Final Assignments

Final Assignments - Overview

1.	Perspective Wall Distortion Pattern	Kirsch
2.	Document Lens Distortion Pattern	Lorenz
3.	Orthogonal Stretch Distortion Pattern	Adam
4.	Radial Stretch Distortion Pattern	Grabs
5.	Multiple Foci Distortion Pattern	Kolewa
6.	Automated Optimal Focus Switch	Günther
7.	Automated Optimal Camera Placement	Hinrichs
8.	Housing Statistics	Brumme & Heinrich

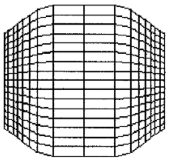
→ Abgabe von Software und Dokumentation bis zum 27. Juli 2003

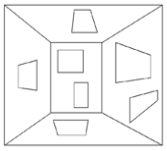
→ Zwischenbericht in der 1. Juli-Woche 2003

Assignments 1 - 5 : Distortion Patterns

Requirements

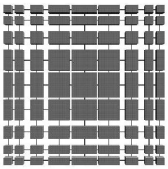
- Users can add an arbitrary number of pieces of information
- Types of information are images and texts
- Users can interactively navigate through information space
- Users can configure pattern resolution, visual brightness and contrast, …

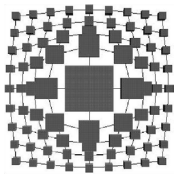


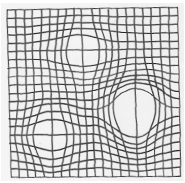


Implementation

- Rendering based on 3D graphics, such as provided by VRS or OpenGL
  Texture-based representations
- User Interface based Qt with minimal functionality
  File: Open Project, Save Project, Preferences, Print Snapshot
  Edit: Add image, add text
  View: Reset, [Navigation Controls]
- Ready-to-run applications with command-line input







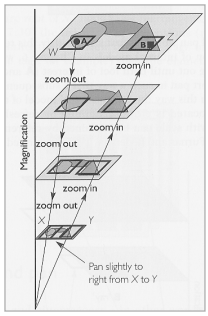
Assignment 6 : Automated Focus Switch

Requirements

- Users can define landmarks, i.e., geo-reference positions within a virtual enviornment such as a 3D map
- Users can interactively select one of them as the center-of-attention
- Switching between different centers results into a smooth, context-preserving camera animation
- The camera animation should ensure that both, current and new centers remain visible during the animation by appropriate zooming-in and zooming-out operations

Implementation

- Rendering based on 3D graphics, such as provided by LandExplorer or VRS
- User Interface based Qt with minimal functionality
  File: Open Project, Save Project, Preferences, Print Snapshot
  Edit: Select Landmark, Add Landmark as Bookmark
- View: Reset, …
- Ready-to-run application



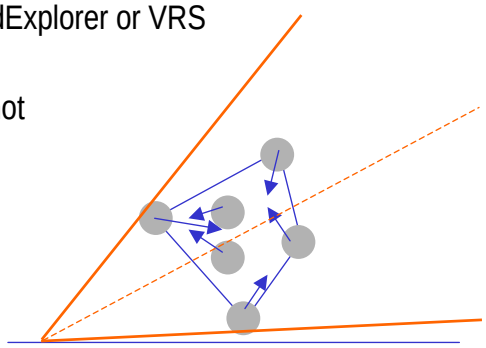
Assignment 7 : Automated Camera Placement

Requirements

- Users can define a set of actors, which are located within a given 3D environment such as a 3D map; each actor has a specified weight
- Users can interactively change the weights of each actor
- The camera placement depends on the position and weight of each actor
- Weight changes result into smooth, context-preserving camera animations
- Constraints ensure, for example, that all actors are visible and the most important actor is located in the middle of the screen

Implementation

- Rendering based on 3D graphics, such as provided by LandExplorer or VRS
- User Interface based Qt with minimal functionality
  File: Open Project, Save Project, Preferences, Print Snapshot
  Edit: Add Landmark, Select Landmark
  View: Reset, Switch to next Landmark, ...
- Ready-to-run application



References:

Noma & Okada, Automating Virtual Camera Control for Computer Animation, Computer Animation Series - Creating and Animating the Virtual World, 1992

Drucker, S., Zeltzer, D. 1994. Intelligent Camera Control in Virtual Environments. Graphics Interface '94, 190-199.

Assignment 8 : Housing Statistics

Requirements

- Housing Information is provided on a per-block basis; each block corresponds to a specified geo-referenced region
- The various categories of block information should be visualized
- At least three different visualization strategies should be integrated

Implementation

- Rendering based on 3D graphics, such as provided by VRS or OpenGL
- User Interface based Qt with minimal functionality
  File: Open Block Data, Preferences, Print Snapshot
  View: Info1, Info2, ...
- Ready-to-run application

Tabelle 1: Gebäude mit Wohnraum nach Gebäudearten sowie bewohnte Unterku

Block Stat. Gebiet	Gebäude mit Wohnraum 1) ins-gesamt	darin Wohn-einheiten 2)	darunter Wohnungen bewohnt	darunter Wohnungen leer-stehend	reine Wohn insgesamt	reine Wohn darin Wohn-einhe
98	1	2	3	4	5	6
001	2	8	8	2	2	
007	2	194	125	68	2	
008	38	464	419	44	38	
021	11	65	50	14	11	
022	2	14	14	2	2	
024	2	8	5	2	2	
026	11	65	53	14	11	
028	30	176	161	14	26	
029	38	344	284	56	38	
030	8	35	30	5	8	
031	11	161	161	-	11	
032	20	128	110	17	20	
033	2	10	8	2	2	
601	2	8	8	2	2	
602	53	362	311	50	44	
603	2	20	20	-	2	
604	23	275	230	41	23	
605	20	170	146	23	20	
606	32	242	230	11	30	
zusammen	314	2 750	2 375	371	299	2