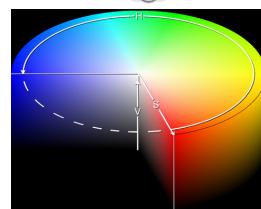
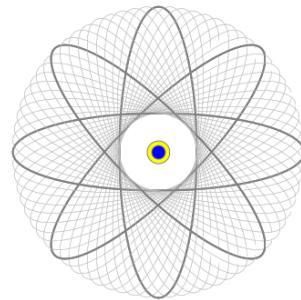
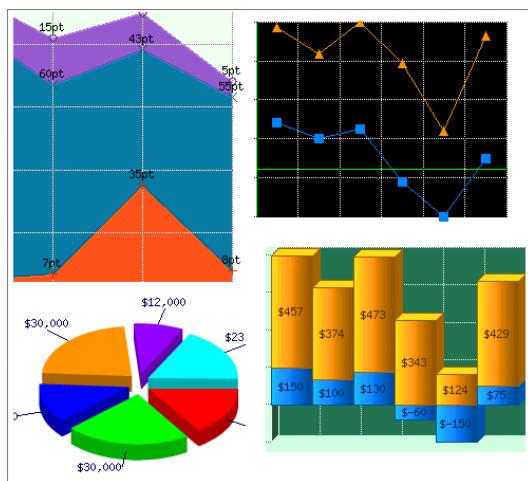


Komputer Grafik I

Teknik Informatika



CGI - STMIK

Apa itu Komputer Grafik?

- **Komputer grafik (grafika komputer):**

Proses pembuatan, manipulasi, penampilan grafik (2D/3D), citra, animasi dan sejenisnya ke display, layar komputer, printer, maupun devais lainnya.

Kenapa harus belajar komputer grafik?

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Entertainment



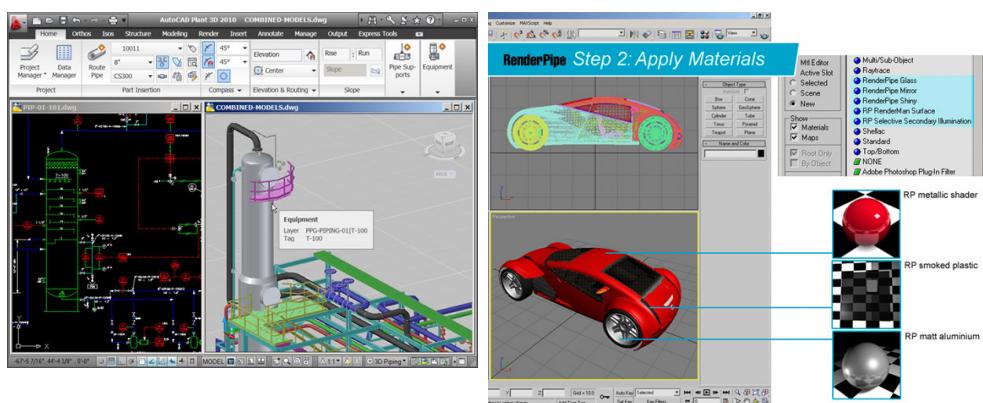
Film:
Finding Nemo
Pixar



Game:
Final Fantasy
Square Enix

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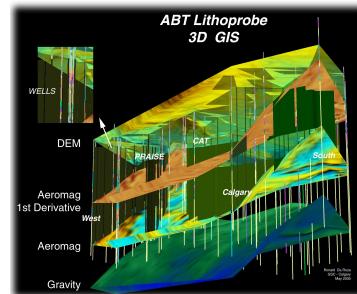
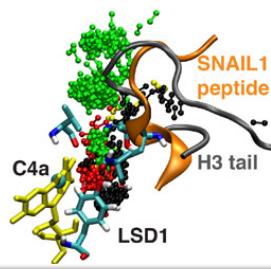
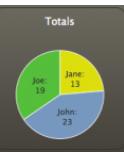
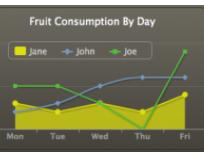
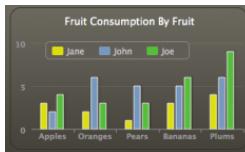
CAD: Computer-Aided Design



AutoCAD

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Visualisasi: Teknik, Kesehatan, dsb



CG1: STMIK

Simulasi & Virtual Reality



Brain-computer
Interface & VR



Flight Simulator

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User Interface



Dan masih banyak lagi contoh-contoh lainnya ...

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Kemajuan Teknologi: Input & Display



Perkembangan perangkat keras ...

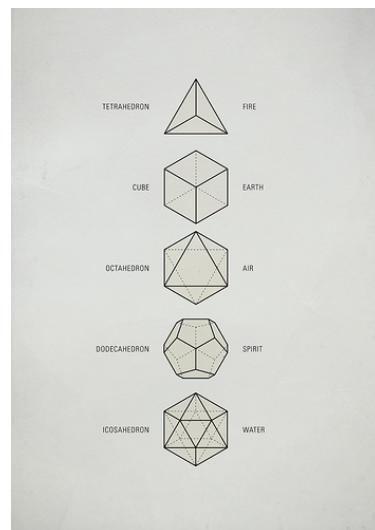
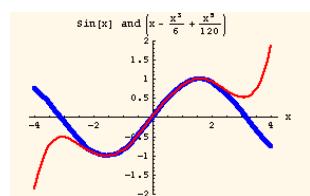
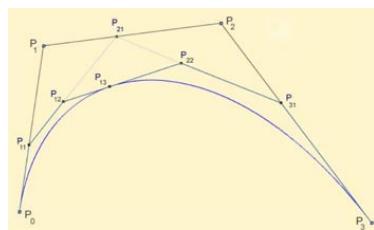
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Teori dan Teknologi Pendukung

- Sains dan Matematika
 - Teori fisika mengenai cahaya, warna, dsb
 - Ilmu geometri
 - Matematika mengenai garis, kurva, bidang, dsb
- Teknik
 - Perangkat keras: Video card, Display, Sensor, Kamera, dll
 - Perangkat lunak: Grafik library (DirectX, OpenGL), UI Framework, Pemrograman
- Seni dan Psikologi
 - Persepsi: warna, tampilan
 - Desain: komposisi, warna, pencahayaan, dsb

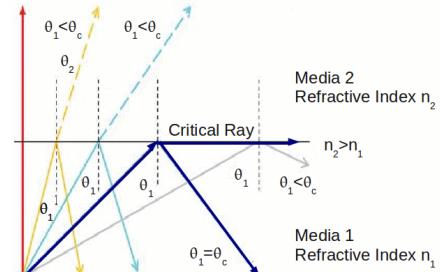
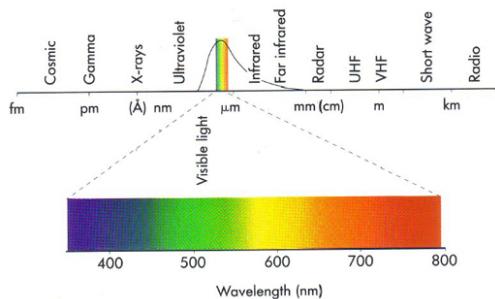
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Matematika

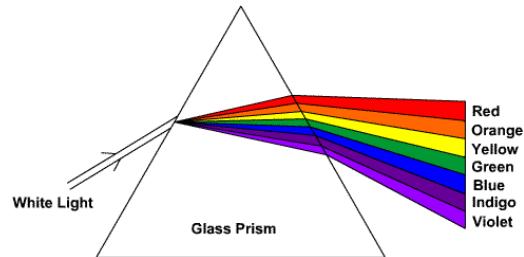


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Warna dan Cahaya

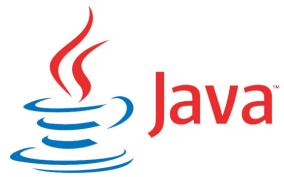


Komponen cahaya

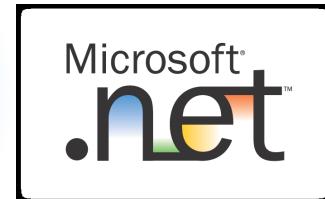


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Bahasa Pemrograman & Library



```
#include <stdio.h>
int main(void)
{
    printf("Hello World!\n");
    return 0;
}
```



CG1: STMIK

Tata Tertib, Penilaian dan Prasyarat

- Mahasiswa wajib mentaati tata tertib/aturan yang ditetapkan oleh prodi, khususnya:
 - Kehadiran (> 60 %)
 - Absensi & Keterlambatan
 - Perangkat komunikasi di-silent
- Penilaian
 - Absensi, Tugas, UTS, dan UAS
- Prasyarat
 - Matematika: Aljabar Linear, Geometri
 - Pemrograman: Algoritma & Pemrograman, Pemrograman Berorientasi Objek, Java

CG1: STMIK

Materi

- Apa yang akan dipelajari?
 - Bukan mendesain (ini ranah desain grafis)
 - Bukan menggunakan software (Blender, Maya, dll)
 - Mempelajari prinsip dasar dari komputer grafik
 - Agar memahami bagaimana suatu objek CG dihasilkan
 - Matematika, pemrograman, algoritma
- Materi Perkuliahan
 - **Komputer grafik 1:** Grafik 2D (objek geometri, warna, transformasi, *clipping*, text, pemrosesan citra, animasi)
 - **Komputer grafik 2:** Grafik 3D (objek 3D, view, lighting, texturing, surface, rendering, interaksi, animasi)

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Referensi

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<http://download.oracle.com/javase/tutorial/2d/index.html>
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<http://java.sun.com/developer/onlineTraining/java3d/>
- Hong Zang dan Y. Daniel Liang, ”Computer Graphics using Java 2D and 3D”, Prentice Hall 2006