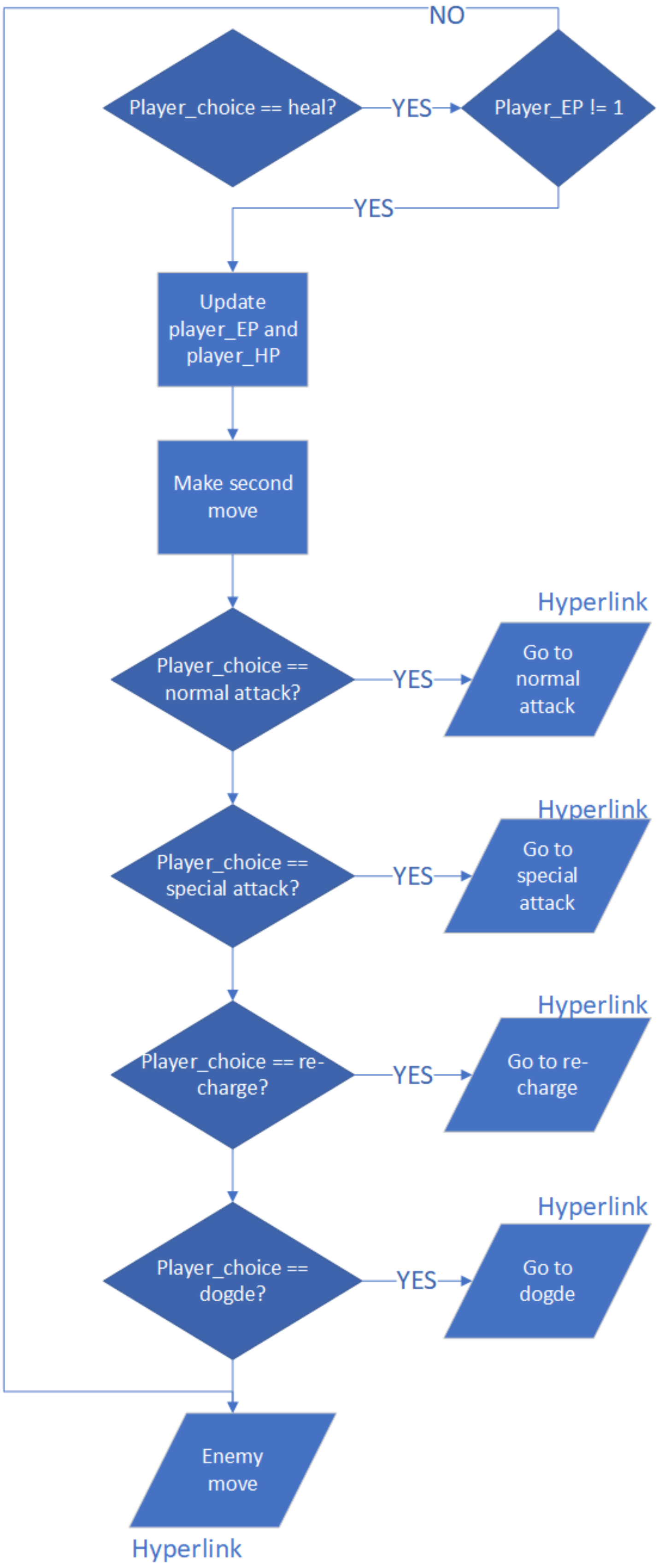
This flow chart calculates the dogde move for the player. For ‘go to heal’ and ‘back to heal’ refer to **picture 6. For ‘enemy move’ refer to picture 7**. For ‘update enemy hit chance’ refer to **picture 16,17**

Picture 5



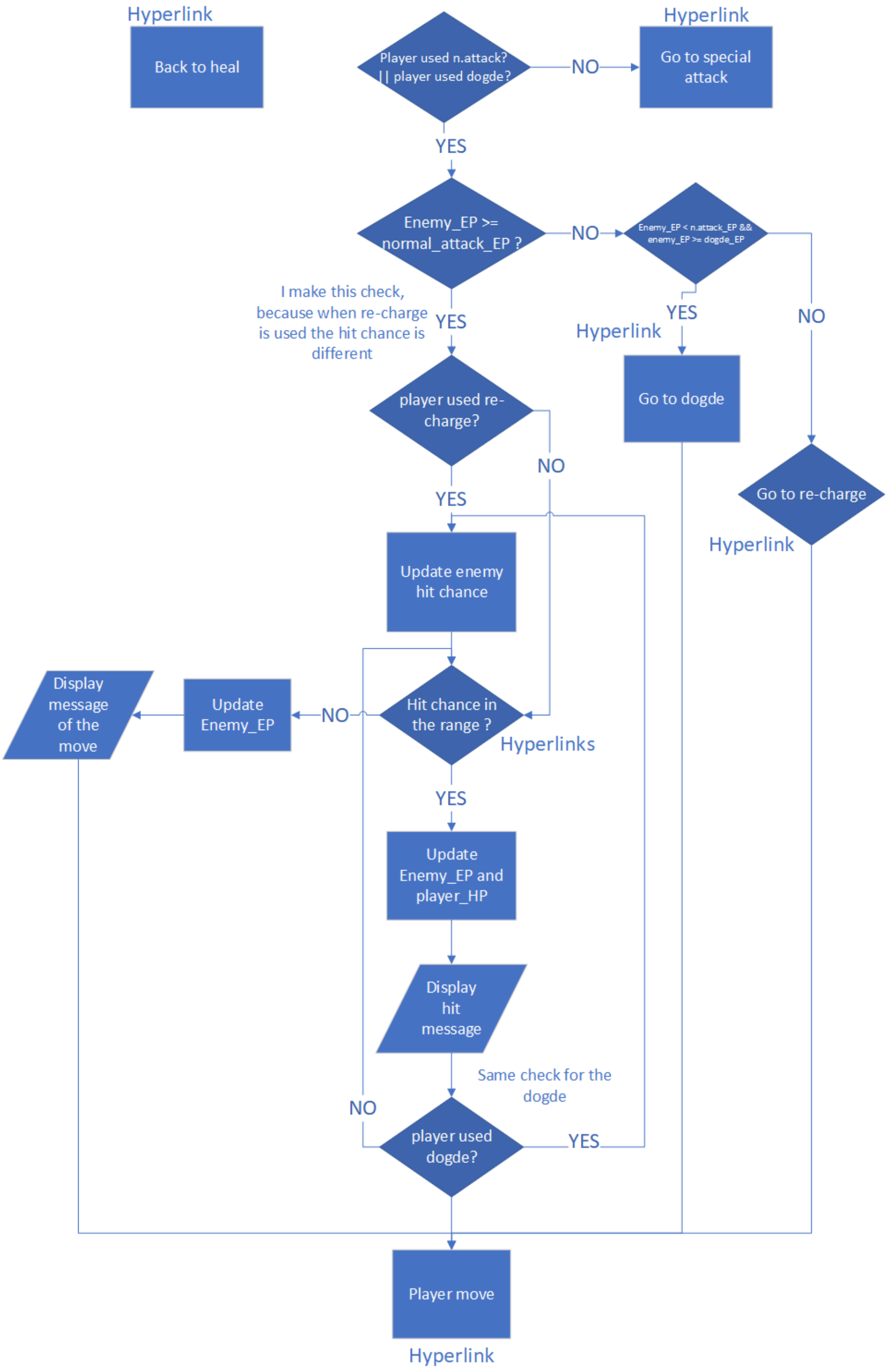
This flow chart calculates the heal move for the player. For ‘go to normal attack’ refer to **picture 2**. For ‘go to special attack’ refer to **picture 3**. For ‘go to re-charge’ refer to **picture 4**. For ‘go to dogde’ refer to **picture 5**.

Picture 6



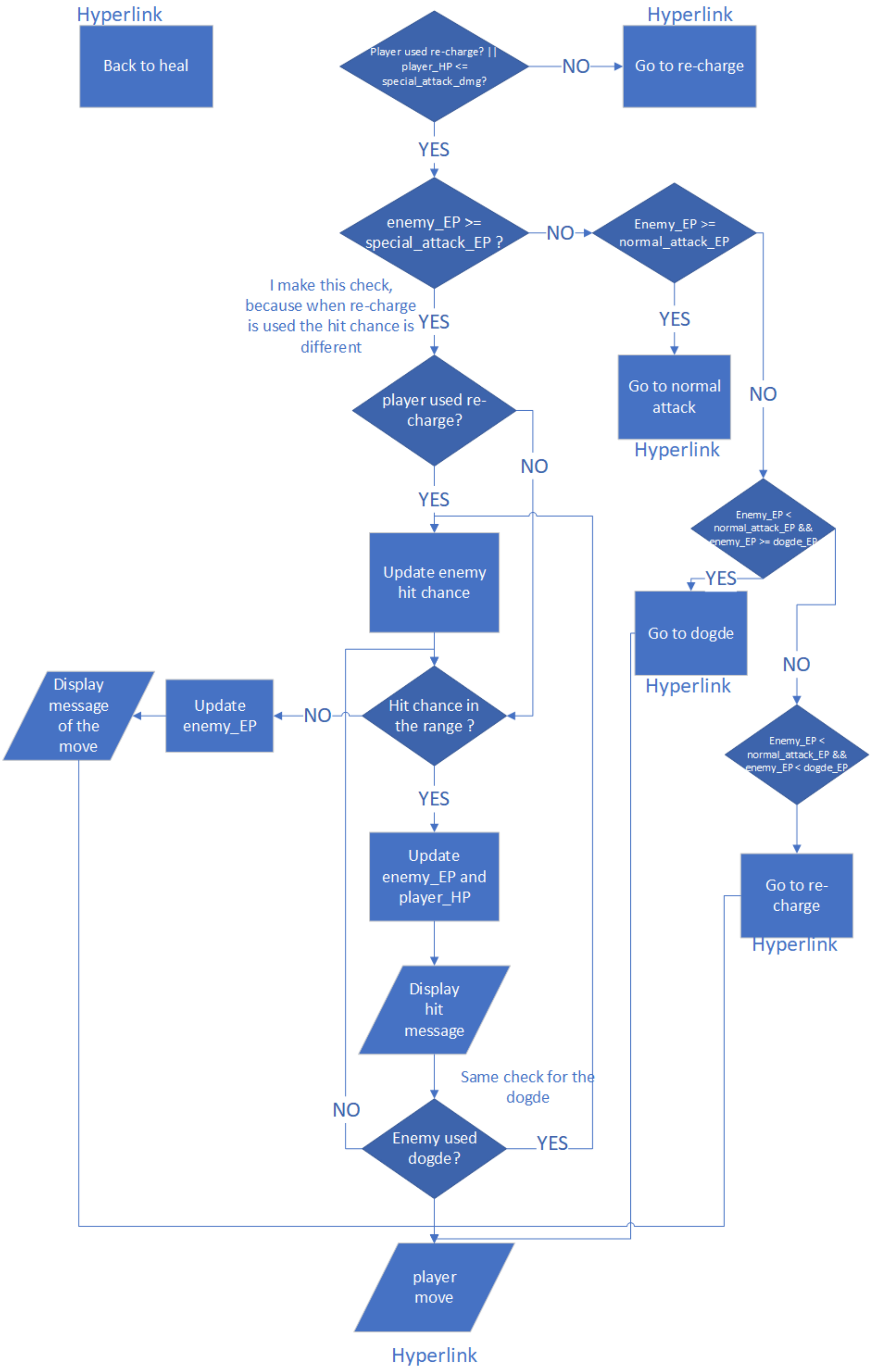
This flow chart calculates the normal attack for the enemy. For ‘go to special attack’ refer to **picture 8**. For ‘back to heal’ refer to **picture 11.** For ‘go to dogde’ refer to **picture 10.** For ‘go to re-charge’ refer to **picture 9**. For ‘player move’ refer to **picture 2.**

Picture 7


Hyperlink
Back to heal
Player used n.attack? || player used dogde?
NO
Hyperlink
Go to special attack
YES
Enemy_EP >= normal_attack_EP ?
NO
Enemy_EP < n.attack_EP && enemy_EP >= dogde_EP
I make this check, because when re-charge is used the hit chance is different
YES
Hyperlink
YES
NO
Go to dogde
player used re-charge?
NO
YES
Go to re-charge
Hyperlink
Update enemy hit chance
Display message of the move
Update Enemy_EP
NO
Hit chance in the range ?
Hyperlinks
YES
Update Enemy_EP and player_HP
Display hit message
Same check for the dogde
NO
player used dogde?
YES
Player move
Hyperlink

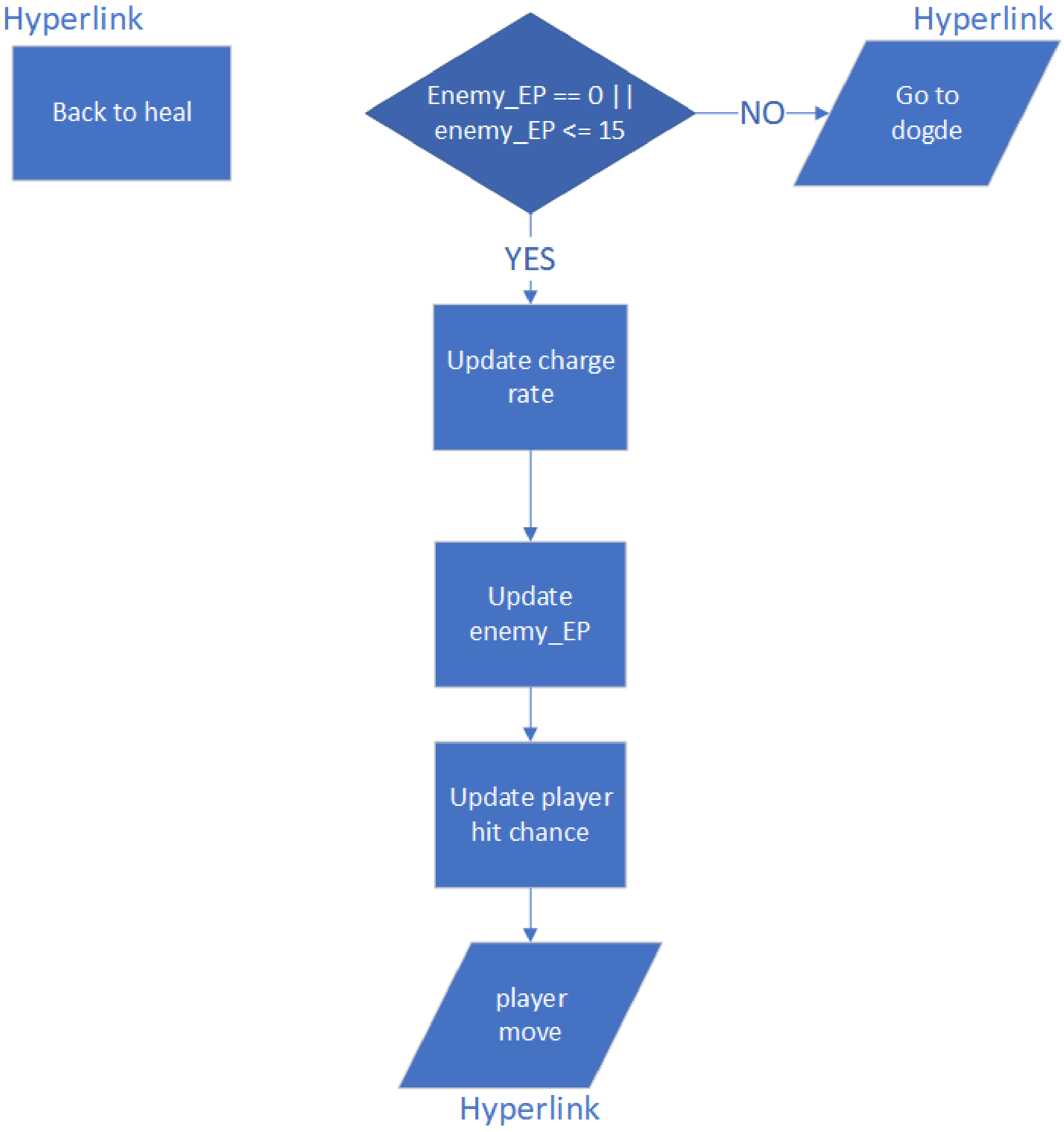
This flow chart calculates when the enemy would use special attack. For 'go to re-charge' refer to **picture 9.** For 'player move' refer to **picture 2.** For 'back to heal' refer to **picture 11.**

Picture 8


Hyperlink
Back to heal
Player used re-charge? || player_HP <= special_attack_dmg?
NO
Go to re-charge
Hyperlink
YES
enemy_EP >= special_attack_EP ?
NO
Enemy_EP >= normal_attack_EP
I make this check, because when re-charge is used the hit chance is different
YES
YES
Go to normal attack
Hyperlink
NO
player used re-charge?
NO
YES
Enemy_EP < normal_attack_EP && enemy_EP >= dogde_EP
YES
Update enemy hit chance
Go to dogde
Hyperlink
NO
Display message of the move
Update enemy_EP
NO
Hit chance in the range ?
Enemy_EP < normal_attack_EP && enemy_EP < dogde_EP
YES
Update enemy_EP and player_HP
Go to re-charge
Hyperlink
Display hit message
Same check for the dogde
NO
Enemy used dogde?
YES
player move
Hyperlink

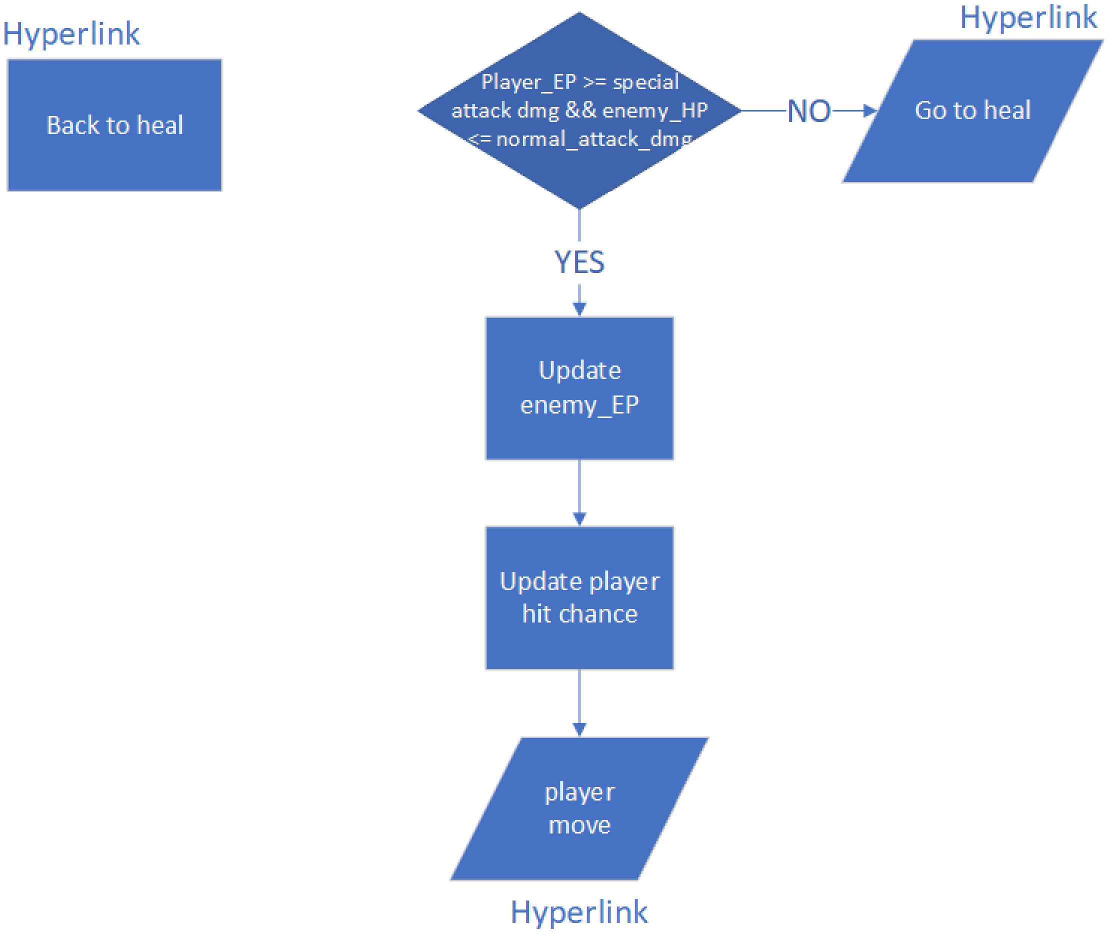
This flow chart calculates when the enemy would use re-charge. For ‘go to dogde’ refer to **picture 10**. For ‘back to heal’ refer to **picture 11**.

Picture 9



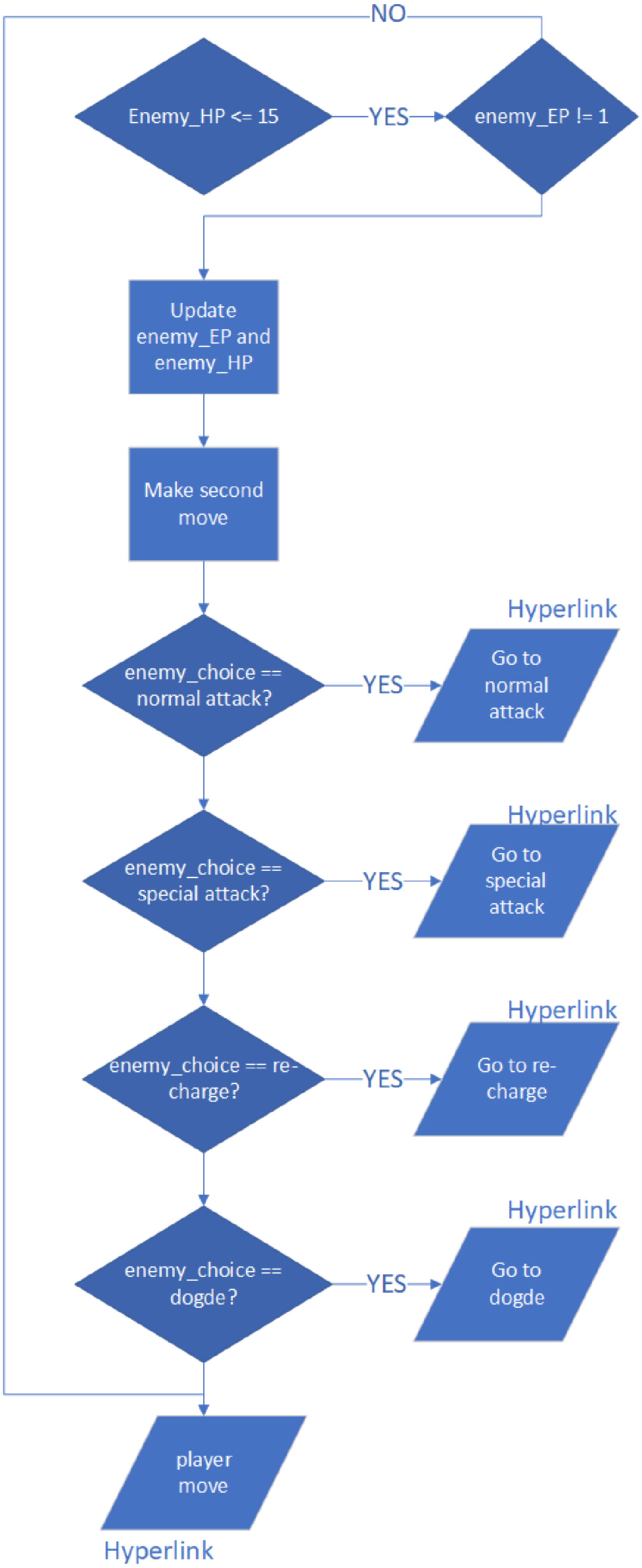
This flow chart shows when the enemy would use dogde. For ‘back to heal’ and ‘go to heal’ refer to **picture 11.** For ‘player move’ refer to **picture 2.**

Picture 10



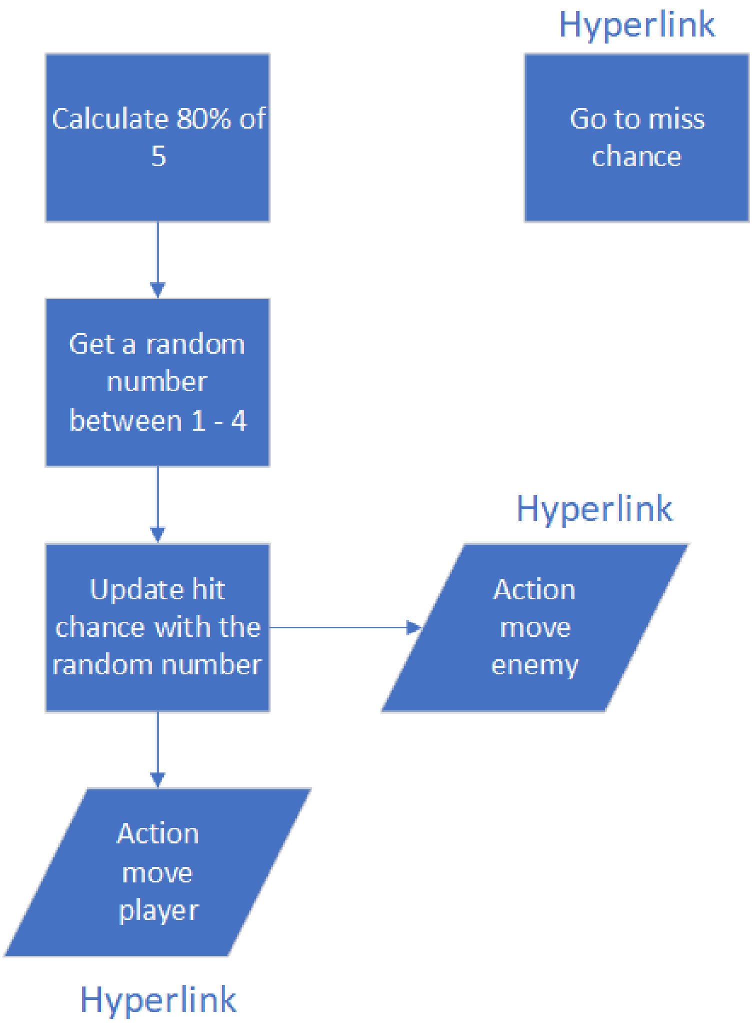
This flow chart shows when the enemy would use heal. For ‘go to normal attack’ refer to **picture 7**. For ‘go to special attack’ refer to **picture 8**. For ‘go to re-charge’ refer to **picture 9**. For ‘go to dogde’ refer to **picture 10**. For ‘player move’ refer to **picture 2**.

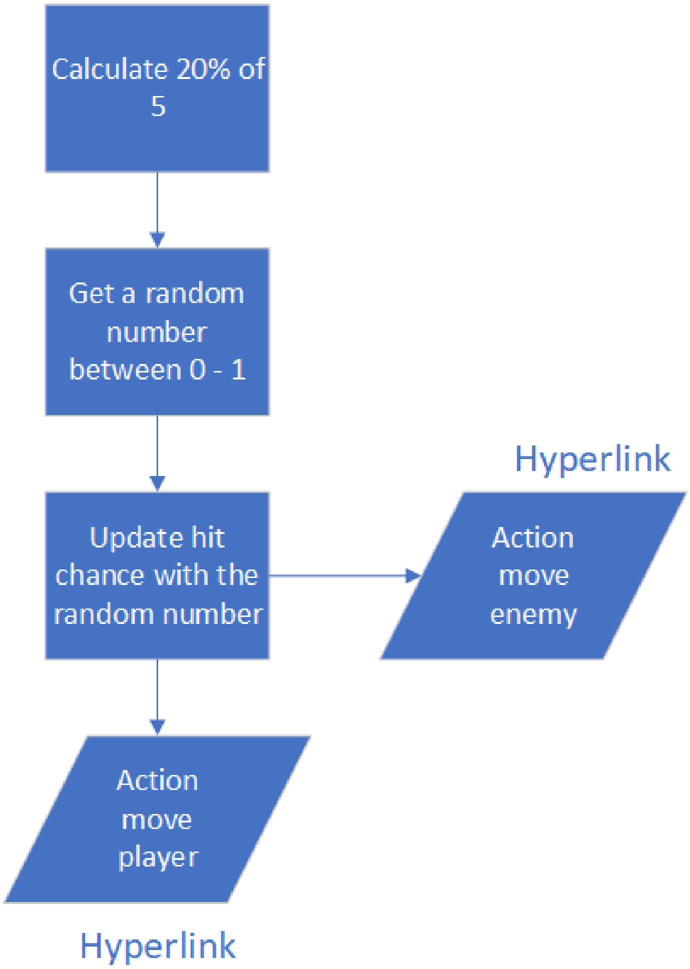
Picture 11



Picture 12

This flow chart calculates the hit chance when normal attack is used. For ‘action move enemy’ refer to **picture 7**. For ‘action move player’ refer to **picture 2**.

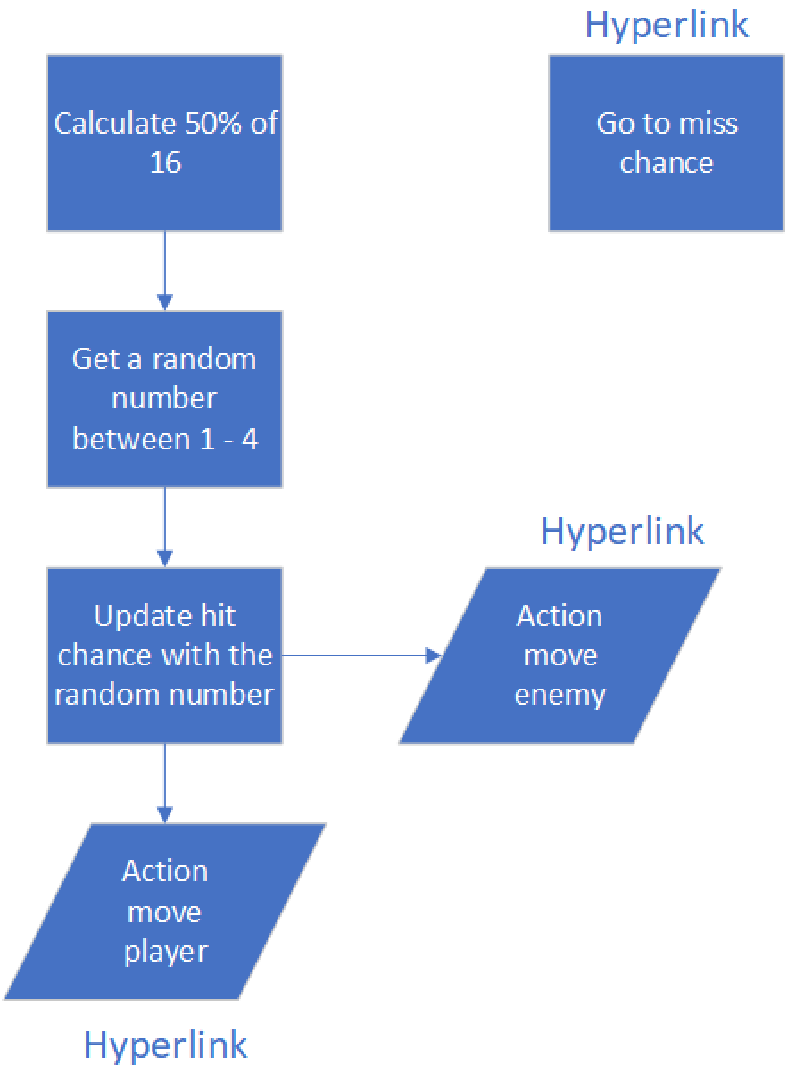


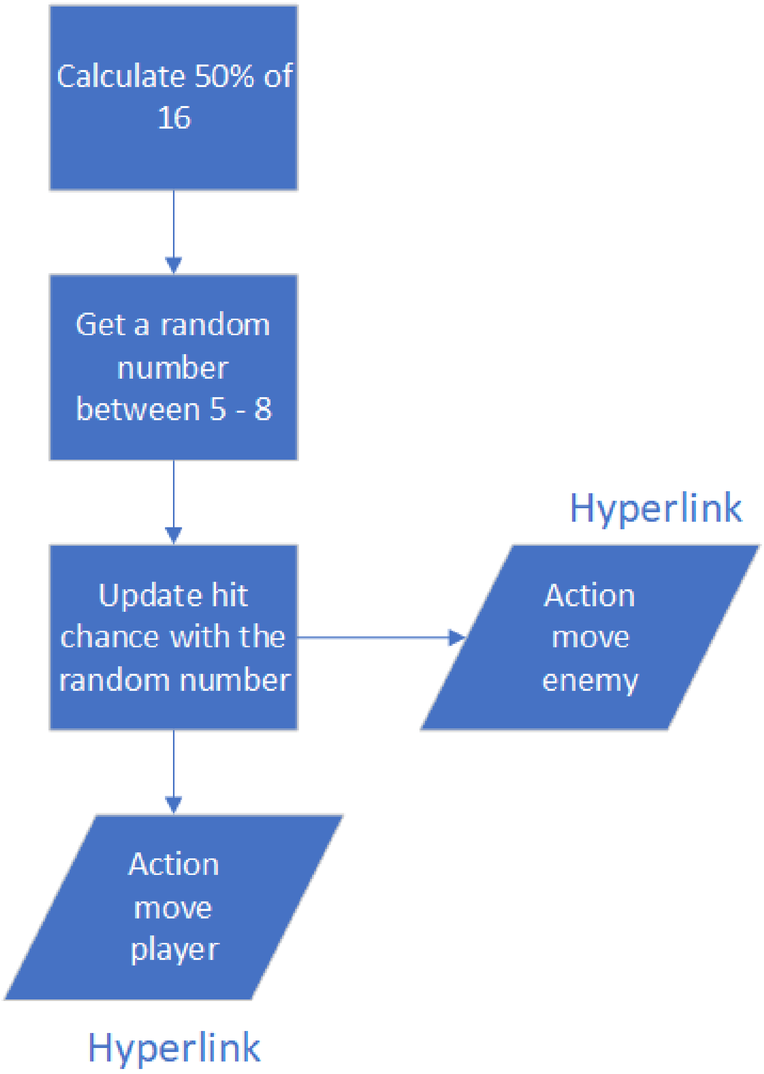

Calculate 20% of 5
Get a random number between 0 - 1
Update hit chance with the random number
Action move enemy
Hyperlink
Action move player
Hyperlink

This flow chart calculates the miss chance when normal attack is used.

Picture 13

This flow chart calculates the hit chance for special attack. For ‘action move player’ refer to **picture 3**. For ‘action move enemy’ refer to **picture 8.**

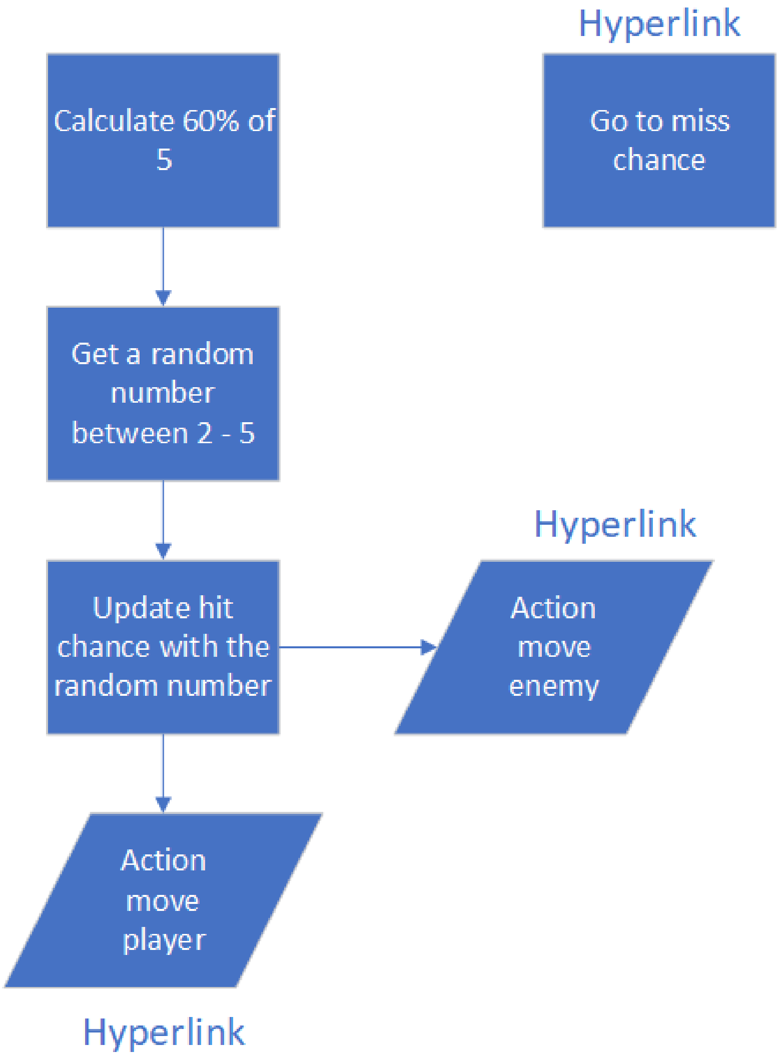



Calculate 50% of 16
Get a random number between 5 - 8
Hyperlink
Update hit chance with the random number
Action move enemy
Action move player
Hyperlink

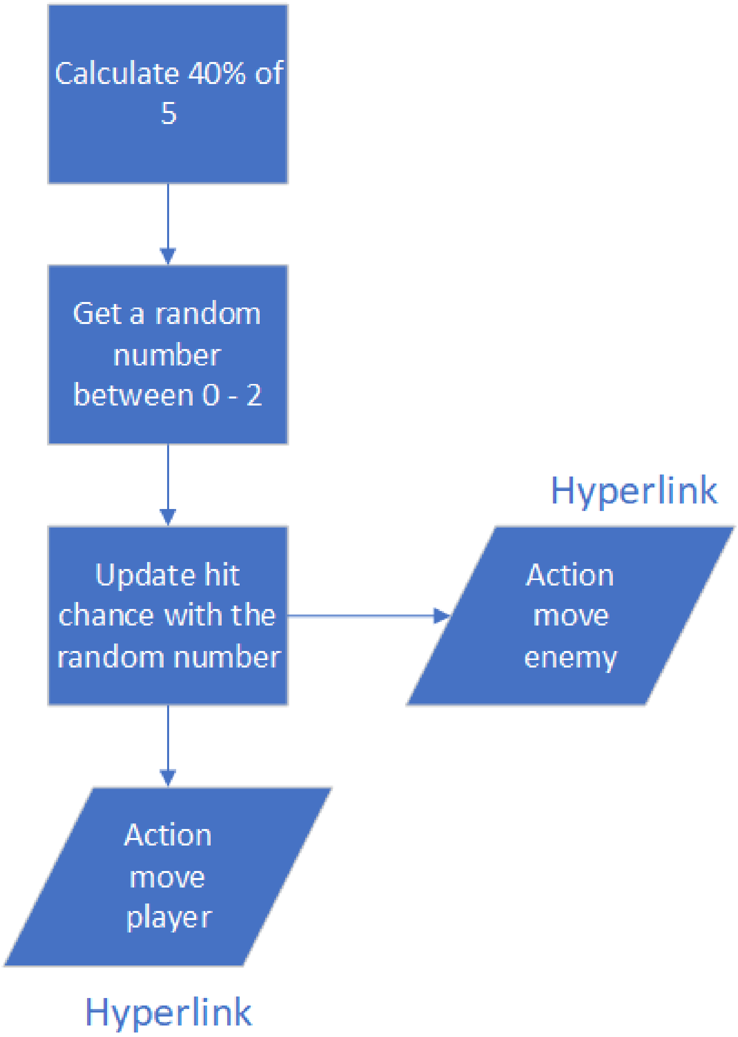
This flow chart calculates the miss chance for special attack.

Picture 14

This flow chart calculates the hit chance for normal attack after re-charge was used.

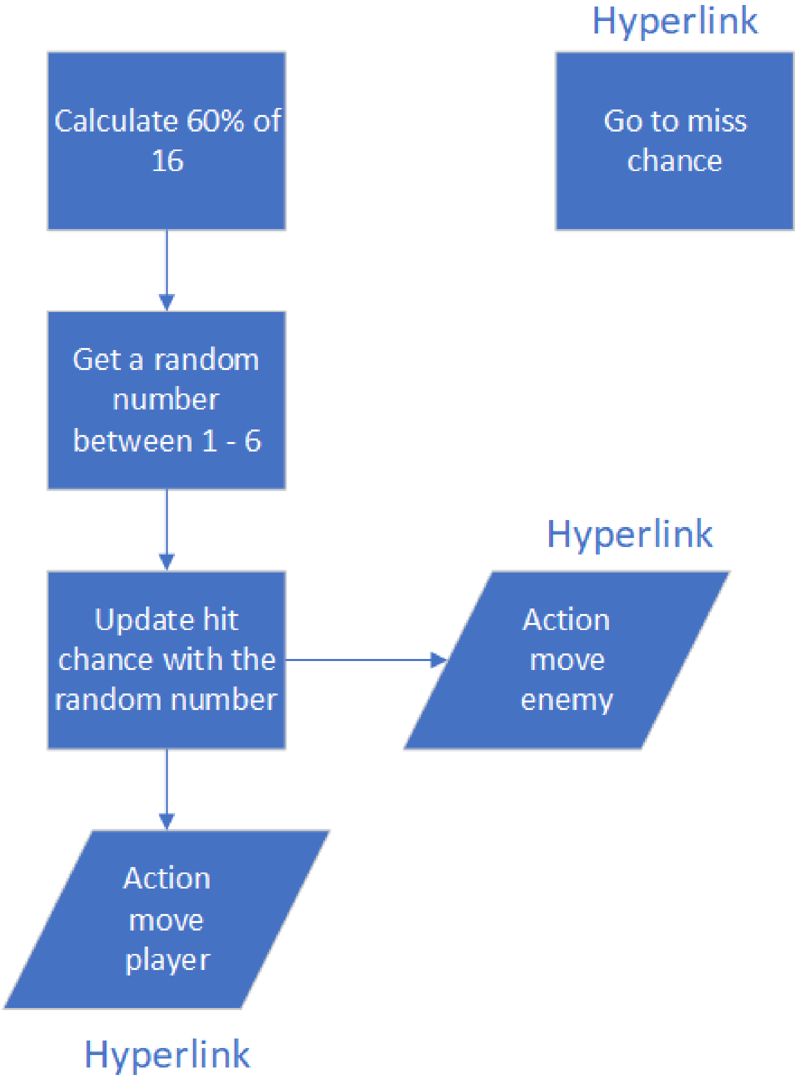


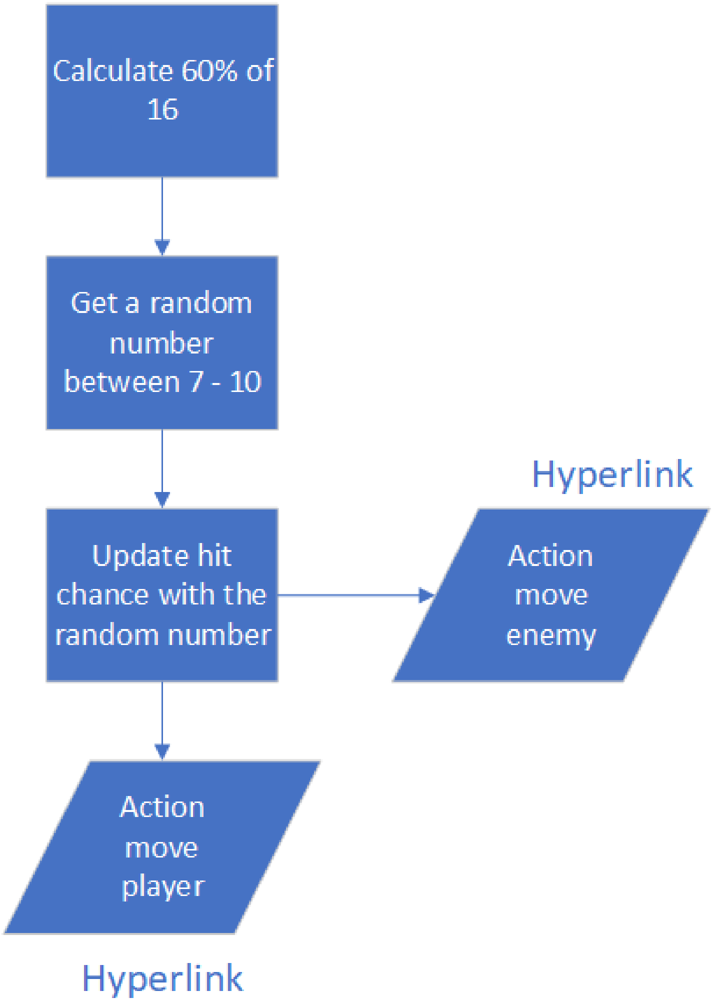
This flow chart calculates the miss chance.


Calculate 40% of 5
Get a random number between 0 - 2
Update hit chance with the random number
Hyperlink
Action move enemy
Action move player
Hyperlink

Picture 15

This flow chart calculates the hit chance for the special attack when re-charge is used.

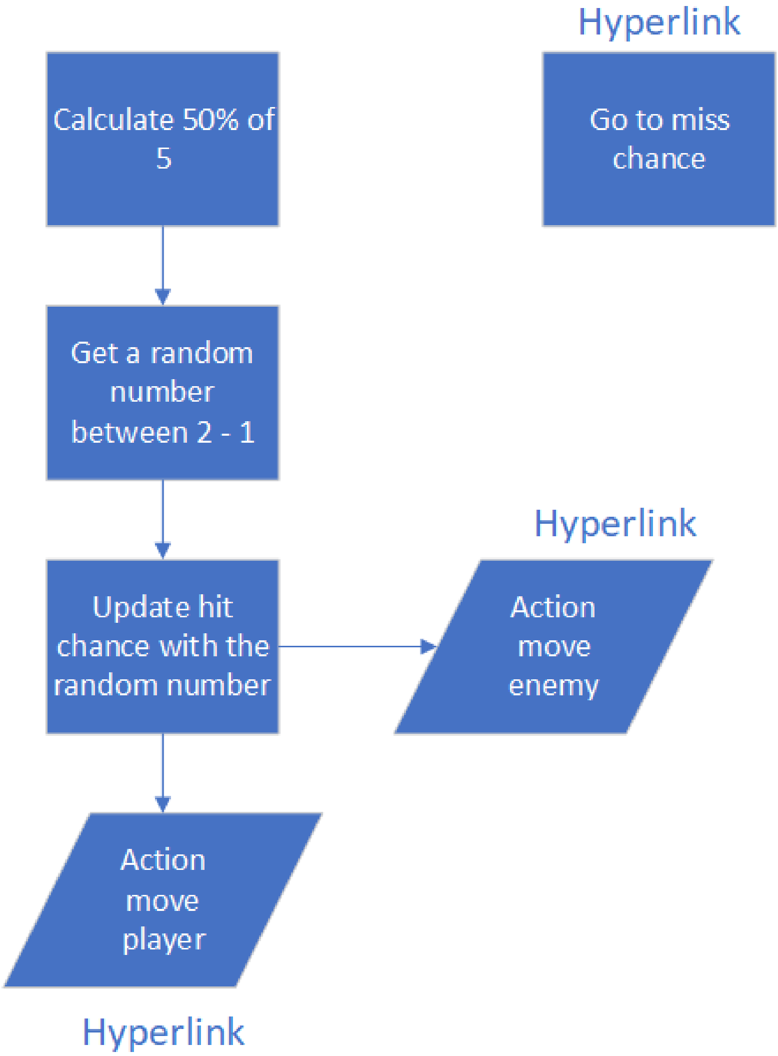


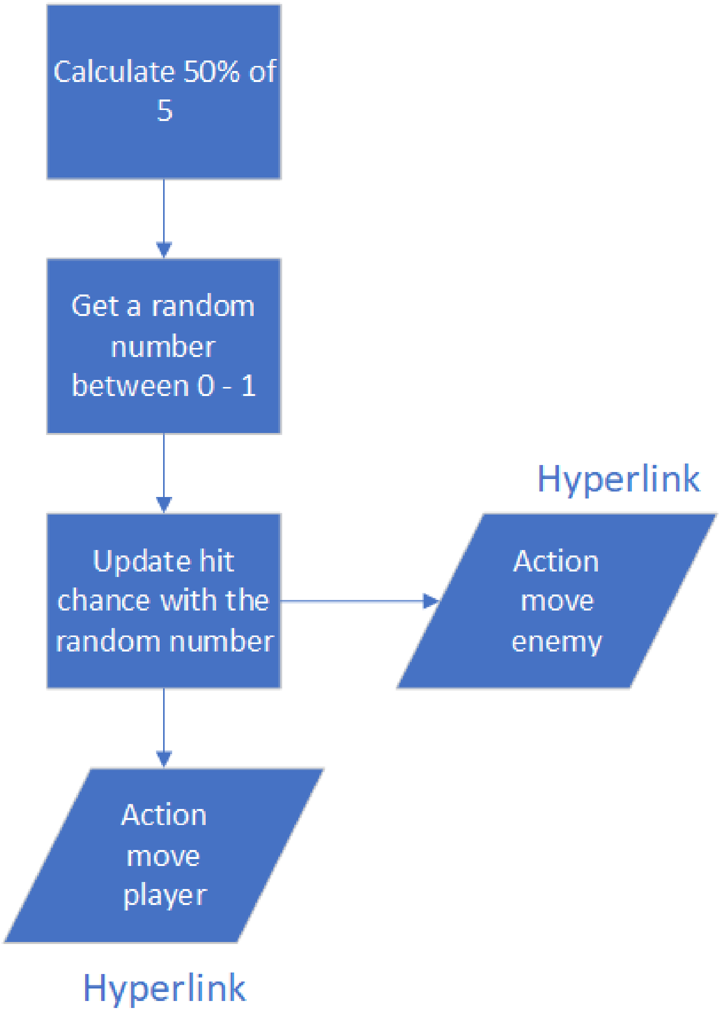

Calculate 60% of 16
Get a random number between 7 - 10
Update hit chance with the random number
Action move enemy
Hyperlink
Action move player
Hyperlink

This flow chart calculates the miss chance.

Picture 16

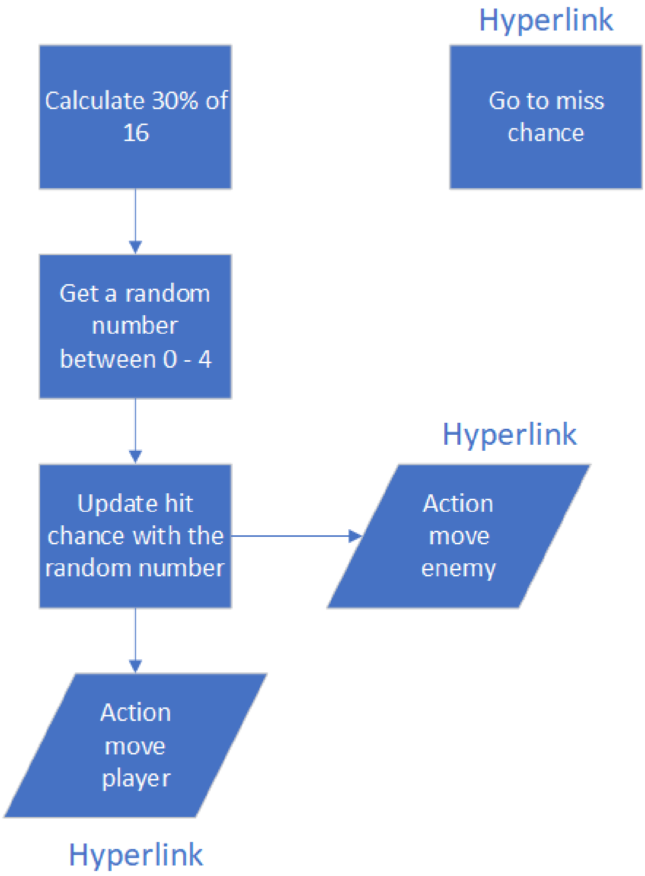
This flow chart calculates the hit chance for normal attack when dogde is used.

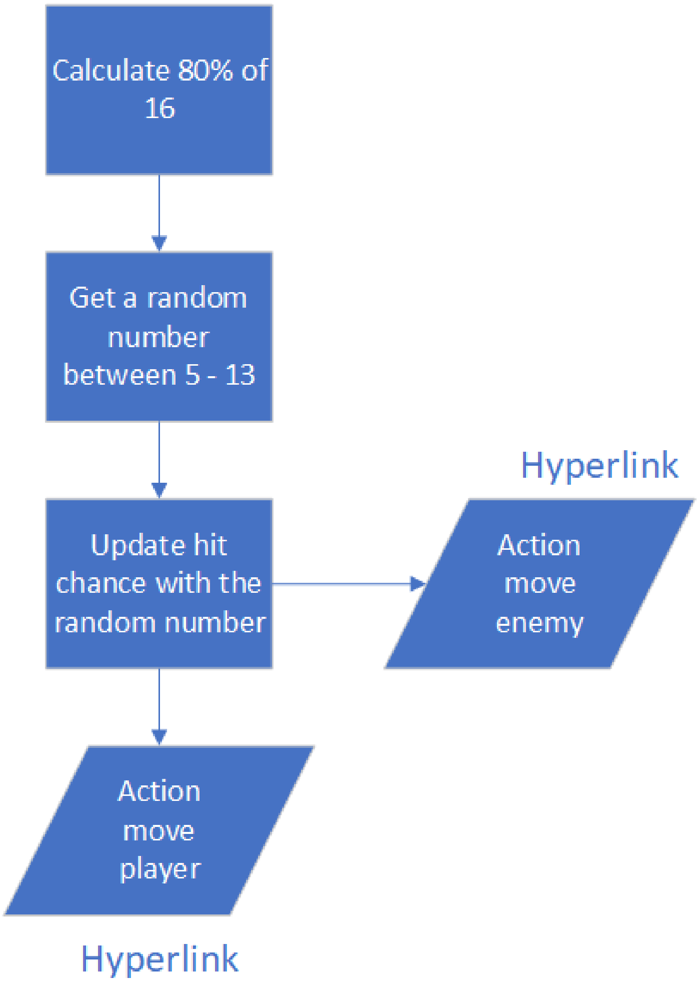



Calculate 50% of 5
Get a random number between 0 - 1
Update hit chance with the random number
Action move enemy
Hyperlink
Action move player
Hyperlink

Picture 17

This flow chart calculates the hit chance for special attack after dogde was used.




Calculate 80% of 16
Get a random number between 5 - 13
Update hit chance with the random number
Action move enemy
Hyperlink
Action move player
Hyperlink

This flow chart calculates the miss chance.

IMPLEMENTATION

I. Player Input

For the player input I create one char named ‘player_choice’, which holds the player`s choice of action move. Then I create five more chars (player_choice_1-5) which hold each move. That way when I check which action move the player has chosen, magic numbers won`t be used, because I compare if player_choice == player_choice_1-5. I use **if-else if** structure.

II. Enemy Input

It is based on what move the player did before that and what stats the enemy and the player have. I make a number of checks before making the enemy move. **If-else if** structure is used

III. Attack moves player/enemy

- **Normal attack and special attack (because the logic is the same)**
  Before making the move I use **if statement** to check which one of the 2 attacks is chosen. Then I make another **if statement** to check if the EP is enough. Then I make yet another **if statement** to check if the enemy/player had <u>used re-charge or dogde,</u> because the hit and the miss chance will change, if the enemy/player had. If the statement is <u>false</u> I call a function, which calculates the attack and the hit and miss chance for it then I make **if statement** to check if the hit and miss chance are in the range to determine if the attack is successful or not. If it`s <u>true</u> I call another function which calculates the updated hit and miss chance and the same process is repeated.
- **Re-charge**

  Firstly I make **if statement** to check if this action move is used. Then I call a function that calculates the re-charge move. After that I call four function, which calculate the hit chance after re-charge is used and the miss chance for both the normal and the special attack.

- **Dogde**

Firstly I make **if statement** to check if this action is used. Then I call four functions which calculate the hit and the miss chance for both the normal attack and special attack.

- **Heal**

  First I make **if statement** to check if this action is used. Then I call a function which calculates the heal move. After that I make the second move for the player/enemy and repeat the same logic depending what the second move is.

IV. Functions player/enemy

- **Normal and special attack**

  This function, for the special and normal attack, applies the dmg, the EP cost and return the updated enemy/player HP, EP and after the attack is done adds the EP charge rate to the player/enemy EP.

- **Re-charge**

  This function updates the player/enemy EP charge rate. Then it adds the updated EP charge rate to the player/enemy current EP and returns the updated EP.

- **Dogde**

  This function calculates the updated hit and miss chance for the normal and special attack and returns the updated range and after the attack is done adds the EP charge rate to the player/enemy EP.

- **Heal**

  This function divides the current player/enemy EP in half and adds that result to the player/enemy HP. Then it adds the EP charge rate to the updated player/enemy EP and then returns the updated HP and EP.

TEST PLANNING AND TESTING

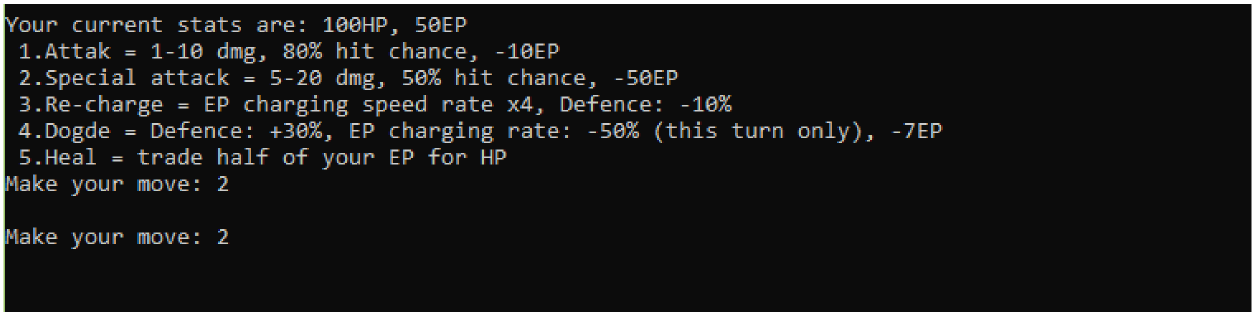
I. Test plan

- Main menu
- Displaying options
- Attacking
- Damage resolution
- Game conclusion

II. Testing

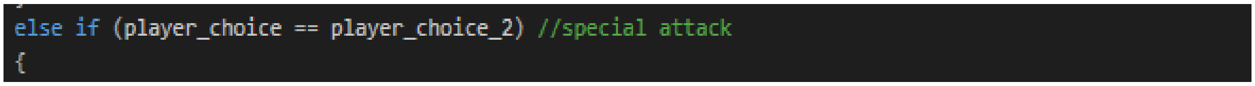
Fortunately my design and analysis was done correctly and beforehand so I didn’t come across many mistakes and errors. However, I did make some minor ones.

- The first error was when the player wanted to do special attack



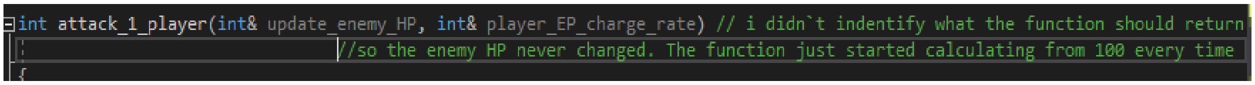
```
Your current stats are: 100HP, 50EP
 1.Attak = 1-10 dmg, 80% hit chance, -10EP
 2.Special attack = 5-20 dmg, 50% hit chance, -50EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP
Make your move: 2

Make your move: 2
```

It simply did nothing (keep in mind that on this stage I still haven’t made the enemy logic). The solution was really simple. It was a typo. On the second choice for the player I wrote ‘player_choice == player_choice’ instead of ‘player_choice == player_choice_2’, like this:



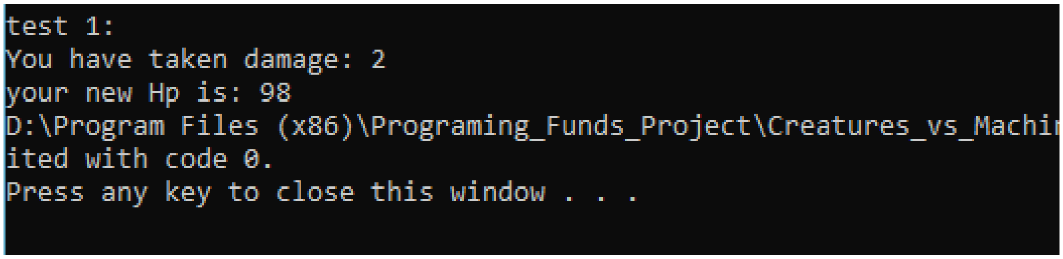
```
else if (player_choice == player_choice_2) //special attack
{
```

- The second error I had was that every time an attack was used the HP didn’t change it always showed 100HP.



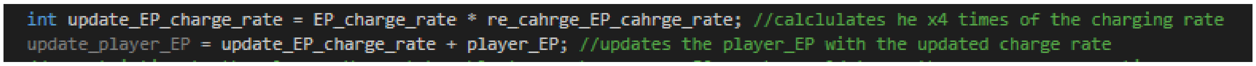
```
int attack_1_player(int& update_enemy_HP, int& player_EP_charge_rate) // i didn`t indentify what the function should return
                                                //so the enemy HP never changed. The function just started calculating from 100 every time
{
```

To fix this I had to add another variable which holds the updated HP after the attack. Then parse the updated HP to that variable. Finally I had to change what the function returns, because it had to return the updated HP and EP and it worked fine.



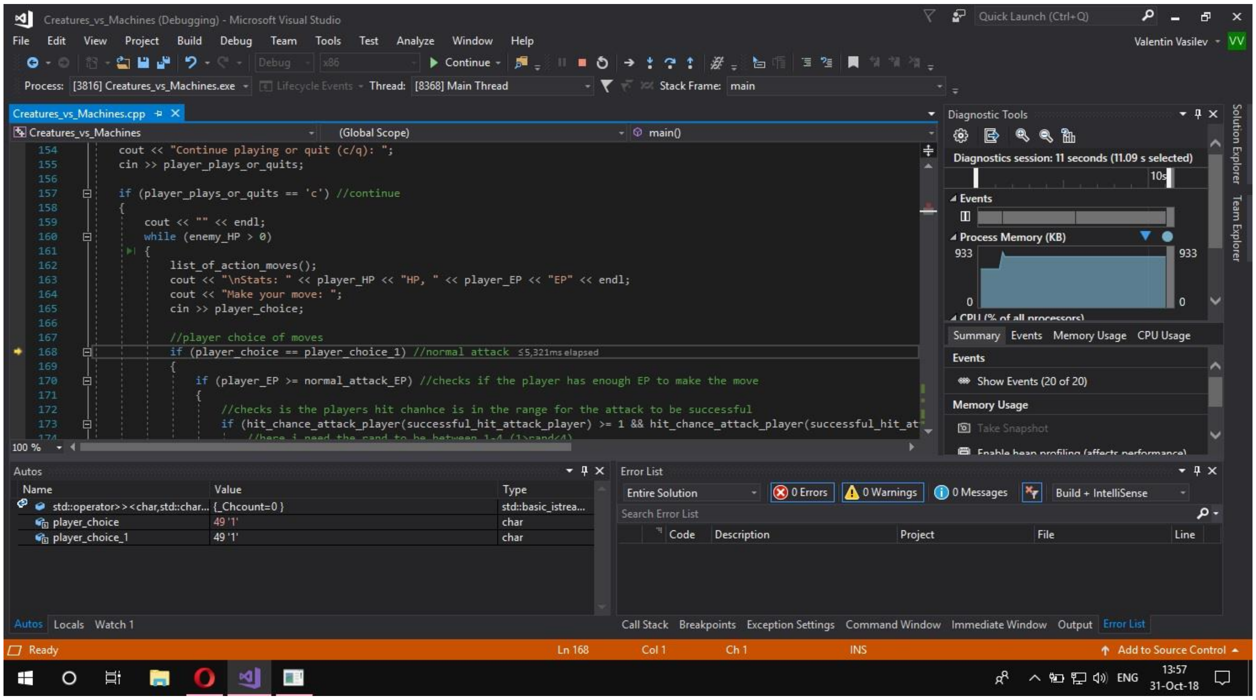
```
test 1:
You have taken damage: 2
your new Hp is: 98
D:\Program Files (x86)\Programing_Funds_Project\Creatures_vs_Machi
ited with code 0.
Press any key to close this window . . .
```

- Third error was with the EP change after re-charge. It applied the calculations but they weren't for only one turn. After this move was used it just updated the EP charge rate and kept using the updated charge rate instead of the normal one. Again I had to make another variable in the function that stores the updated EP charge rate and use it only ones when that function is called.



```
int update_EP_charge_rate = EP_charge_rate * re_cahrge_EP_cahrge_rate; //calclulates he x4 times of the charging rate
update_player_EP = update_EP_charge_rate + player_EP; //updates the player_EP with the updated charge rate
```

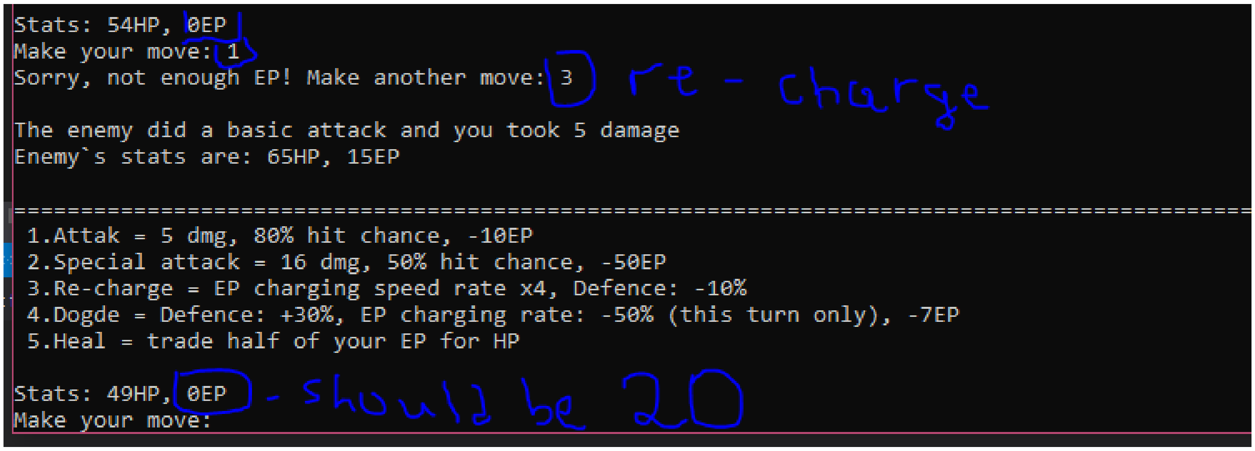
- After that an error accrued again with the re-charge. It was difficult to track it down so I had to use the de-bugger. The problem was that when the enemy or the player have 0EP the re-charge didn't apply the changes.



Creatures_vs_Machines (Debugging) - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Valentin Vasilev
Debug x86 Continue
Process: [3816] Creatures_vs_Machines.exe
Lifecycle Events
Thread: [8368] Main Thread
Stack Frame: main
Creatures_vs_Machines.cpp
Creatures_vs_Machines
(Global Scope)
main()
100 %
Diagnostic Tools
Diagnostics session: 11 seconds (11.09 s selected)
10s
Events
Process Memory (KB)
933
0
CPU (% of all processors)
Summary Events Memory Usage CPU Usage
Show Events (20 of 20)
Memory Usage
Take Snapshot
Enable heap profiling (affects performance)
Solution Explorer
Team Explorer
Autos
Error List
Entire Solution
0 Errors
0 Warnings
0 Messages
Build + IntelliSense
Search Error List
Code Description Project File Line
Autos Locals Watch 1
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Error List
Ready
Ln 168 Col 1 Ch 1 INS
Add to Source Control
ENG
13:57
31-Oct-18

```
    cout << "Continue playing or quit (c/q): ";
    cin >> player_plays_or_quits;

    if (player_plays_or_quits == 'c') //continue
    {
        cout << "" << endl;
        while (enemy_HP > 0)
        {
            list_of_action_moves();
            cout << "\nStats: " << player_HP << "HP, " << player_EP << "EP" << endl;
            cout << "Make your move: ";
            cin >> player_choice;

            //player choice of moves
            if (player_choice == player_choice_1) //normal attack ≤5,321ms elapsed
            {
                if (player_EP >= normal_attack_EP) //checks if the player has enough EP to make the move
                {
                    //checks is the players hit chanhce is in the range for the attack to be successful
                    if (hit_chance_attack_player(successful_hit_attack_player) >= 1 && hit_chance_attack_player(successful_hit_at
                        //here i need the rand to be between 1-4 (1>rand<4)
```

Name	Value	Type
std::operator>><char,std::char...	{_Chcount=0 }	std::basic_istrea...
player_choice	49 '1'	char
player_choice_1	49 '1'	char



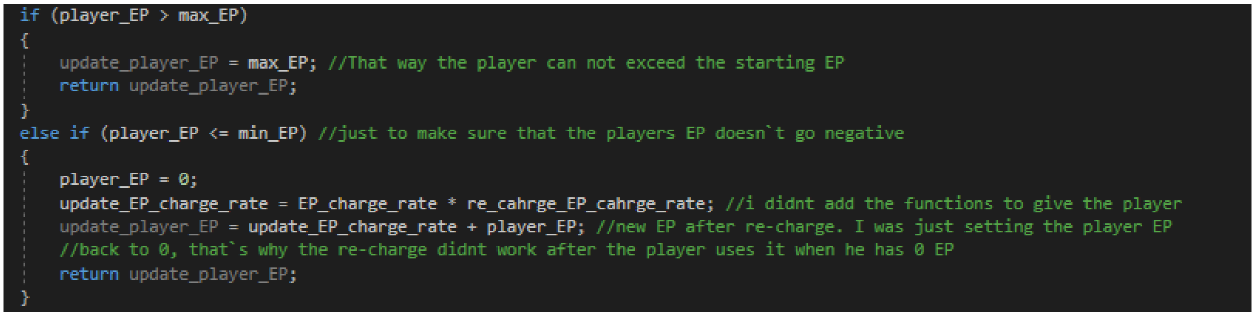
```
Stats: 54HP, 0EP
Make your move: 1
Sorry, not enough EP! Make another move: 3

The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 65HP, 15EP

==========================================================================================
 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -50EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 49HP, 0EP
Make your move:
```

re - charge

- should be 20

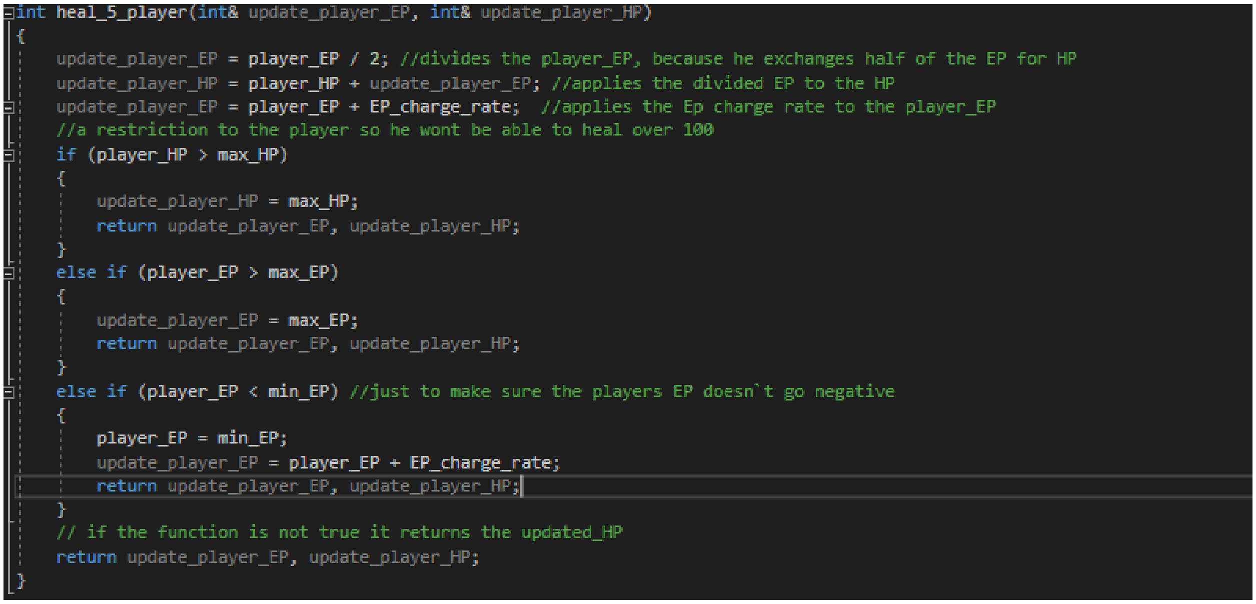
This problem was presented because the re-charge function didn’t know what to do when the EP was 0 or above 50. To fix this I added two **if statements.** The first one checks if the player EP is above 50 and sets it back to normal (50EP). The second one checks if the player EP is 0 or less, then sets it back to normal (0EP) then updates the EP charge rate and applies it to the EP.

Because of this problem I figured out that I have to add one **if statement** for the EP in every action move function body, because if the EP is <= 0 the EP charge rate wont apply.



```
if (player_EP > max_EP)
{
    update_player_EP = max_EP; //That way the player can not exceed the starting EP
    return update_player_EP;
}
else if (player_EP <= min_EP) //just to make sure that the players EP doesn`t go negative
{
    player_EP = 0;
    update_EP_charge_rate = EP_charge_rate * re_cahrge_EP_cahrge_rate; //i didnt add the functions to give the player
    update_player_EP = update_EP_charge_rate + player_EP; //new EP after re-charge. I was just setting the player EP
    //back to 0, that`s why the re-charge didnt work after the player uses it when he has 0 EP
    return update_player_EP;
}
```

This error also led me to the conclusion that the same thing may happen with the HP. We know that there is a rule that prohibits the player to exceed the starting HP, so I tested it and there were no restrictions. To fix that again I used two **if statements** in the Heal function to check if the player HP is <= 0 or above 100.

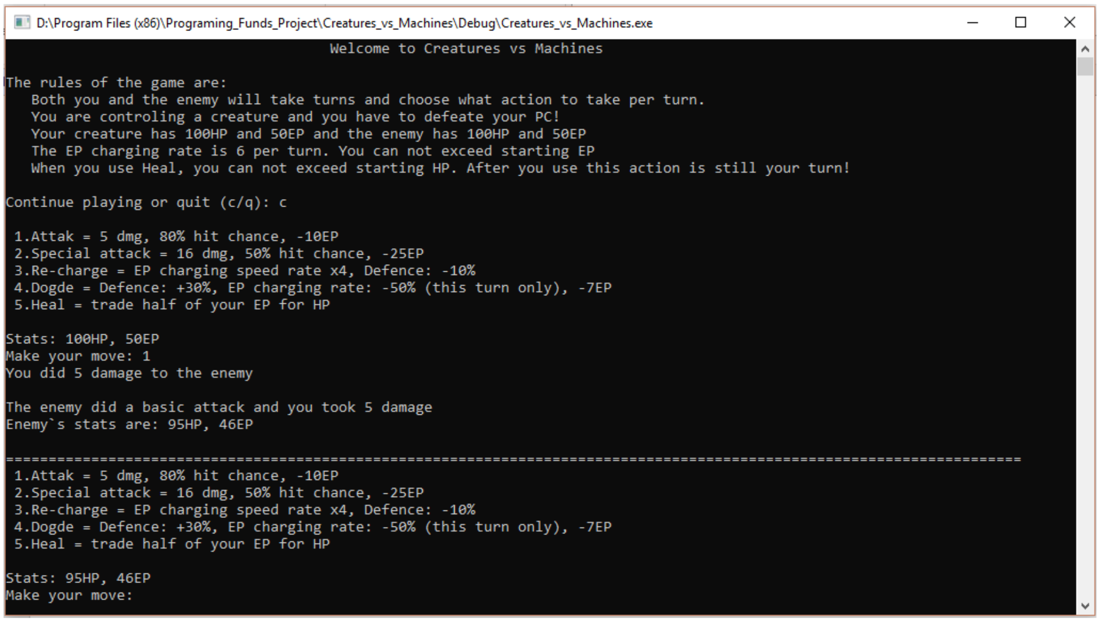


```
int heal_5_player(int& update_player_EP, int& update_player_HP)
{
    update_player_EP = player_EP / 2; //divides the player_EP, because he exchanges half of the EP for HP
    update_player_HP = player_HP + update_player_EP; //applies the divided EP to the HP
    update_player_EP = player_EP + EP_charge_rate;  //applies the Ep charge rate to the player_EP
    //a restriction to the player so he wont be able to heal over 100
    if (player_HP > max_HP)
    {
        update_player_HP = max_HP;
        return update_player_EP, update_player_HP;
    }
    else if (player_EP > max_EP)
    {
        update_player_EP = max_EP;
        return update_player_EP, update_player_HP;
    }
    else if (player_EP < min_EP) //just to make sure the players EP doesn`t go negative
    {
        player_EP = min_EP;
        update_player_EP = player_EP + EP_charge_rate;
        return update_player_EP, update_player_HP;
    }
    // if the function is not true it returns the updated_HP
    return update_player_EP, update_player_HP;
}
```

- **White box testing**

Action	Expected result
Start of the game	Display the rules and the possible action moves
Player input = '1'	Player stats; Normal attack; Enemy attack; Enemy stats
Player input = '2'	Player stats; Special attack; Enemy attack; Enemy stats
Player input = '3'	Player stats; Informative message; Enemy attack; Enemy stats
Player input = '4'	Player stats; Informative message; Enemy attack; Enemy stats
Player input = '5'	Player stats; New stats; Message for second move;
Second move after heal	Gets second move; Shows second move; Shows enemy attack; Enemy stats;

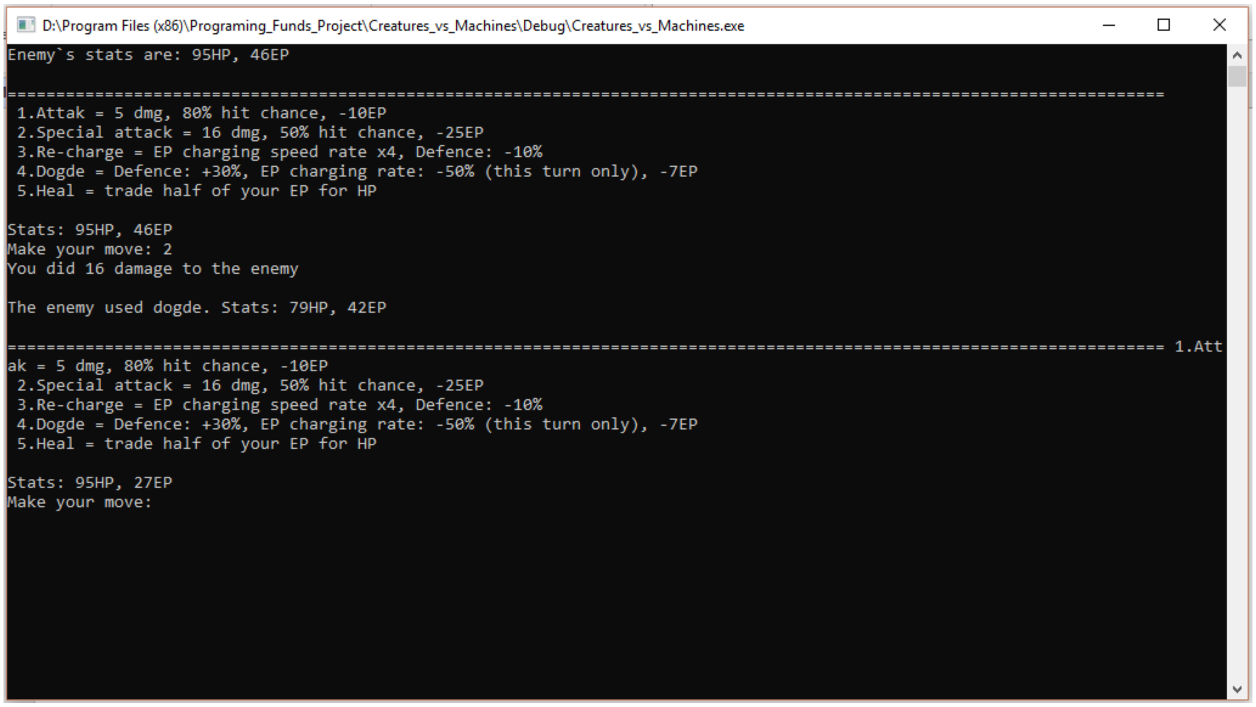
Normal attack:



D:\Program Files (x86)\Programing_Funds_Project\Creatures_vs_Machines\Debug\Creatures_vs_Machines.exe

```
                                      Welcome to Creatures vs Machines

The rules of the game are:
   Both you and the enemy will take turns and choose what action to take per turn.
   You are controling a creature and you have to defeate your PC!
   Your creature has 100HP and 50EP and the enemy has 100HP and 50EP
   The EP charging rate is 6 per turn. You can not exceed starting EP
   When you use Heal, you can not exceed starting HP. After you use this action is still your turn!

Continue playing or quit (c/q): c

 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 100HP, 50EP
Make your move: 1
You did 5 damage to the enemy

The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 95HP, 46EP

=======================================================================================================================
 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 95HP, 46EP
Make your move:
```

Special attack: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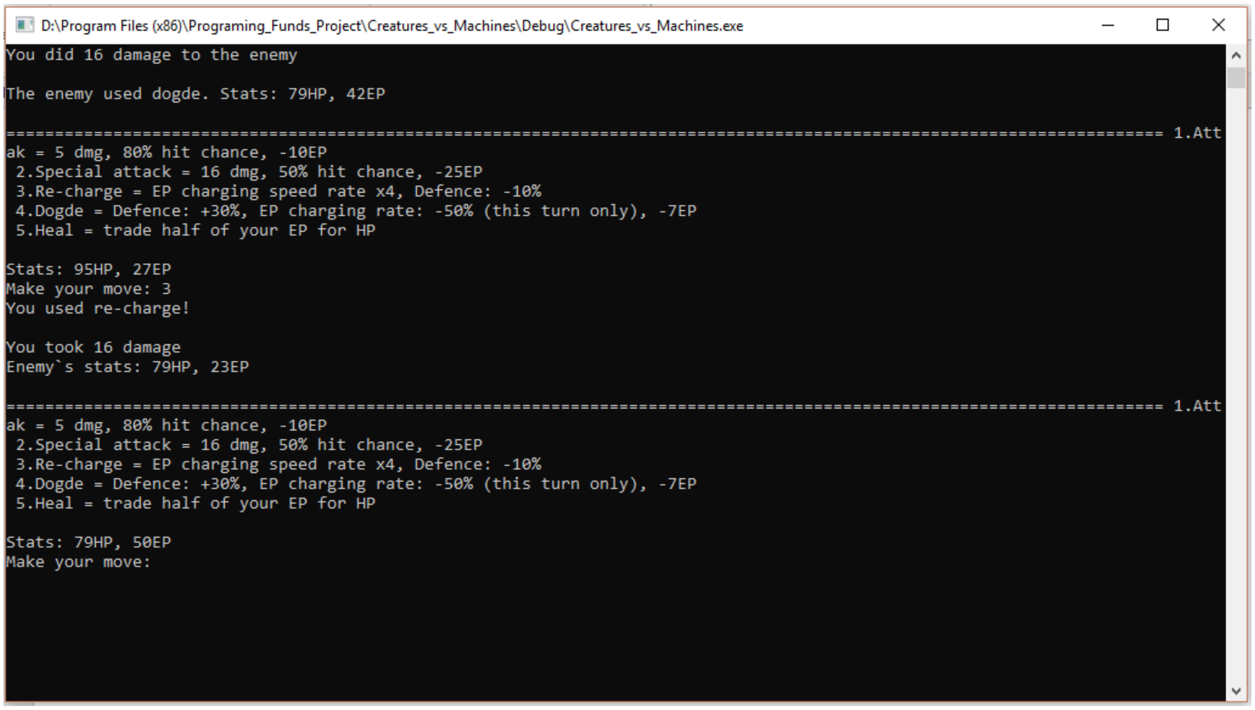
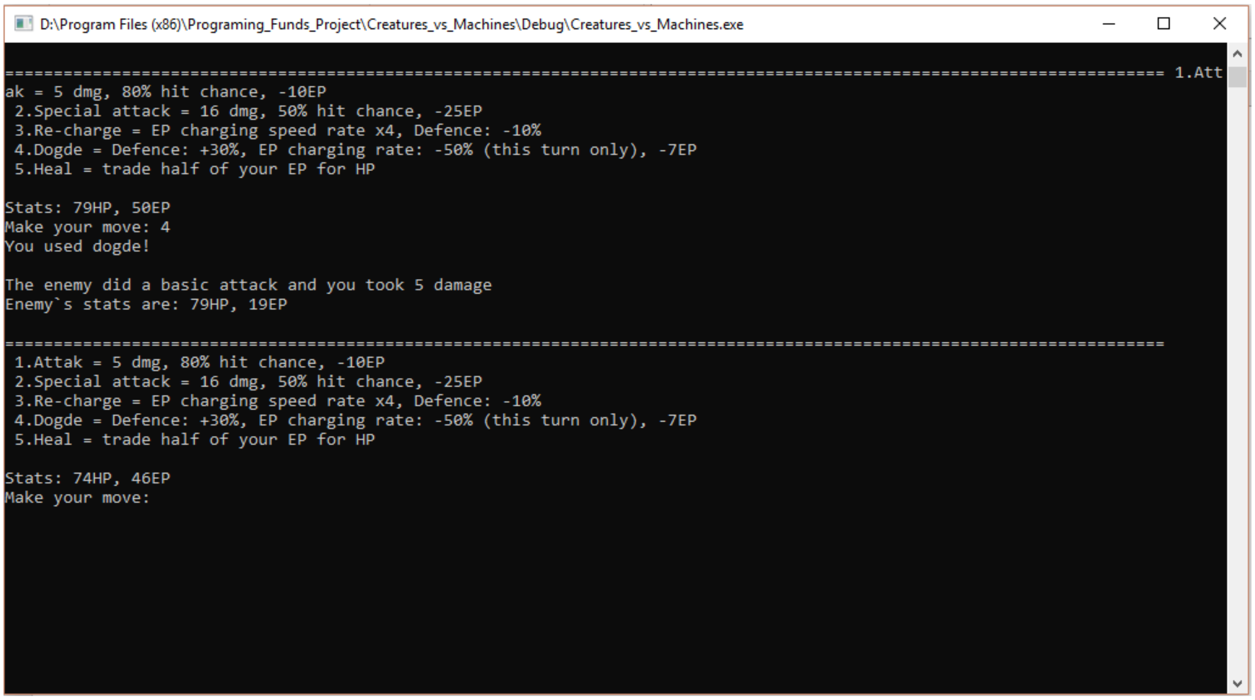
```
Enemy`s stats are: 95HP, 46EP

=======================================================================================================================
 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 95HP, 46EP
Make your move: 2
You did 16 damage to the enemy

The enemy used dogde. Stats: 79HP, 42EP

======================================================================================================================= 1.Att
ak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 95HP, 27EP
Make your move:
```

Re-charge:


D:\Program Files (x86)\Programing_Funds_Project\Creatures_vs_Machines\Debug\Creatures_vs_Machines.exe

```
You did 16 damage to the enemy

The enemy used dogde. Stats: 79HP, 42EP

======================================================================================================================= 1.Att
ak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 95HP, 27EP
Make your move: 3
You used re-charge!

You took 16 damage
Enemy`s stats: 79HP, 23EP

======================================================================================================================= 1.Att
ak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 79HP, 50EP
Make your move:
```

Dogde:



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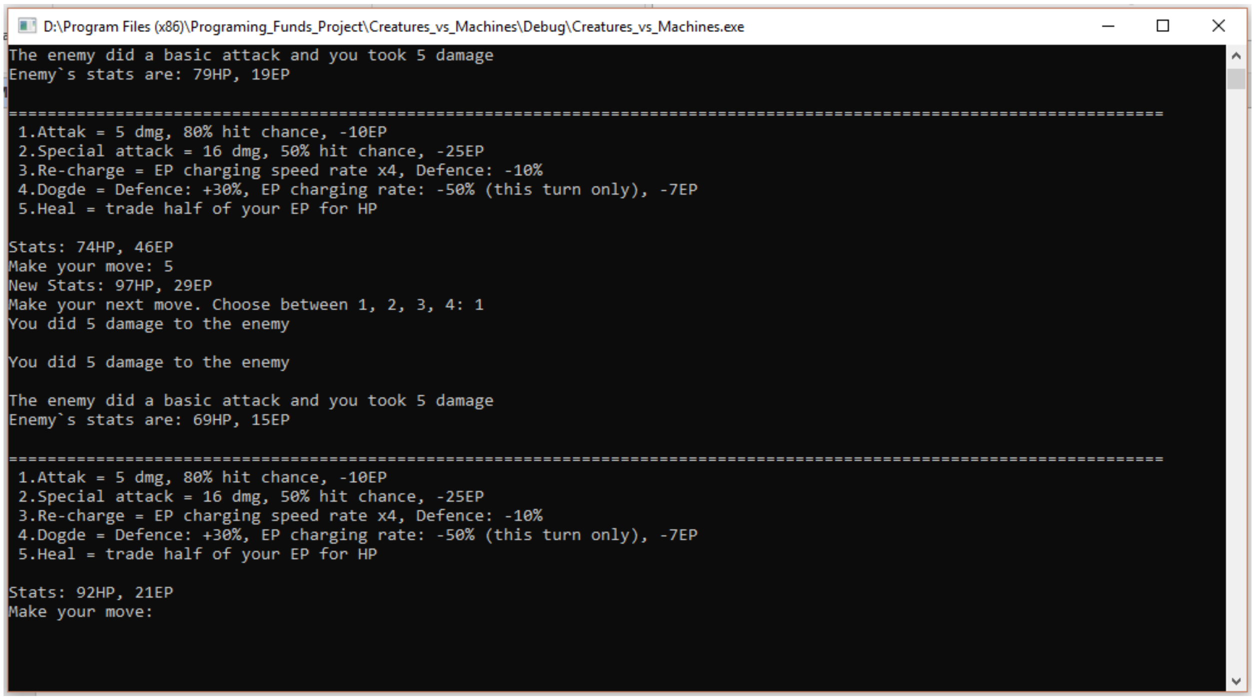
```
======================================================================================================================== 1.Att
ak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 79HP, 50EP
Make your move: 4
You used dogde!

The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 79HP, 19EP

========================================================================================================================
 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 74HP, 46EP
Make your move:
```

Heal and the second move:



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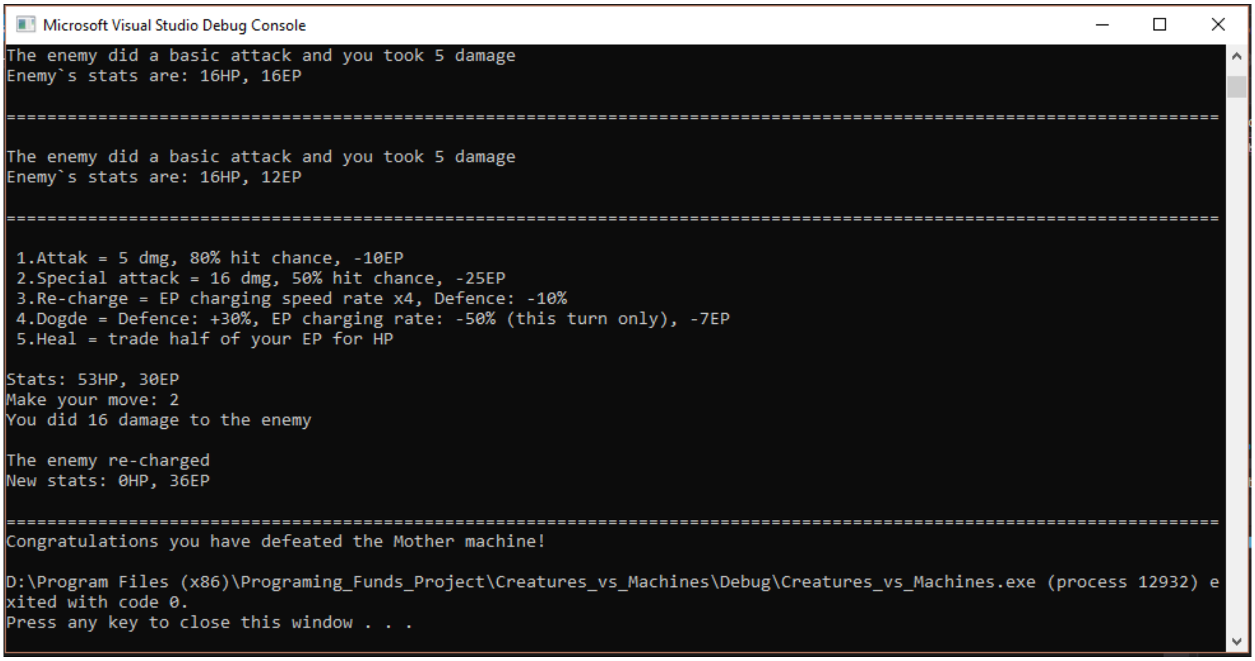
```
The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 79HP, 19EP

========================================================================================================================
 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 74HP, 46EP
Make your move: 5
New Stats: 97HP, 29EP
Make your next move. Choose between 1, 2, 3, 4: 1
You did 5 damage to the enemy

You did 5 damage to the enemy

The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 69HP, 15EP

========================================================================================================================
 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 92HP, 21EP
Make your move:
```

Winner:



```
The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 16HP, 16EP

========================================================================================================================

The enemy did a basic attack and you took 5 damage
Enemy`s stats are: 16HP, 12EP

========================================================================================================================

 1.Attak = 5 dmg, 80% hit chance, -10EP
 2.Special attack = 16 dmg, 50% hit chance, -25EP
 3.Re-charge = EP charging speed rate x4, Defence: -10%
 4.Dogde = Defence: +30%, EP charging rate: -50% (this turn only), -7EP
 5.Heal = trade half of your EP for HP

Stats: 53HP, 30EP
Make your move: 2
You did 16 damage to the enemy

The enemy re-charged
New stats: 0HP, 36EP

========================================================================================================================
Congratulations you have defeated the Mother machine!

D:\Program Files (x86)\Programing_Funds_Project\Creatures_vs_Machines\Debug\Creatures_vs_Machines.exe (process 12932) e
xited with code 0.
Press any key to close this window . . .
```

The program completely follows and fulfils the testing plan therefore no more testing is needed.