

Get into games



A brief introduction to the games industry

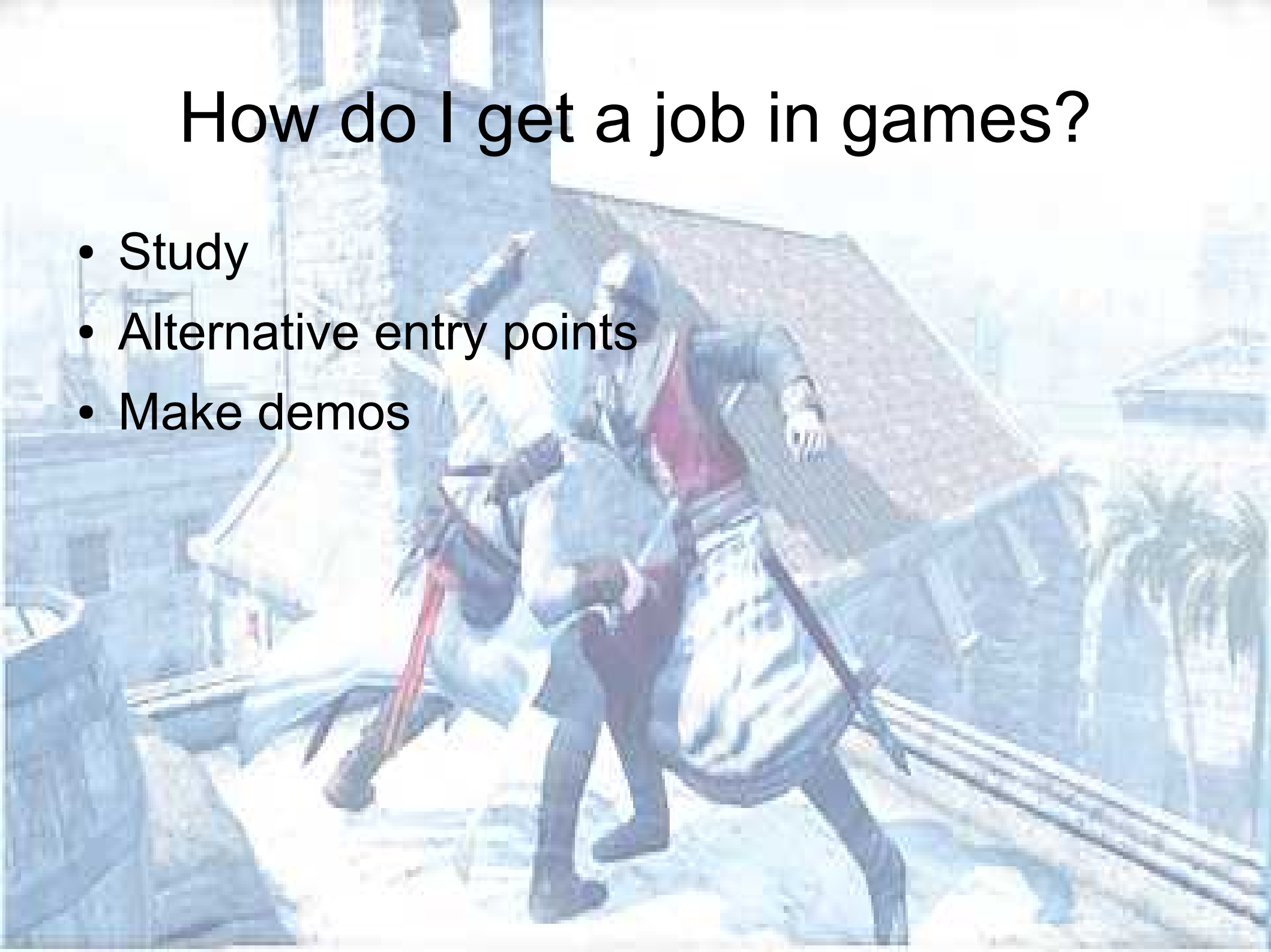
Get into games



Please note that the material in these slides does not represent the views of Sony Computer Entertainment Inc. or any of its subsidiaries.

How do I get a job in games?

- Study
- Alternative entry points
- Make demos



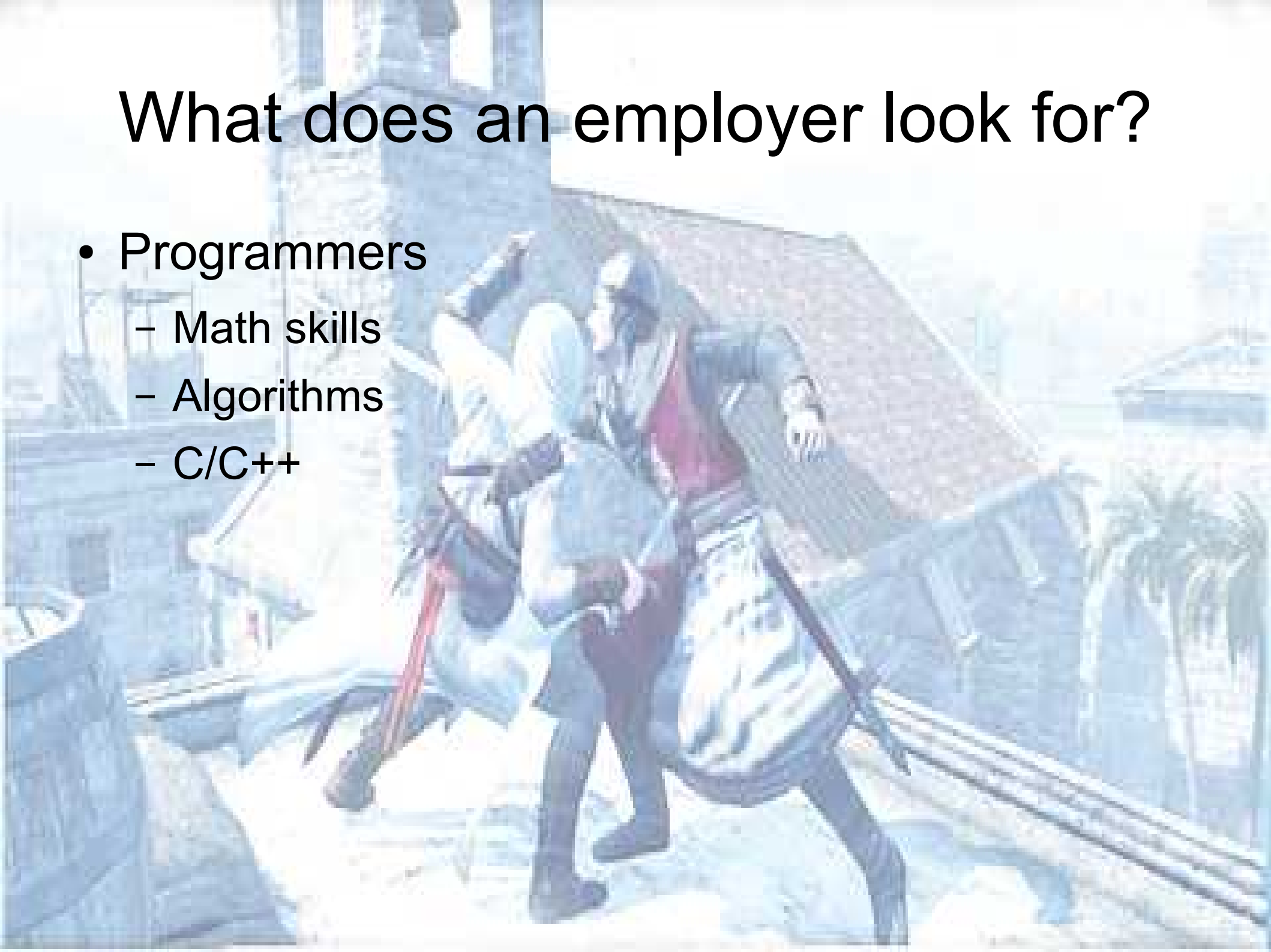
Who are the games industry?

- Console manufacturers
- Publishers
- Development studios
- Middleware
- Outsourced Art



What does an employer look for?

- Programmers
 - Math skills
 - Algorithms
 - C/C++



What does an employer look for?

- Artists
 - Max/Maya
 - Models
 - Landscapes
 - Photoshop
 - Textures
 - Front-end
 - Animation
 - Classical background helps



Console manufacturers

- PS3, Xbox, Wii
- Phone makers
 - Nokia
- Chip makers
 - Intel
 - AMD

Publishers

A group of men in suits standing in a line outdoors, possibly at an awards ceremony or formal event. The image is faded and serves as a background for the text.

- Finance game development
- Marketing
- QA
- User support

Development studios



- Write code
- Generate artwork
- Design concepts
- Tools
- Technology

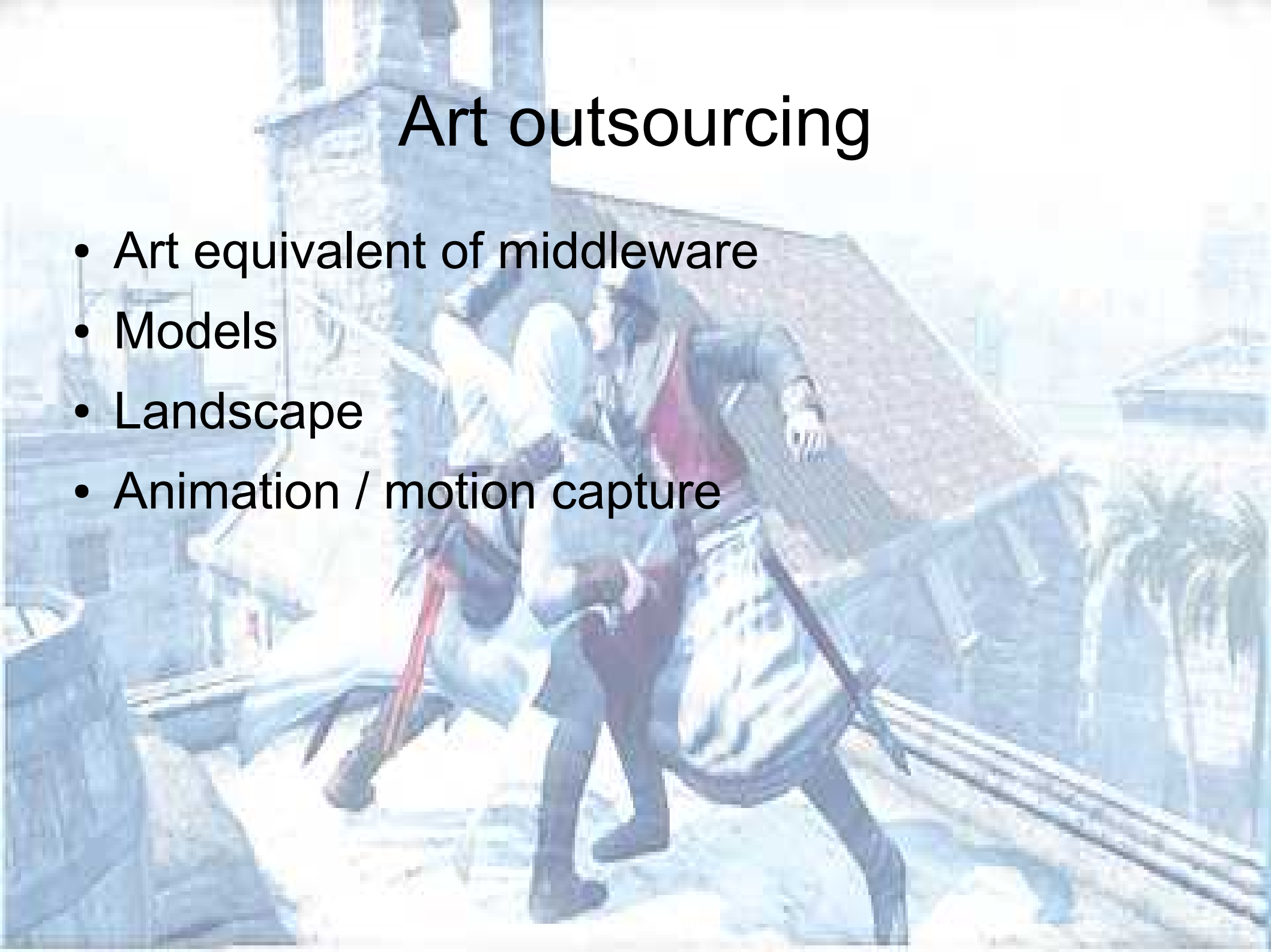
Middleware

The background of the slide features a collection of interlocking gears of various sizes and colors, including shades of blue, grey, and brown. The gears are arranged in a way that suggests a complex mechanical or computational system, with some gears in sharp focus and others blurred in the background.

- Artificial intelligence
- Physics
- Rendering
- Video playback
- Audio
- Scripting engines

Art outsourcing

- Art equivalent of middleware
- Models
- Landscape
- Animation / motion capture



Publishers

A group of men in suits standing in front of a brick building. The image is faded and serves as a background for the text.

- Sony
- EA
- Nintendo
- Activision
- Rebellion
- Ubisoft

Life

- In at 10:00
- Casual Dress
- Work Late



Life...

- Crunch time... work all night!



Rewards

- Creative work environment
- Bonus payments
- Credits

Downers

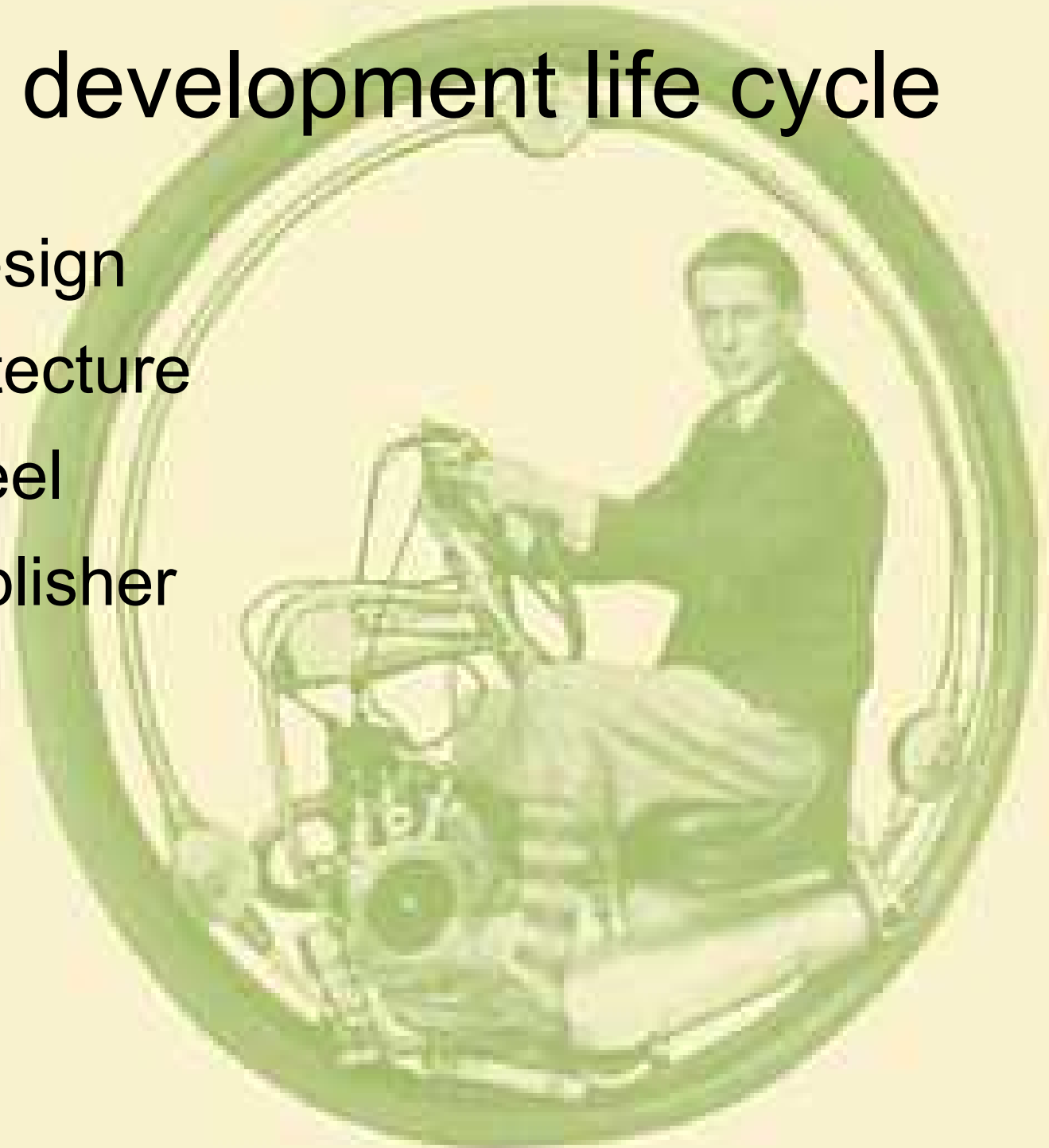
- Small studios
 - Unstable employment
- Large studios
 - Production line
- Relatively poor pay

Upside

- Better conditions than Film and TV

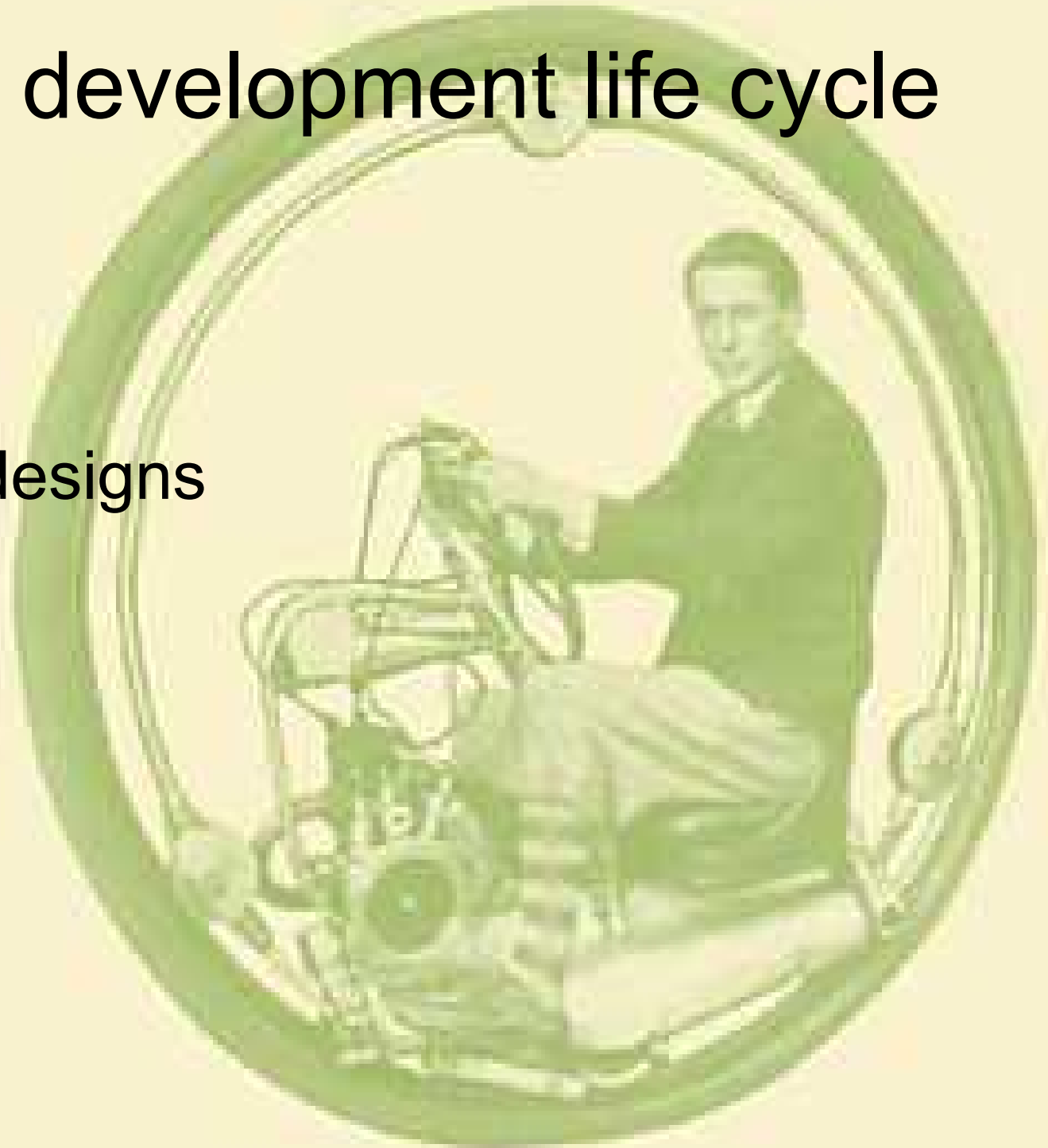
Game development life cycle

- Concept design
- Code architecture
- Look and feel
- Pitch to publisher



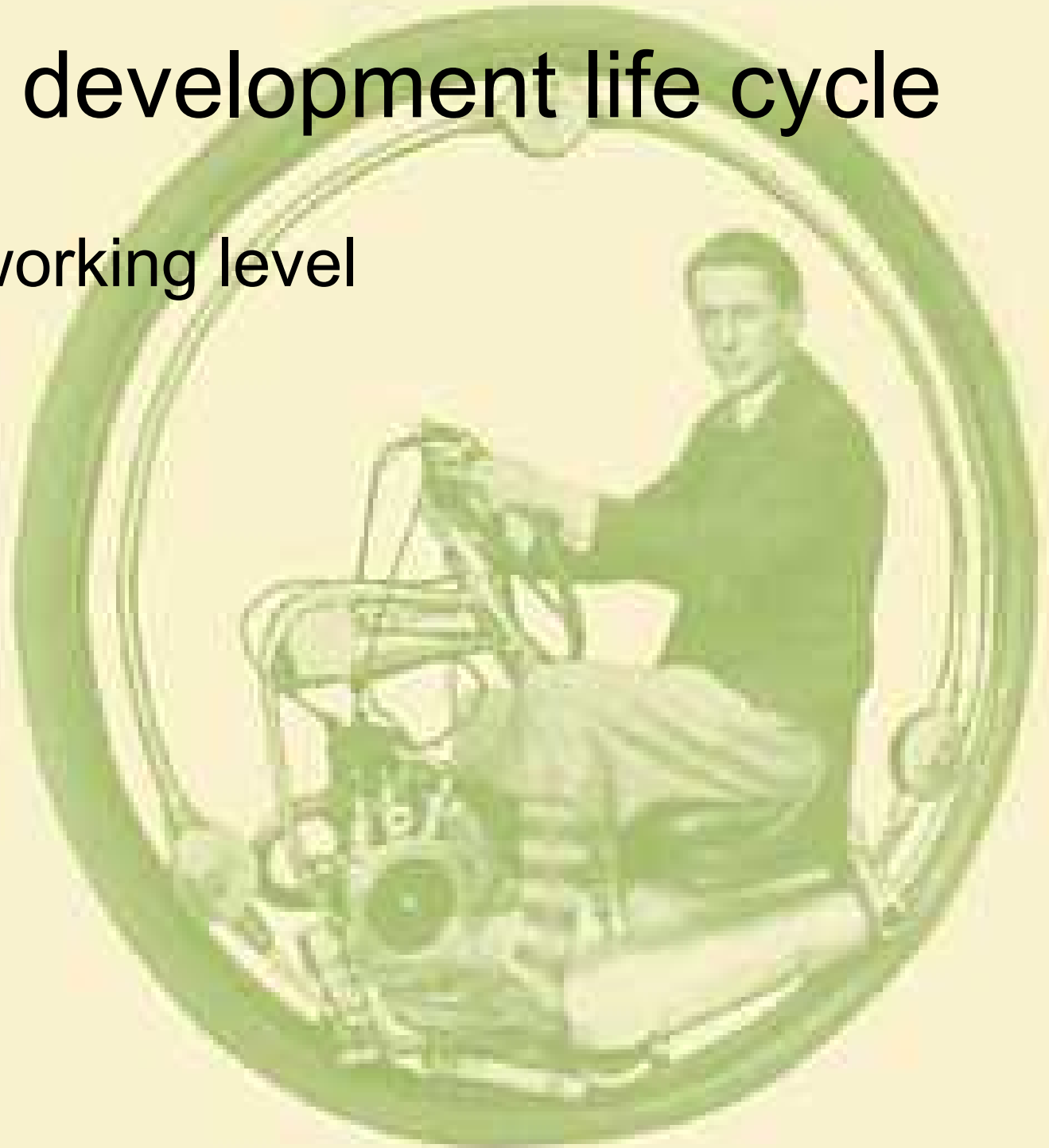
Game development life cycle

- Prototype
- First level
- Character designs



Game development life cycle

- Complete working level
- Effects
- AI tuning



Game development life cycle

- Complete play-through
- Internal Testing
 - A Game stoppers
 - B Unacceptable bugs
 - C Acceptable bugs
 - D Feature requests



Coding

- Most studios use a dialect of C++
 - No exceptions
 - No RTTI
 - No STL

Coding

- Memory allocation
 - avoid malloc
 - overload new/delete
 - pool allocation

Coding

- Determinism
 - Thread planning
 - Verification/hashes
 - Replays

Coding

- Basic game loop
 - AI
 - Physics
 - Particles
 - Menus / overlays
 - Rendering
 - Post effects

Coding

- Profiling
 - “hot” functions
 - Multithreading stalls
 - O/S calls

Coding

- Multithreading
- PS3
 - 2 PPU hyperthreads
 - 6 SPU threads
 - 6 DMA engines
 - Fragment shader threads

Coding

- Rendering
 - PC OpenGL / DX
 - minimise API calls
 - 50,000 cycles for API call
 - Console display lists
 - minimise data size
 - DMA efficiency

Coding

- Rendering
 - LOD models
 - Shadow models
 - Portals / occluders
 - Geometry streaming
 - Implicit surfaces

Coding

- Audio
 - 200+ channels in
 - 5 or more out
 - filters
 - 3D

Coding

- AI
 - Agent based models
 - Fear
 - Aggression
 - Anger
 - Path finding
 - A*
 - Crowd simulation

Coding

- Animation
 - 3+ Hours
 - Compression
 - Blending

Coding

- Tools
 - Game editors
 - Character editors
 - Animation editors
 - AI editors
 - Light map generators
 - LOD generators
 - AI path processing

Resources

- IGDA: Small game developers
- Gamasutra: Technical information
- <http://www.ibm.com/developerworks/power/cell/>



Questions

- Games industry
 - Java games / XNA?
- Technical
 - C/C++?
 - Graphics?