Task no 1:

#include <iostream>

#include <windows.h>

using namespace std;

unsigned long long hero = 0;

unsigned char level()

{

return hero & 0xFF;

}

unsigned char money()

{

return (hero >> 8) & 0xFF;

}

unsigned char power()

{

return (hero >> 16) & 0xFF;

}

unsigned char wisdom()

{

return (hero >> 24) & 0xFF;

}

unsigned char strength()

{

return (hero >> 32) & 0xFF;

}

unsigned char endurance()

{

return (hero >> 40) & 0xFF;

}

unsigned char agility()

{

return (hero >> 48) & 0xFF;

}

unsigned char speed()

{

return (hero >> 56) & 0xFF;

}

void set\_level(unsigned char value)

{

hero = (hero & ~0xFF) | value;

}

void set\_money(unsigned char value)

{

hero = (hero & ~(0xFFULL << 8)) | (unsigned long long(value) << 8);

}

void set\_powers(unsigned char value)

{

hero = (hero & ~(0xFFULL << 16)) | (unsigned long long(value) << 16);

}

void set\_wisdom(unsigned char value)

{

hero = (hero & ~(0xFFULL << 24)) | (unsigned long long(value) << 24);

}

void set\_strength(unsigned char value)

{

hero = (hero & ~(0xFFULL << 32)) | (unsigned long long(value) << 32);

}

void set\_endurance(unsigned char value)

{

hero = (hero & ~(0xFFULL << 40)) | (unsigned long long(value) << 40);

}

void set\_agility(unsigned char value)

{

hero = (hero & ~(0xFFULL << 48)) | (unsigned long long(value) << 48);

}

void set\_speed(unsigned char value)

{

hero = (hero & ~(0xFFULL << 56)) | (unsigned long long(value) << 56);

}

void display\_stats()

{

cout << "Level: " << (int)level() << endl;

cout << "Money: " << (int)money() << endl;

cout << "Powers: " << (int)power() << endl;

cout << "Wisdom: " << (int)wisdom() << endl;

cout << "Strength: " << (int)strength() << endl;

cout << "Endurance: " << (int)endurance() << endl;

cout << "Agility: " << (int)agility() << endl;

cout << "Speed: " << (int)speed() << endl;

}

bool check\_power(unsigned char power\_index)

{

return (power() >> power\_index) & 1;

}

void grant\_power(unsigned char power\_index)

{

if (!check\_power(power\_index))

{

set\_powers(power() | (1 << power\_index));

if (power\_index == 0)

{

cout << "......power of sky soar........\n";

set\_wisdom(wisdom() + 2);

set\_speed(speed() + 2);

}

else if (power\_index == 1)

{

cout << "..........power of blade eternity..........\n";

set\_strength(strength() + 3);

}

else if (power\_index == 2)

{

cout << "................power of shadow clock..............\n";

set\_endurance(endurance() + 1);

}

else if (power\_index == 3)

{

cout << "..............power of infereo brust.........\n";

set\_strength(strength() + 3);

set\_endurance(endurance() + 3);

}

else if (power\_index == 4)

{

cout << ".............power of titan strength.........\n";

set\_strength(strength() \* 2);

}

else if (power\_index == 5)

{

cout << "............power of photon dash............\n";

set\_speed(speed() \* 2);

}

else if (power\_index == 6)

{

cout << ".............power of arcane arsenal.........\n";

set\_agility(agility() + 4);

}

else if (power\_index == 7)

{

cout << "............power of chorono freez..............\n";

set\_agility(agility() + 3);

set\_endurance(endurance() + 3);

}

}

else

{

cout << ".....no need to activate powers....." << endl;

cout << "......hero power is already active\n";

}

}

void revoke\_power(unsigned char power\_index)

{

if (check\_power(power\_index))

{

set\_powers(power() & ~(1 << power\_index));

if (power\_index == 0)

{

cout << ".....sky soar is reverted......\n";

set\_wisdom(wisdom() - 2);

set\_speed(speed() - 2);

}

else if (power\_index == 1)

{

cout << ".....Blade of Eternity is reverted......\n";

set\_strength(strength() - 3);

}

else if (power\_index == 2)

{

cout << "..... Shadow Cloak is reverted......\n";

set\_endurance(endurance() - 1);

}

else if (power\_index == 3)

{

cout << ".....Inferno Burst is reverted......\n";

set\_strength(strength() - 3);

set\_endurance(endurance() - 3);

}

else if (power\_index == 4)

{

cout << ".....Titan Strength is reverted......\n";

set\_strength(strength() / 2);

}

else if (power\_index == 5)

{

cout << ".....Photon Dash is reverted......\n";

set\_speed(speed() / 2);

}

else if (power\_index == 6)

{

cout << ".....Arcane Arsenal is reverted......\n";

set\_agility(agility() - 4);

}

else if (power\_index == 7)

{

cout << ".....Chrono Freeze is reverted......\n";

set\_agility(agility() - 3);

set\_endurance(endurance() - 3);

}

}

else

{

cout << "Power not active!" << endl;

}

}

void improve\_stat()

{

if (money() >= 5)

{

cout << "here to improve! More you spent more you get!\n";

cout << "In which you want perfection?\n";

cout << "1: Wisdom, 2: Strength, 3: Endurance, 4: Agility, 5: Speed: \n";

cout << "Enter specific number\n";

int choice;

cin >> choice;

set\_money(money() - 5);

if (choice == 1) set\_wisdom(wisdom() + 1);

else if (choice == 2) set\_strength(strength() + 1);

else if (choice == 3) set\_endurance(endurance() + 1);

else if (choice == 4) set\_agility(agility() + 1);

else if (choice == 5) set\_speed(speed() + 1);

else cout << "Invalid choice!" << endl;

}

else

{

cout << "Not enough money!" << endl;

}

}

void level\_up()

{

set\_level(level() + 1);

for (int i = 0; i < 8; ++i)

{

if (!check\_power(i))

{

grant\_power(i);

break;

}

}

cout << "\*\*\*\*LEVEL UP\*\*\*\*\*\n";

}

void grid()

{

cout << "======================================================\n";

cout << " \n";

}

void menu()

{

cout << "..............welcome to HEROES OF COSMOS............\n";

cout << "....what do you want..enter number\n";

cout << "1. Display result" << endl;

cout << "2. Check Powers" << endl;

cout << "3. Give a Power" << endl;

cout << "4. Revoke a Power" << endl;

cout << "5. Improve Stats" << endl;

cout << "6. Level Up" << endl;

cout << "7. Exit" << endl;

}

int main()

{

while (true)

{

system("cls");

grid();

menu();

grid();

int choice;

cin >> choice;

switch (choice)

{

case 1:

display\_stats();

break;

case 2:

{

cout << "Enter number (0 to 7): ";

int power\_index;

cin >> power\_index;

if (check\_power(power\_index))

{

cout << "Power is active." << endl;

}

else

{

cout << "Power is not active." << endl;

}

break;

}

case 3:

{

cout << "Which power do you want to grant: \n";

cout << "0: SKY SOAR, 1: BLADE ETERNITY, 2: SHADOW CLOAK, 3: INFERNO BURST, 4: TITAN STRENGTH, 5: PHOTON DASH, 6: ARCANE ARSENAL, 7: CHRONO FREEZE: \n";

int power\_index;

cin >> power\_index;

grant\_power(power\_index);

break;

}

case 4:

{

cout << "Which power do you want to REVOKE: \n";

cout << "0: SKY SOAR, 1: BLADE ETERNITY, 2: SHADOW CLOAK, 3: INFERNO BURST, 4: TITAN STRENGTH, 5: PHOTON DASH, 6: ARCANE ARSENAL, 7: CHRONO FREEZE: \n";

cout << "Enter number: ";

int power\_index;

cin >> power\_index;

revoke\_power(power\_index);

break;

}

case 5:

improve\_stat();

break;

case 6:

level\_up();

break;

case 7:

cout << ".............user retired.............\n";

return 0;

default:

cout << "......................Invalid choice...................." << endl;

}

Sleep(5000);

cout << "[developed by ABUBAKAR AWAN]\n";

system("pause");

}

return 0;

}

