



AGPSL

Historie der Demoscene

Homecomputer und Kopieren von Spielen Anfang der 80er

Entstehung von Cracking-Groups die Kopierschutz entfernen

Programmierung kleiner Intros um die Group bekannt zu machen



Historie der Demoscene

Intros werden zunehmend größer und aufwendiger

Schließlich werden Spiele teils nur wegen den Intros kopiert

Intros lösen sich von den Spielen ab und existieren fortan allein



Motivation der Demoscene

Wieso ist die Demoscene auch heute noch aktiv?

- Keine Bezahlung
- Keine öffentliche Anerkennung
- Sehr zeitintensiv

Motivation der Demoscene

Demonstration der eigenen Fähigkeiten

Hat sich zu einer Subkultur entwickelt

ähnlich wie HipHop und Graffiti in den 80ern

Sprungbrett in die Unterhaltungs- und Computergrafikindustrie

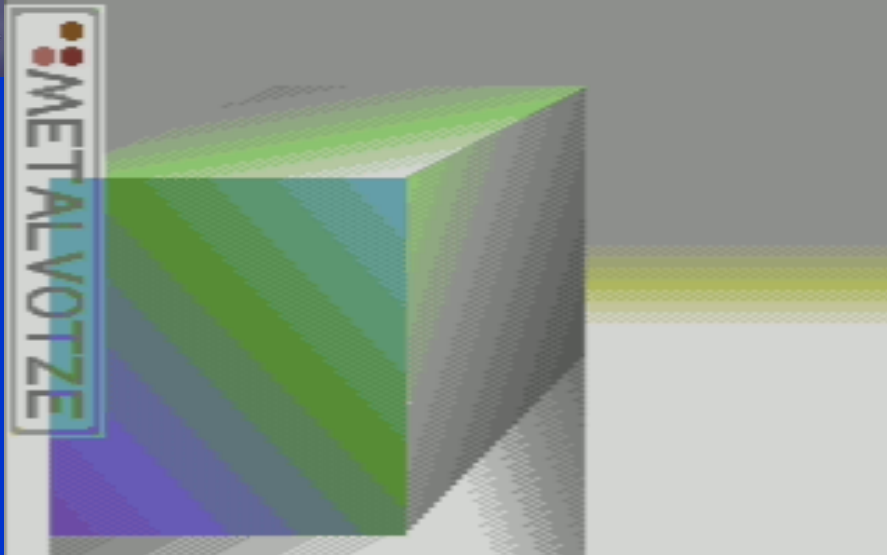
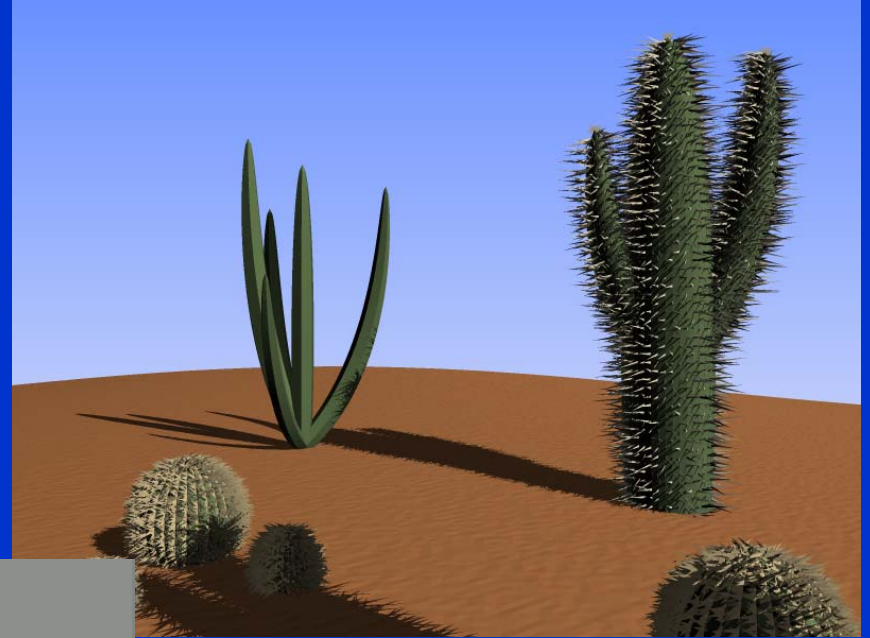
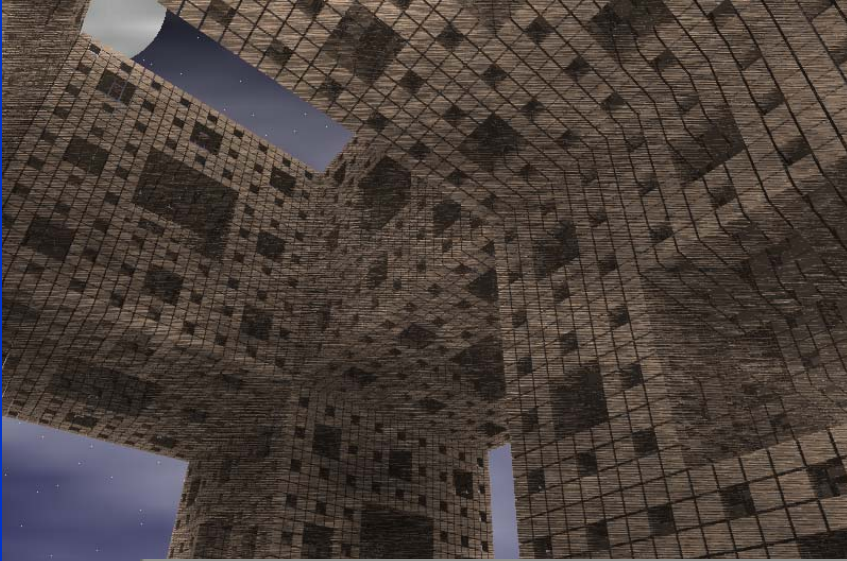
- Remedy (Max Payne)
- Mad Onion (3D Mark)
- Dice (Battlefield 1942 / II)
- Core (Tomb Raider)

Demoparties

Verschiedene Kategorien um eigene Produktionen zu releasen

- PC/Amiga/C64/... - Demo
- 64k/4k/256b/64b - Intro
- MP3/Tracker - Musik
- Pixel/Ray Tracing/Procedural4k - Grafik
- ...

Procedural 4k



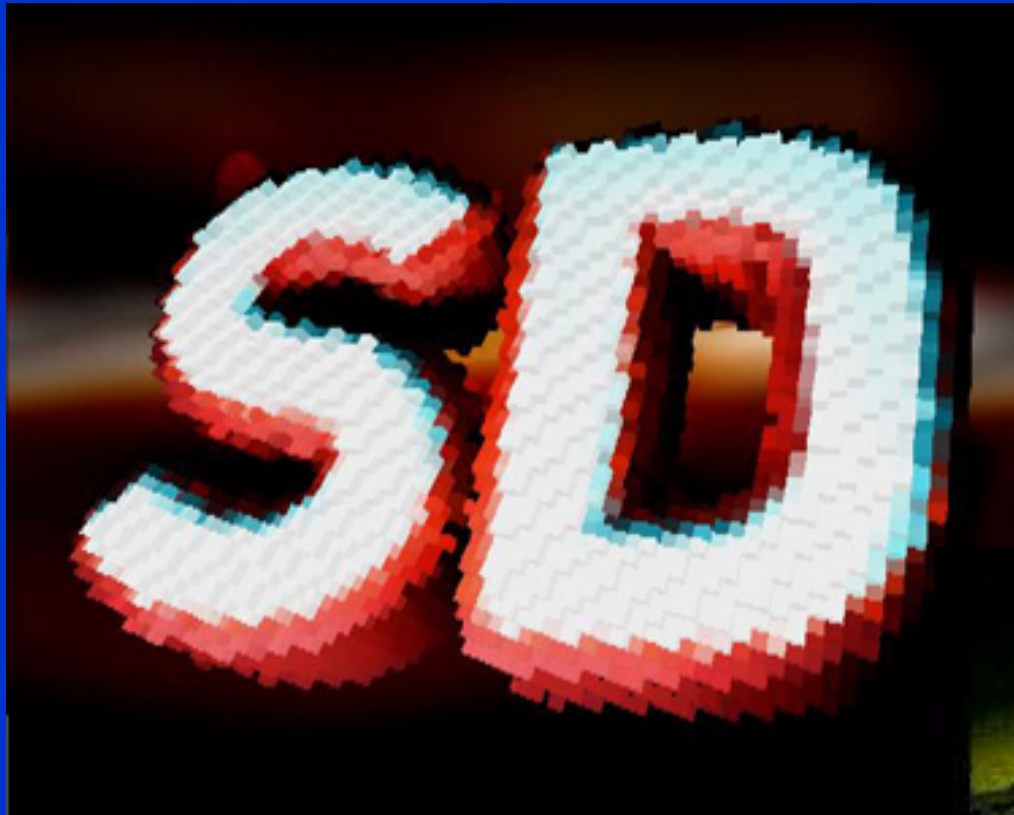
Demoparties

Bewertung durch Publikum (oder Jury)

Auf großen Parties (z.B. Assembly, Breakpoint)

- Seminare
- Workshops
- Live Musik
- ...

Konsolen (PS2)



Aura for Laura
by SoopaDoopa



Konsole (DC)



Variance
by Haujobb



Konsole (Nintendo DS)



Christmas 2005
by Jumalauta

Konsolen (PSP)

Flower Demo

by Moppi Productions



Konsole (Vectrex)



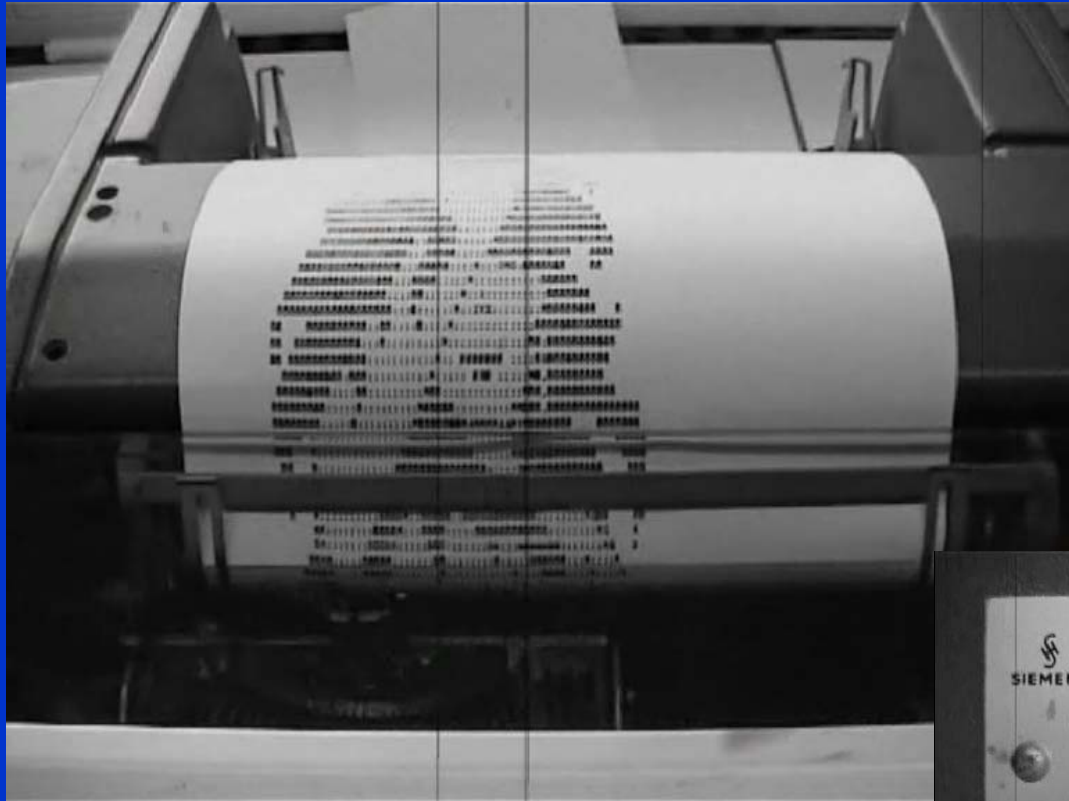
Anita, die Schwertschluckerin
by Metalvotze

Wild (Needle Printer)



Cellulose
by Tapir

Wild (Fernschreiber)



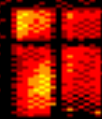
L.I.S.A.

by Metalvotze



Retro (Amstrad CPC, Commodore 64)

JUSTIN



CNG
SOFT
2005
COPY

Justin

by cngsoft '05

Turrican III

by Smash Designs '04



Demoparties



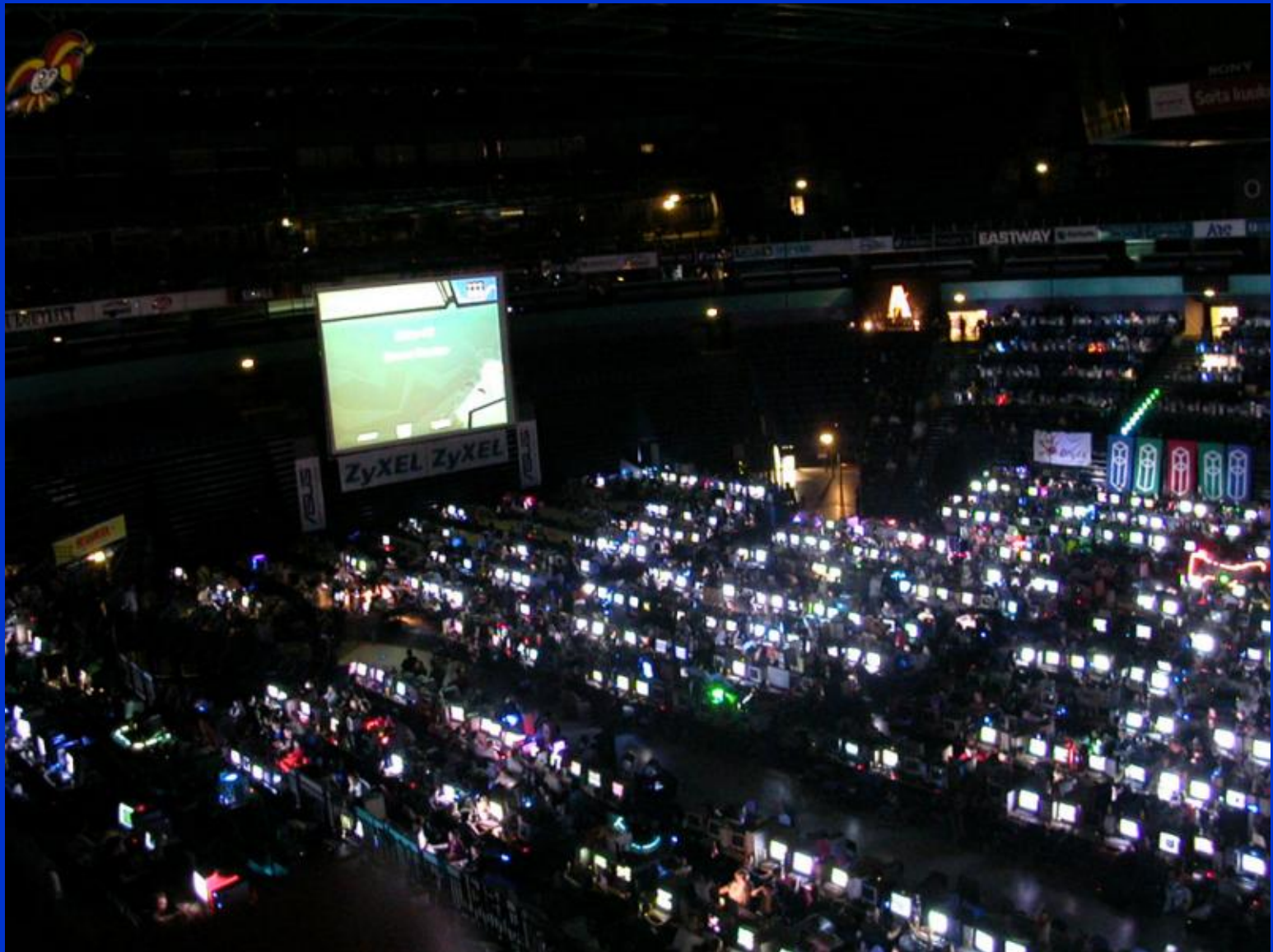
Demoparties



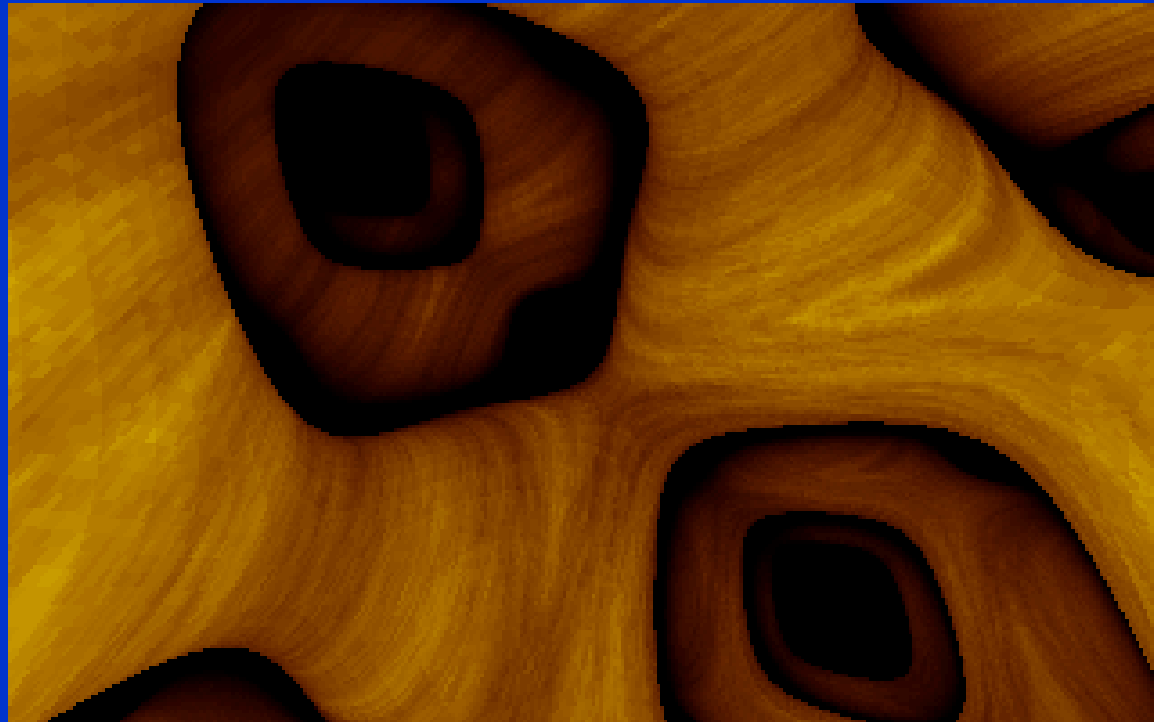
Demoparties



Demoparties



Beispiel: 256byte Intro: Lattice (Baze/3SC)



Beispiel: 256byte Intro: Lattice (Baze/35C)

Anatomie

- Grafik-Modus initialisieren (320x200 mit 256 Farben)
- Farbpalette setzen (RGBx256)
- Textur der Tunnelwände vorberechnen

Beispiel: 256byte Intro: Lattice (Baze/3SC)

Anatomie

- Schleife über alle y-Werte (-100..100 = 200 Scanlines)
- Schleife über alle x-Werte (-160..160 = 320 Pixel/Scanline)
- Strahl durch den Pixel (x,y) schießen (Ray Tracing)
- Rotation des Strahls (virtuelle Kamera)
- Schnitt des Strahls mit den Tunnelwänden (3D-Gitter)

Beispiel: 256byte Intro: Lattice (Baze/3SC)

Anatomie

- Blitting des berechneten Bildes
- Tastaturabfrage (Exit to DOS (ESC) oder Main-Loop fortsetzen?)

Beispiel: 256byte Intro: Lattice (Baze/35C)

PAL	mov	al,13h		TEX	mov	bx,cx
	int	10h		rcl	dh,cl	
	mov	ax,cs		mov	ah,dh	
	add	ah,10h		sar	ah,3	
	mov	es,ax		adc	al,ah	
	xor	cx,cx		adc	al,[es:bx+128]	
	mov	dx,3C8h		shr	al,1	
	mov	al,cl		mov	[es:bx],al	
	out	dx,al		not	bh	
	inc	dx		mov	[es:bx],al	
	out	dx,al		loop	TEX	
	mul	al				
	shr	ax,6				
	out	dx,al				
	xor	ax,ax				
	out	dx,al				
	stosb					
	loop	PAL				

Beispiel: 256byte Intro: Lattice (Baze/35C)

PAL

```
mov     al,13h
int     10h

mov     ax,cs
add     ah,10h
mov     es,ax

xor     cx,cx
mov     dx,3C8h
mov     al,cl
out     dx,al
inc     dx
out     dx,al
mul     al
shr     ax,6
out     dx,al
xor     ax,ax
out     dx,al
stosb
loop   PAL
```

TEX

```
mov     bx,cx
rcl     dh,cl
mov     ah,dh
sar     ah,3
adc     al,ah
adc     al,[es:bx+128]
shr     al,1
mov     [es:bx],al
not     bh
mov     [es:bx],al
loop   TEX
```

Beispiel: 256byte Intro: Lattice (Baze/35C)

PAL

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mov     al,13h
int     10h

mov     ax,cs
add     ah,10h
mov     es,ax

xor     cx,cx
mov     dx,3C8h
mov     al,cl
out     dx,al
inc     dx
out     dx,al
mul     al
shr     ax,6
out     dx,al
xor     ax,ax
out     dx,al
stosb
loop   PAL
```

TEX

```
mov     bx,cx
rcl     dh,cl
mov     ah,dh
sar     ah,3
adc     al,ah
adc     al,[es:bx+128]
shr     al,1
mov     [es:bx],al
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loop   TEX
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Beispiel: 256byte Intro: Lattice (Baze/35C)

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mov     es,ax

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out     dx,al
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shr     ax,6
out     dx,al
xor     ax,ax
out     dx,al
stosb
loop   PAL
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TEX

```
mov     bx,cx
rcl     dh,cl
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adc     al,ah
adc     al,[es:bx+128]
shr     al,1
mov     [es:bx],al
not     bh
mov     [es:bx],al
loop   TEX
```

Beispiel: 256byte Intro: Lattice (Baze/35C)

```
MAIN  mov     di,200h
      push   di

      mov     dx,-100
DRAWY  mov     bp,-160
DRAWX  mov     si,EYE
      fninit

      fldlg2
      mov     [di],bp
      fild   word [di]
      fidiv  word [si]
      mov     [di],dx
      fild   word [di]
      fidiv  word [si]
```

```
      mov     cl,2
ROTATE fild   word [byte si-EYE+ZMOVE]
      fidiv  word [byte si-EYE+SCALE]
      fsincos
      fld     st2
      fmul   st0,st1
      fld     st4
      fmul   st0,st3
      fsubp  st1,st0
      fxch   st0,st3
      fmulp  st2,st0
      fmulp  st3,st0
      faddp  st2,st0
      fxch   st0,st2
      loop   ROTATE

      fldpi
      fidivr word [byte si-EYE+ZMOVE]
      fldz
      fldz
```

Beispiel: 256byte Intro: Lattice (Baze/35C)

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      fld    st4
      fmul   st0,st3
      fsubp  st1,st0
      fxch   st0,st3
      fmulp  st2,st0
      fmulp  st3,st0
      faddp  st2,st0
      fxch   st0,st2
      loop   ROTATE

      fldpi
      fidivr word [byte si-EYE+ZMOVE]
      fldz
      fldz
```

Beispiel: 256byte Intro: Lattice (Baze/3SC)

```
RAYST  mov     cl,32
        fld     st2
        fcos
        fld     st2
        fcos
        faddp  st1,st0
        fld     st1
        fcos
        faddp  st1,st0
        fldln2
        faddp  st1,st0

        fcom   dword [byte si-
EYE+EPSILON]
        fnstsw ax
        sahf
```

```
        fld     st0
        fmul   st0,st7
        faddp  st4,st0
        fld     st0
        fmul   st0,st6
        faddp  st3,st0
        fmul   st0,st4
        faddp  st1,st0

        jc     short RAYHIT
        loop   RAYST
```

Beispiel: 256byte Intro: Lattice (Baze/3SC)

```
RAYST  mov     cl,32
      fld     st2
      fcos
      fld     st2
      fcos
      faddp   st1,st0
      fld     st1
      fcos
      faddp   st1,st0
      fldln2
      faddp   st1,st0

      fcom    dword [byte si-
EYE+EPSILON]
      fnstsw  ax
      sahf
```

```
      fld     st0
      fmul    st0,st7
      faddp   st4,st0
      fld     st0
      fmul    st0,st6
      faddp   st3,st0
      fmul    st0,st4
      faddp   st1,st0

      jc     short RAYHIT
      loop   RAYST
```

Beispiel: 256byte Intro: Lattice (Baze/35C)

```
RAYHIT fpatan
      fimul    word [byte si-EYE+SCALE]
      fistp   word [byte si-EYE+TEXUV]
      fimul    word [byte si-EYE+SCALE]
      fistp   word [byte si-EYE+TEXUV+1]

      mov     si,[byte si-EYE+TEXUV]
      shl    cx,1
      es     lodsb
      neg    al
      mul    cl
      mov    [di],ah
      inc   di

      inc   bp
      cmp  bp,160
      jnz  near DRAWX

      inc  dx
      cmp dx,byte 100
      jnz near DRAWY
```

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      fistp   word [byte si-EYE+TEXUV]
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      mov     si,[byte si-EYE+TEXUV]
      shl    cx,1
      es     lodsb
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        mov     si,[byte si-EYE+TEXUV]
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      neg    al
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Beispiel: 256byte Intro: Lattice (Baze/35C)

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RAYHIT fpatan
        fimul    word [byte si-EYE+SCALE]
        fistp   word [byte si-EYE+TEXUV]
        fimul    word [byte si-EYE+SCALE]
        fistp   word [byte si-EYE+TEXUV+1]
```

```
        mov     si,[byte si-EYE+TEXUV]
        shl    cx,1
        es     lodsb
        neg    al
        mul   cl
        mov   [di],ah
        inc  di
```

```
        inc    bp
        cmp   bp,160
        jnz   near DRAWX
```

```
        inc    dx
        cmp   dx,byte 100
        jnz   near DRAWY
```

Beispiel: 256byte Intro: Lattice (Baze/35C)

dec word [byte bp-160+ZMOVE]

pop si

push es

push word 0A000h

pop es

xor di,di

mov ch,32000/256

rep movsw

pop es

in al,60h

cbw

dec ax

jnz near MAIN

mov al,3

int 10h

ret

Beispiel: 256byte Intro: Lattice (Baze/35C)

dec word [byte bp-160+ZMOVE]

pop si
push es
push word 0A000h
pop es
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dec word [byte bp-160+ZMOVE]

pop si

push es

push word 0A000h

pop es

xor di,di

mov ch,32000/256

rep movsw

pop es

in al,60h

cbw

dec ax

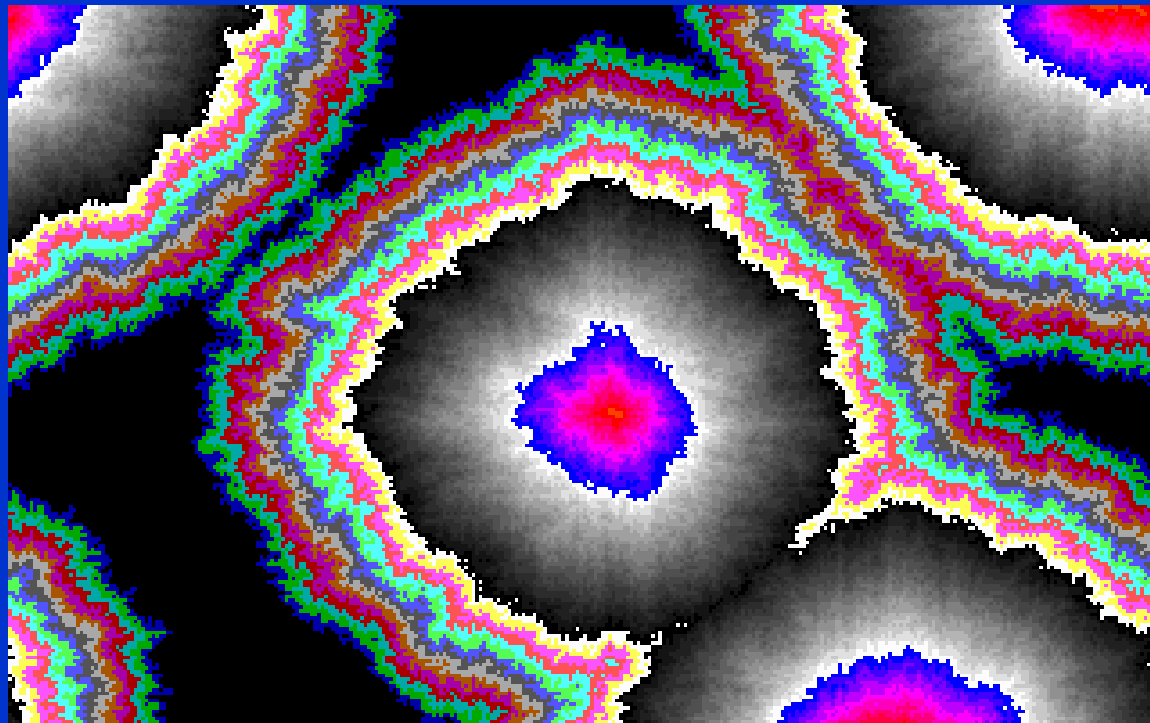
jnz near MAIN

mov al,3

int 10h

ret

Beispiel: 64byte Intro: Lochfraß (T\$)



Beispiel: 64byte Intro: Lochfraß (T\$)

```
mov al,13h  
int 10h  
lds ax,[bx]
```

```
in al,60h  
dec al  
jnz schleife  
ret
```

```
mov bx,36345  
inc byte [bx]
```

```
schleife:  
imul ebx,65539357  
add ebx,4237
```

```
mov cl, [bx+1]  
add cl, [bx-1]  
add cl, [bx-320]  
add cl, [bx+320]  
cmp cl,[bx]  
jbe schleife
```

```
inc byte [bx]
```