Code Quality

Good code is not just about correct operation
Code may compile, but may still be badly written !

Key questions you should ask about your code:
- How easy is it for others to understand ?
- How easy is it for others to change ?
- Does it support long-term maintenance ?

As a "coder" you probably don't care about these
As a "programmer" you definitely should !

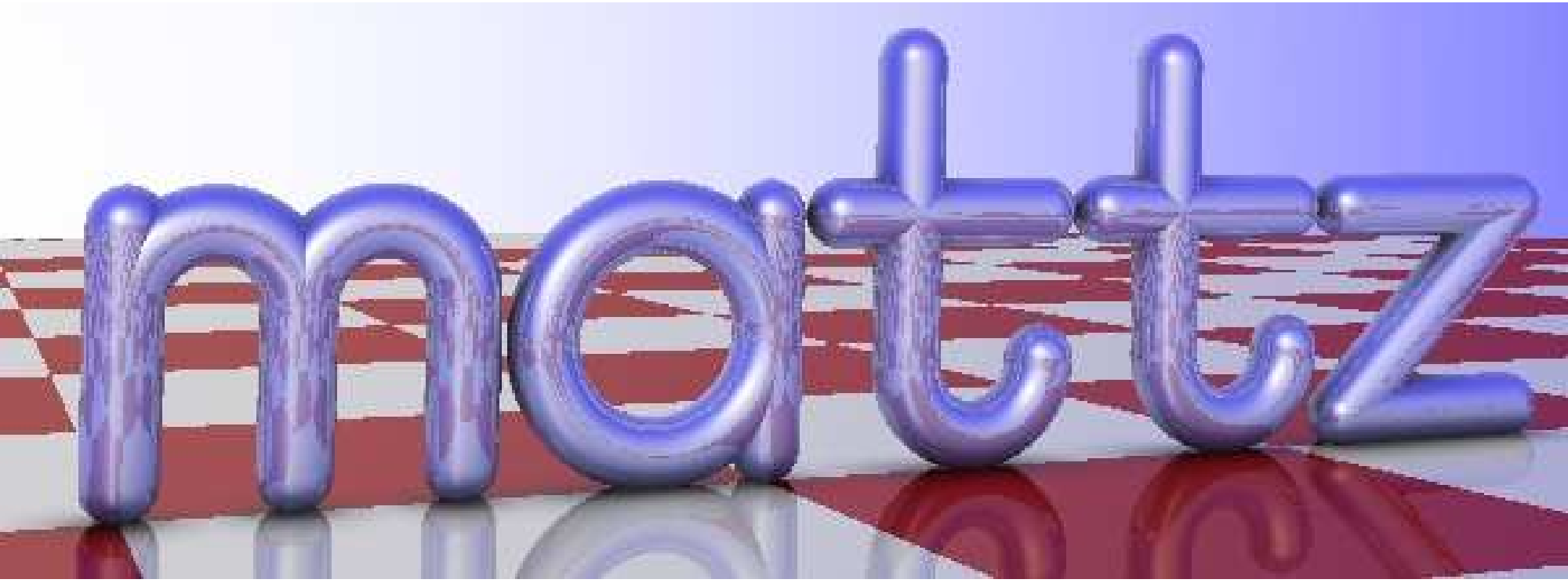
Fundamental Quality Characteristics

You've already inadvertently thought about this !
Every time you write some code and consider:

- Suitable Indentation
- Appropriate use of blank lines
- Sensible sized (length) methods
- Avoiding excessively long lines of code
- Including a suitable number of comments

These are all important elements of code quality
If we ignore them, code can be very hard to read...

```
#include <stdio.h>
typedef double f;f H=.5,Y=.66,S=-1,I,y=-111;extern"C"{f cos(f),pow(f
,f),atan2(f,f);}struct v{f x,y,z;v(f a=0,f b=0,f c=0):x(a),y(b),z(c)
{}f operator%(v r){return x*r.x+y*r.y+z*r.z;}v operator+(v r){return
v(x+r.x,y+r.y,z+r.z);}v operator*(f s){return v(x*s,y*s,z*s);}}W(1,1
,1),P,C,M;f U(f a){return a<0?0:a>1?1:a;}v _(v t){return t*pow(t%t,-
H);}f Q(v c){M=P+c*S;f d=M%M;return d<I?C=c,I=d:0;}f D(v p){I=99;P=p
;f l,u,t;v k;for(const char*b="BCJB@bJBHbJCE[FLL_A[FLMCA[CCTT`T";*b;
++b){k.x+=*b/4&15;int o=*b&3,a=*++b&7;k.y=*b/8&7;v d(o%2*a,o/2*a);!o
?l=a/4%2*-3.14,u=a/2%2*3.14,d=p+k*-H,t=atan2(d.y,d.x),t=t<l?l:t>u?u:
t,Q(k*H+v(cos(t),cos(t-1.57))*(a%2*H+1)):Q(k+d*U((p+k*S)%d/(d%d)));}
return M=Q(v(p.x,-.9,p.z))?(int(p.x+64)^int(p.z+64))/8&1?Y:W:v(Y,Y,1
),pow(I,H)-.45;}v R(v o,v d,f z){for(f u=0,l=1,i=0,a=1;u<97;u+=l=D(o
+d*u))if(l<.01){v p=M,n=_(P+C*S),L=_(v(S,1,2));for(o=o+d*u;++i<6;a-=
U(i/3-D(o+n*i*.3))/pow(2,i));p=p*(U(n%L)*H*Y+Y)*a;p=z?p*Y+R(o+n*.1,d
+n*-2*(d%n),z-1)*H*Y:p;u=pow(U(n%_(L+d*S)),40);return p+p*-u+W*u;}z=
d.z*d.z;return v(z,z,1);} int main(){for(puts("P6 600 220 255");++y<
110;)for(f x=-301;P=R(v(-2,4,25),_(_(v(5,0,2))*++x+_(v(-2,73))*-y+v(
301,-59,-735)),2)*255,x<300;putchar(P.z))putchar(P.x),putchar(P.y);}
```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More Complex Issues

The previous properties are all fairly self-evident

Others are however more subtle and intangible:

- Appropriate level of "complexity"
- Avoiding replication
- Use of "good" method and variable names
- Code "elegance"
- Avoiding replication

Lets take a look at some of these in more detail...