# Exercice 3 :

1)

```cpp
class Weapon
{
    private:
        string nom;
        float degats;
};
```

2)

```cpp
class RPCharacter
{
    string nom;
    int level;
    int xp;
    float hp;
    Weapon weapons[10];
    int weaponCount;
    int currentWeapon;

};
```

3)

```cpp
class Weapon
{
    public:
        Weapon(): nom(""), degats(0){}

    private:
        string nom;
        float degats;
};
```

4)

```cpp
    Weapon(string n, float d)
    {
        nom = n;
        degats = d;
    }
```

5)

```cpp
public:
    string GetName()
    {
        return nom;
    }

    float GetDamage()
    {
        return degats;
    }
```

6)

```cpp
class RPCharacter
{

    public:
        RPCharacter(string name) : level(3), xp(0), hp(100), weaponCount(0),
currentWeapon(0) ;
        {
            nom = name;
        }
}
```

7)

```cpp
    string nom;
    int level;
    int xp;
    float hp;
    Weapon weapons[10];
    int weaponCount;
    int currentWeapon;
    bool is_dead;
```

8)

```
void apply_damage(int damage)
{
    hp -= damage;

    if(hp <= 0)
    {
        if(hp < 0)
            hp = 0;

        is_dead = true;
    }
}
```

10)

```
void attack(RPCharacter target)
{
    target.apply_damage(get_weapon().GetDamage());
    xp += get_weapon().GetDamage();
}
```

11)

```
void store_weapon(Weapon weapon)
{
    if(weaponCount < 10)
    {
        weapons[weaponCount] = weapon;
        weaponCount++;
    }
    else
    {
        weapons[9] = weapon;
    }
}
```

12)

```
void switch_weapon(int index)
{
    if(index > 9)
        index = 9;
```

```
        else if(index < 0)
            index = 0;

        if(index >= weaponCount)
        {
            currentWeapon = weaponCount - 1;
        }

        else
        {
            currentWeapon = index;
        }
    }
```

13 - 14)

```
Weapon get_weapon(int index)
    {
        if(index >= weaponCount)
        {
            if(weaponCount > 0)
                return weapons[weaponCount - 1];
            else
                return Weapon("disarmed", level / 2);
        }

        return weapons[index];
    }
```

15)

```
void drink_potion(int healpoints)
    {
        hp += healpoints;
    }
```

16)

```
int main()
{
    RPCharacter player1("Samurai");
    RPCharacter player2("Knight");

    Weapon katana("Katana", 50);
    Weapon excalibur("Excalibur", 40);

    player1.store_weapon(katana);
    player2.store_weapon(excalibur);
```

```
    player1.attack(player2);
    player2.attack(player1);
    player1.attack(player2);
}
```