# Rapport interfaces hommes-machines

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# Image c

SOURCE CODE :

```c
#ifndef IMAGE_H
#define IMAGE_H
#include "PNG.h"
class Image : public PNG
{
public:
    using PNG::PNG;
    Image(string filename );
    void lighten(double amount=0.1);
     void rotateColor(double angle);
     void saturate(double amount=0.1);



};

#endif // IMAGE_H
```

IMAGE.H

```cpp
void Image::rotateColor(double angle)
{
    for(unsigned i=0;i<width();i++)
        for(unsigned j=0;j<height();j++)
        {
            HSLAPixel &P=getPixel(i,j);
            P.h +=angle;
            while(P.h<0){
                P.h +=360;
            }
            while (P.h>360) {
                P.h -=360;
            }
        }
```

# IMAGE.cpp

```cpp
void Image::saturate(double amount)
{
    for(unsigned i=0;i<width();i++)
        for(unsigned j=0;j<height();j++
        {
            HSLAPixel &P=getPixel(i,j);
            P.s +=amount;
            P.s = (P.s>0) ? P.s :0;
            P.s = (P.s<=1) ? P.s:1;


void Image::lighten(double amount)
{
    for(unsigned i=0;i<width();i++)
        for(unsigned j=0;j<height();j++)
        {
            HSLAPixel &P=getPixel(i,j);
            P.l +=amount;
            P.l = (P.l>0) ? P.l :0;
            P.l = (P.l<=1) ? P.l:1;
        }
```

# IMAGE.H

**Input**



**Output**

# Input



# Output

Input



Output

```cpp
#ifndef GRAYSCALE_H
#define GRAYSCALE_H
#include "image.h"

class Grayscale: public Image
{
public:
    using Image::Image ;
     Grayscale(string filename);
};


#endif // GRAYSCALE_H
```

# Grayscale.h

Input



Output

```cpp
#include "illini.h"

illini::illini()
{

}
illini::illini(string filename, int c1, int c2){
    readFromFile(filename);
    color1=c1;
    color2=c2;




    for(unsigned x=0;x<width();x++){
        for(unsigned y=0;y<height();y++){
            HSLAPixel &P=getPixel(x,y);
            if(P.h<=color2&&P.h>=color1){
                if((color2-P.h)<(P.h-color1)){
                    P.h=color2;
                }else{
                    P.h=color1;
                }
            }

        }

    }
}
```

# Illini.h

# Input



# Out put