#include <iostream>

#include <climits>

class Factorial

{

public:

Factorial(unsigned short num);

unsigned long getFactorial();

bool inRange();

private:

unsigned short num;

};

Factorial::Factorial(unsigned short num)

{

this->num = num;

}

unsigned long Factorial::getFactorial()

{

unsigned long sum = 1;

for(int i=1;i<=num;i++)

{

sum\*=i;

}

return sum;

}

bool Factorial::inRange()

{

unsigned long max = ULONG\_MAX;

for(int i=num;i>=1;i--)

{

max/=i;

}

if(max<1)

{

return false;

}

else

{

return true;

}

}

int main()

{

unsigned short num=0;

std::cout<<"enter a number:";

std::cin>>num;

Factorial fac(num);

if(fac.inRange())

{

std::cout<<num<<" 's Factorial is "<<fac.getFactorial()<<"\n\n";

}

else

{

std::cout<<"OverFlow!!!\n\n";

}

return 0;

}