

```
1  #include "Character.h"
2
3  Character::Character()
4  {
5      this->xPos = 0.0;
6      this->yPos = 0.0;
7
8      this->name = "";
9      this->level = 1;
10     this->exp = 0;
11     this->expNext = 0;
12
13     this->strength = 0;
14     this->vitality = 0;
15     this->dexterity = 0;
16     this->intelligence = 0;
17
18     this->hp = 0;
19     this->hpMax = 0;
20     this->stamina = 0;
21     this->staminaMax = 0;
22     this->damageMin = 0;
23     this->damageMax = 0;
24     this->defense = 0;
25     this->luck = 0;
26
27     this->statPoints = 0;
28     this->skillPoints = 0;
29 }
30
31 Character::~Character()
32 {
33 }
34
35
36
37 void Character::initialize(const std::string name)
38 {
39     this->xPos = 0.0;
40     this->yPos = 0.0;
41
42     this->name = name;
43     this->level = 1;
44     this->exp = 0;
45     this->expNext = static_cast<int>((50 / 3) * ((pow(level, 3) - 6 * pow(level, 2)) +
17 * level - 12)) + 100;
46
47     this->strength = 5;
48     this->vitality = 5;
49     this->dexterity = 5;
50     this->intelligence = 5;
51
52     this->hp = 10;
53     this->hpMax = 10;
54     this->stamina = 10;
55     this->staminaMax = 10;
56     this->damageMin = 2;
57     this->damageMax = 4;
58     this->defense = 1;
59     this->luck = 1;
60
61     this->statPoints = 0;
```

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62     this->skillPoints = 0;
63 }
64
65 void Character::printStats() const
66 {
67     std::cout << "= Character Sheet = " << std::endl;
68     std::cout << "= Name: " << this->name << std::endl;
69     std::cout << "= Level: " << this->level << std::endl;
70     std::cout << "= Exp: " << this->exp << std::endl;
71     std::cout << "= Exp to Next Level: " << this->expNext << std::endl;
72     std::cout << std::endl;
73     std::cout << "= Strength: " << this->strength << std::endl;
74     std::cout << "= Vitality: " << this->vitality << std::endl;
75     std::cout << "= Dexterity: " << this->dexterity << std::endl;
76     std::cout << "= Intelligence: " << this->intelligence << std::endl;
77     std::cout << std::endl;
78     std::cout << "= HP: " << this->hp << "/" << this->hpMax << std::endl;
79     std::cout << "= Stamina: " << this->stamina << "/" << this->staminaMax << std::endl;
80     std::cout << "= Damage: " << this->damageMin << "-" << this->damageMax << std::endl;
81     std::cout << "= Defense " << this->defense << std::endl;
82     std::cout << "= Luck " << this->luck << std::endl;
83     std::cout << std::endl;
84 }
85
86 void Character::levelUp()
87 {
88     while (exp >= expNext)
89     {
90         exp -= expNext;
91         level++;
92         this->expNext = static_cast<int>((50 / 3) * ((pow(level, 3) - 6 * pow(level,
93 2)) + 17 * level - 12)) + 100;
94
95         this->statPoints++;
96         this->skillPoints++;
97     }
98 }
99
100
101 // Take all attributes and outputs as string
102 // expensive operation but not used much
103 std::string Character::getAsString() const
104 {
105     return std::to_string(xPos) + " "
106         + std::to_string(yPos) + " "
107         + name + " "
108         + std::to_string(level) + " "
109         + std::to_string(exp) + " "
110         + std::to_string(strength) + " "
111         + std::to_string(vitality) + " "
112         + std::to_string(dexterity) + " "
113         + std::to_string(intelligence) + " "
114         + std::to_string(hp) + " "
115         + std::to_string(stamina) + " "
116         + std::to_string(statPoints) + " "
117         + std::to_string(skillPoints) + " ";
118
119
120 }

```