L-sistemi za fraktalno generiranje 3D objektov

Seminarska naloga

Računalniška grafika
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Funkcionalna specifikacija

- Enotni programski vmesnik.
  - gramatično neodvisni vizualizatorji
  - razširitev z novimi gramatikami ali vizualizatorji (aksiomi, produkcije, produkcijske družine, parametri)
- Parametrični kontekstno neodvisni in odvisni L-sistemi
- Deterministični in stohastični L-sistemi
- Iterativni funkcijski sistemi
- Izbira gramatik, vizualizatorjev, parametrov L-sistema
- OpenGL vizualizacija

Gramatike

- Pomen simbolov: Astrid Lindenmayer. The Algorithmic Beauty of Plants.
- Osnovno drevo. Ločevanje vejitvenih in prirastnih produkcij.

```
B->F[+B][ >+B][ >>+B][B]
F->FF
```

- Hilbertova krivulja.

```
A->B-F+ CFC +F-D\\F/D-F +\\\\ CFC +F+B>>
B->A\\F/ CFB /F/D// -F-D/|F/B|FC/F/A >>
C ->|D/|F/B-F+C/F/A \\\\ FA \\F/C+F+B/F/D>>
D ->|CFB -F+B|FA \\F/A \\\\ FB -F+B|FC >>
```

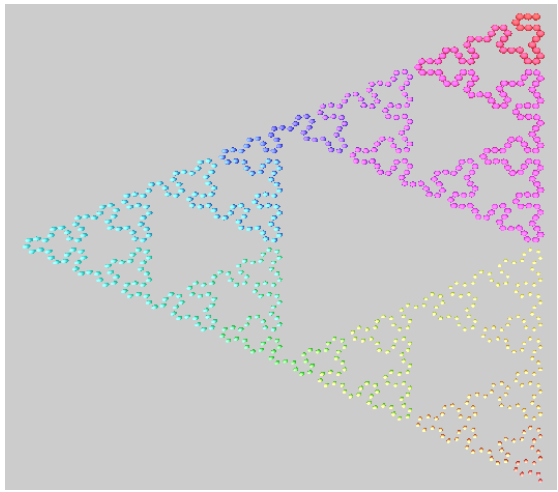
- Vrsta dreves. Osnovni parametrični L-sistem.

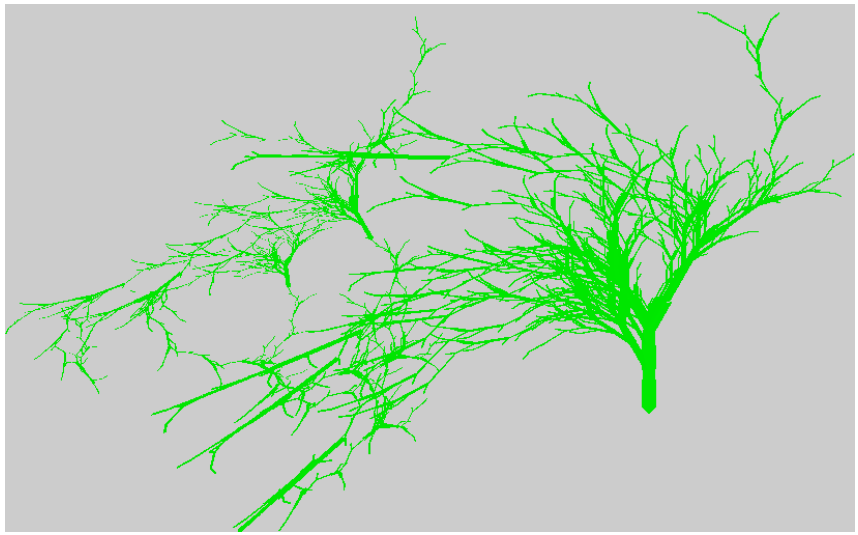
```
F->F(x*p ,2)+ F(x*h ,1) - -F(x*h ,1)+ F(x*q ,0)
F->F(x,t -1)
```

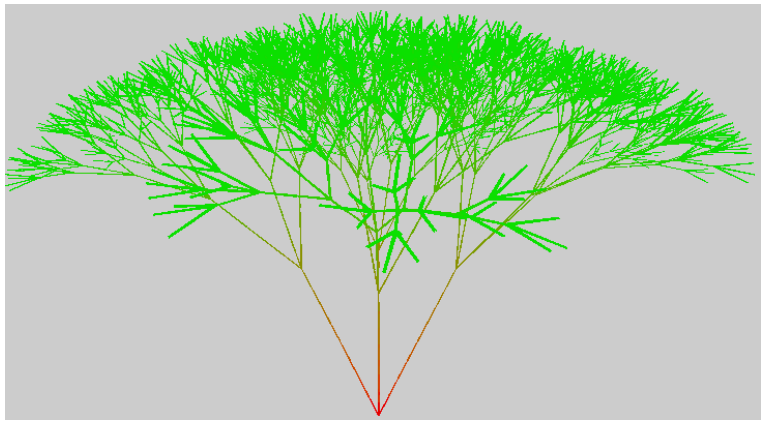
- Drevo

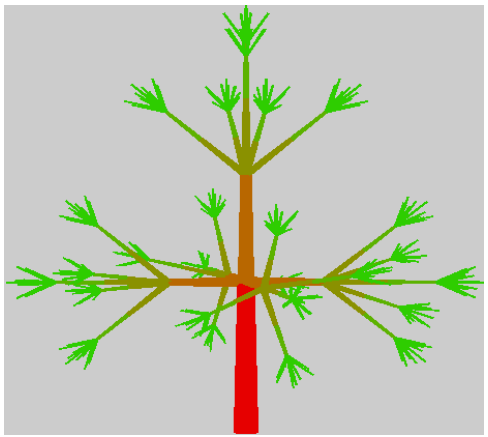
```
K->F[+ RB ][ > >+ RB ][>>>>+ RB ][ RB( main )]
B->>F[+ RBRL ][> >+ RBRL ][>>>>+ RBRL ][ RBRL ]
F->F( grow )
```

Prikaz









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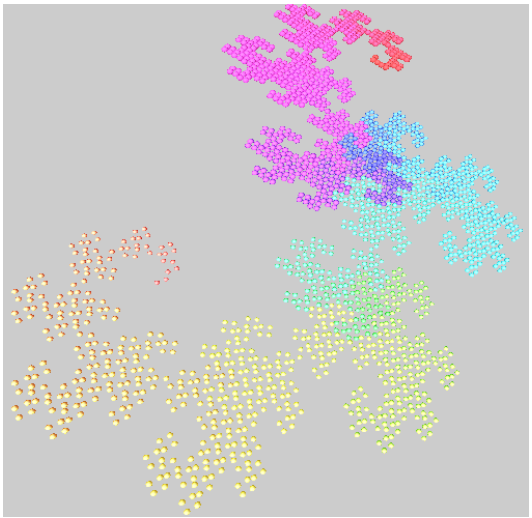

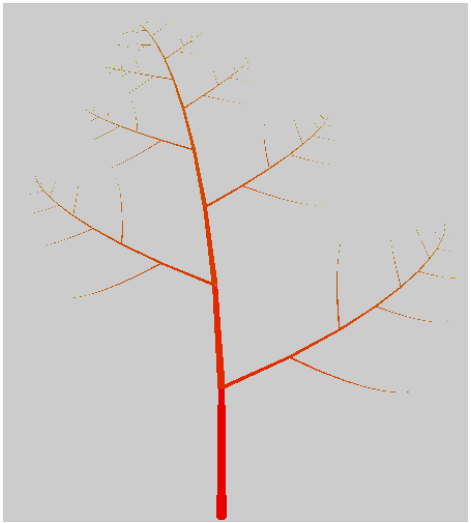

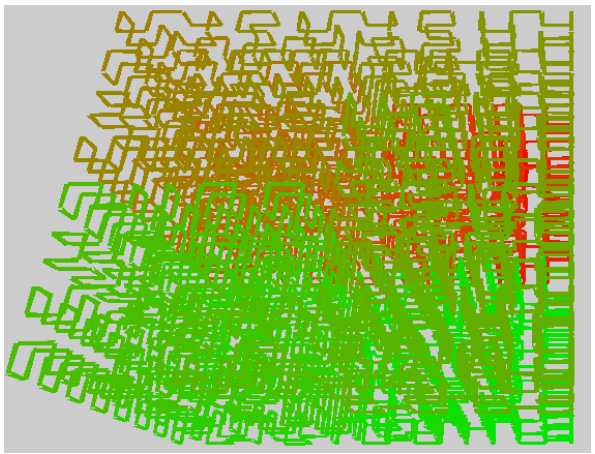

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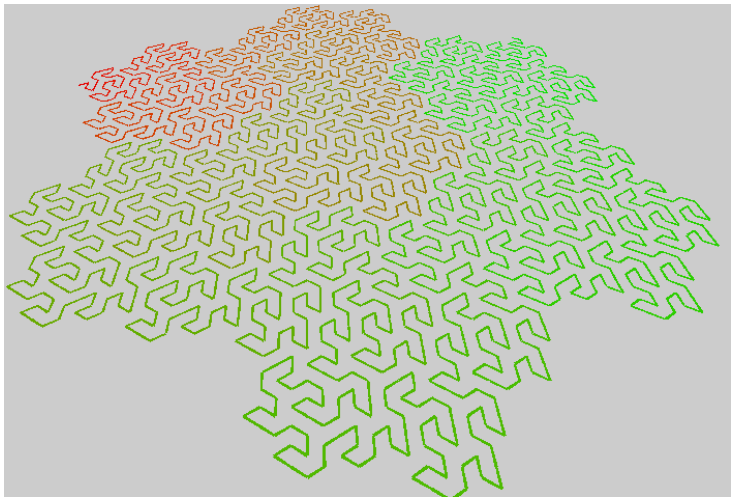

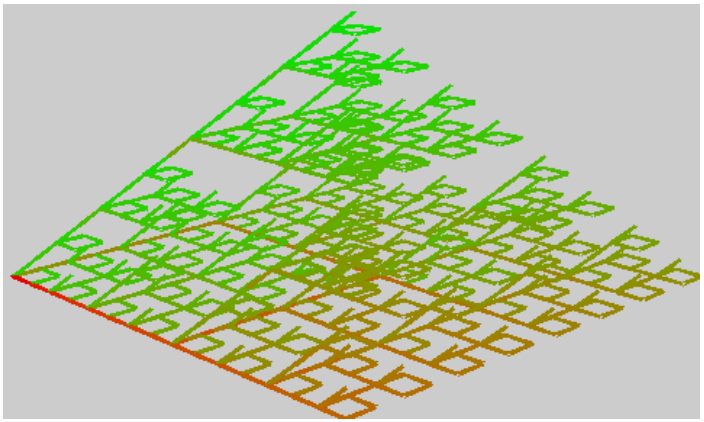

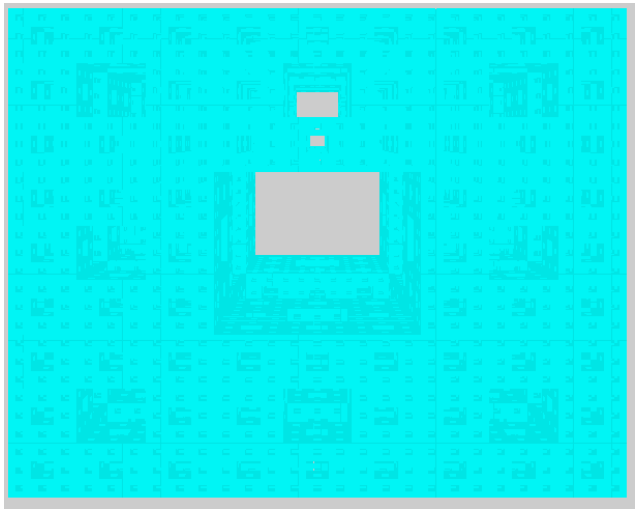

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