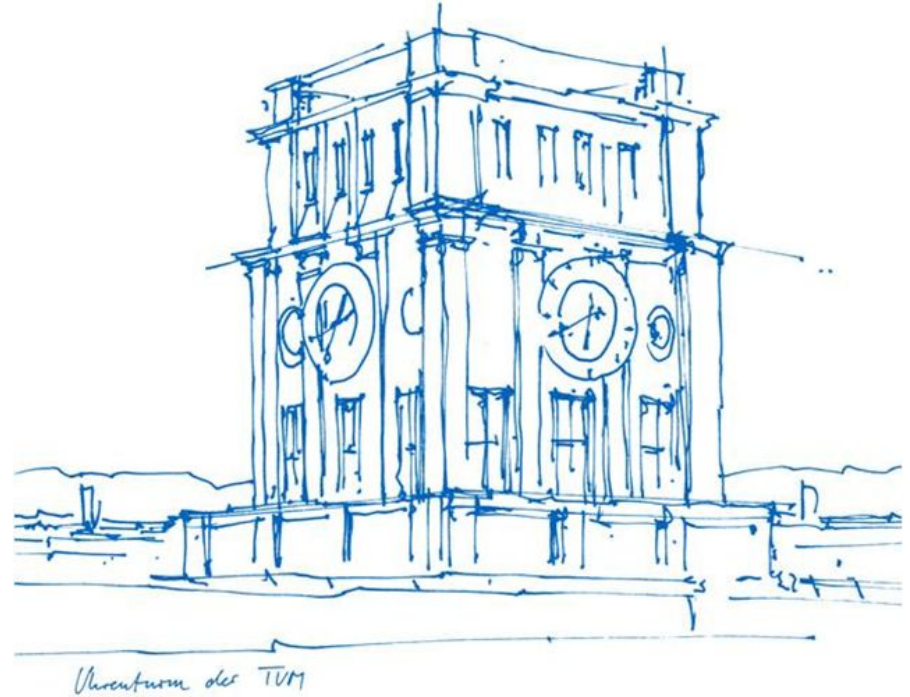# Game Proposal Rebomb

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Chair of Computer Graphics and Visualization
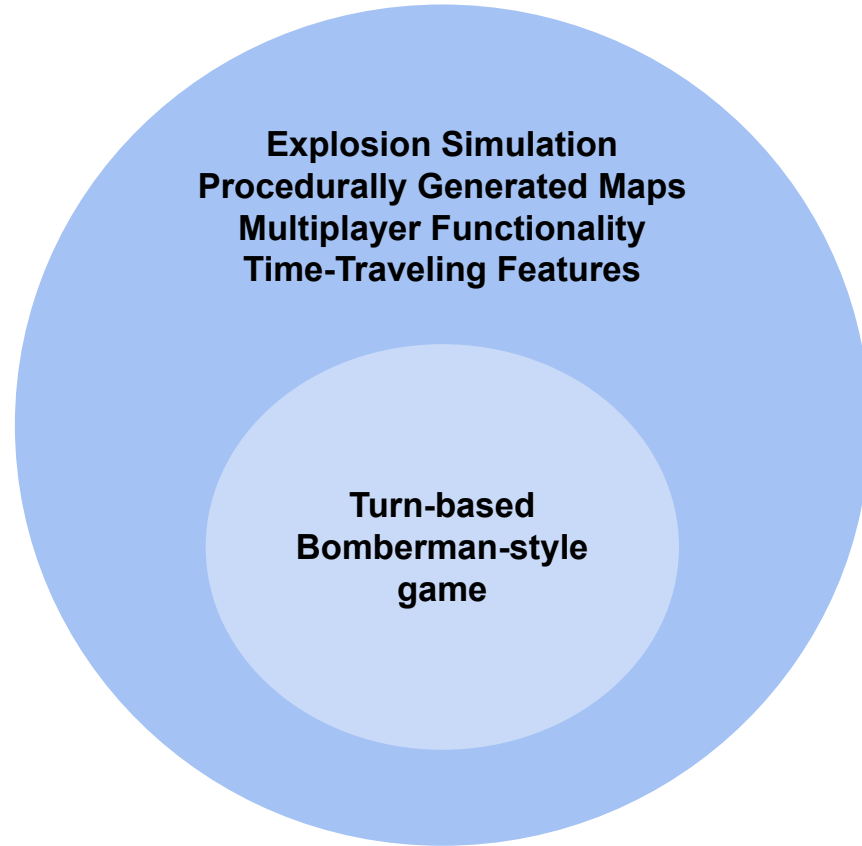Garching 05.11.2024

Uhrenturm der TUM

Game Description

- Turn-based, maze-based, multiplayer game
- Objective is to place bombs strategically to kill other players
- Last player standing wins
- Collectibles to collect resources, hourglass to time travel and power-ups for stronger bombs
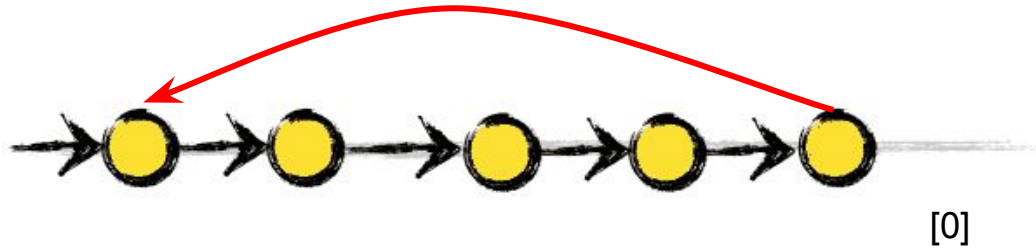
"Big Idea" Bullseye

Explosion Simulation
Procedurally Generated Maps
Multiplayer Functionality
Time-Traveling Features

Turn-based
Bomberman-style
game

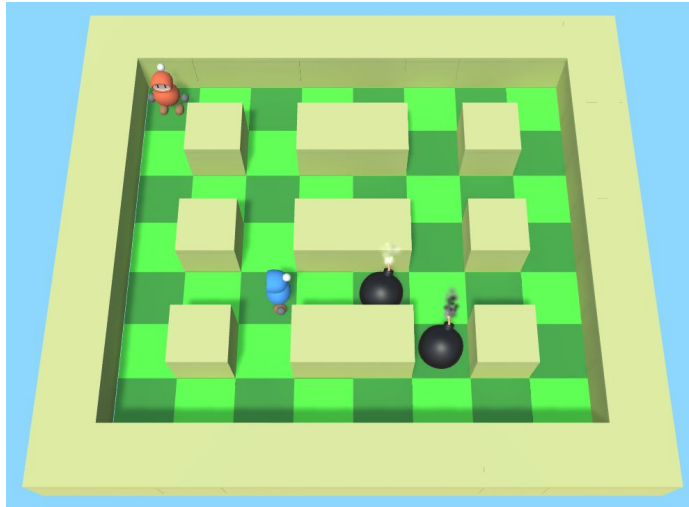# Technical Achievements

Snapshot recording

- Record every state
- Replay states for time travel

[0]

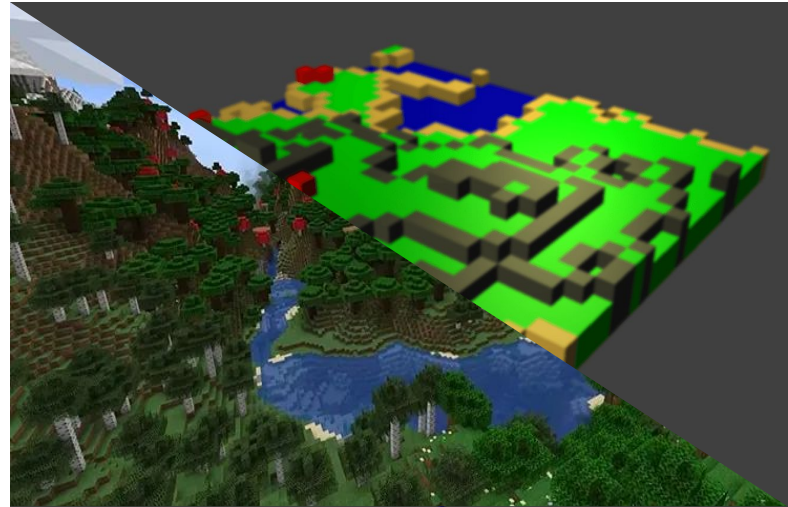# Technical Achievements

Multiplayer

- Multiple players
- Players synchronized

[1]

Procedural Generation

- Seed generated
- Scalability & replayability

[2], [3]

Technical Achievements
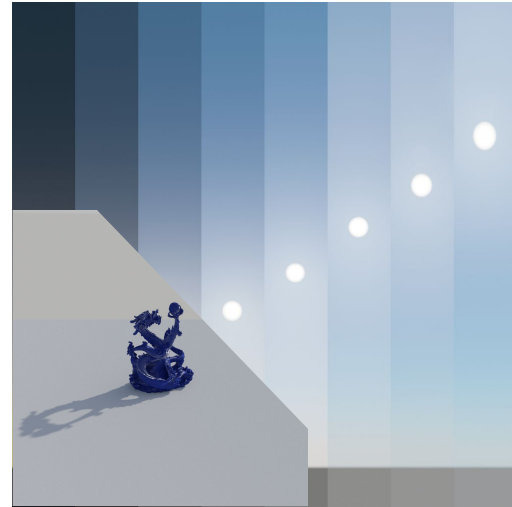
Particle Systems Explosions

- Cool explosions!
- Identify bombs & objects

[4]

Environment Change

- Lighting changes
- Reinforce time progression

[5]

Layered Develop Description

Extra

High Target

Desirable Target

Low Target

Functional Minimum
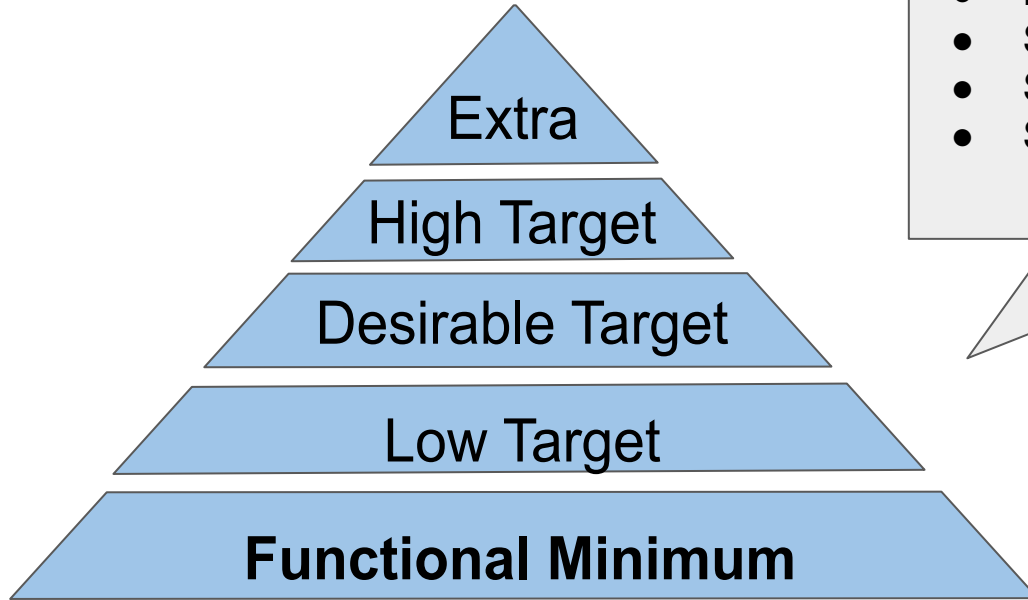
- Turn-based gameplay
- Player move & place bombs
- Simple map & objects
- Simple resource & bombs
- Simple assets & GUI

Layered Develop Description

Extra

High Target

Desirable Target

Low Target

Functional Minimum
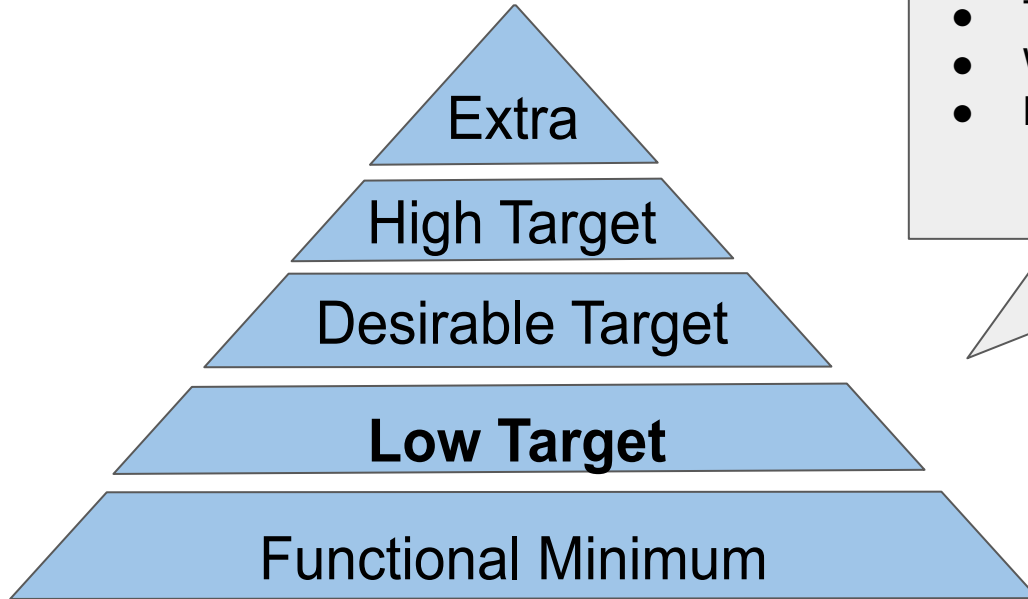
- Cascaded explosion
- Time travel: rewind K turns
- Weapon and resource system
- More assets & full GUI

Layered Develop Description

Pyramid levels (bottom to top):
- Functional Minimum
- Low Target
- **Desirable Target**
- High Target
- Extra
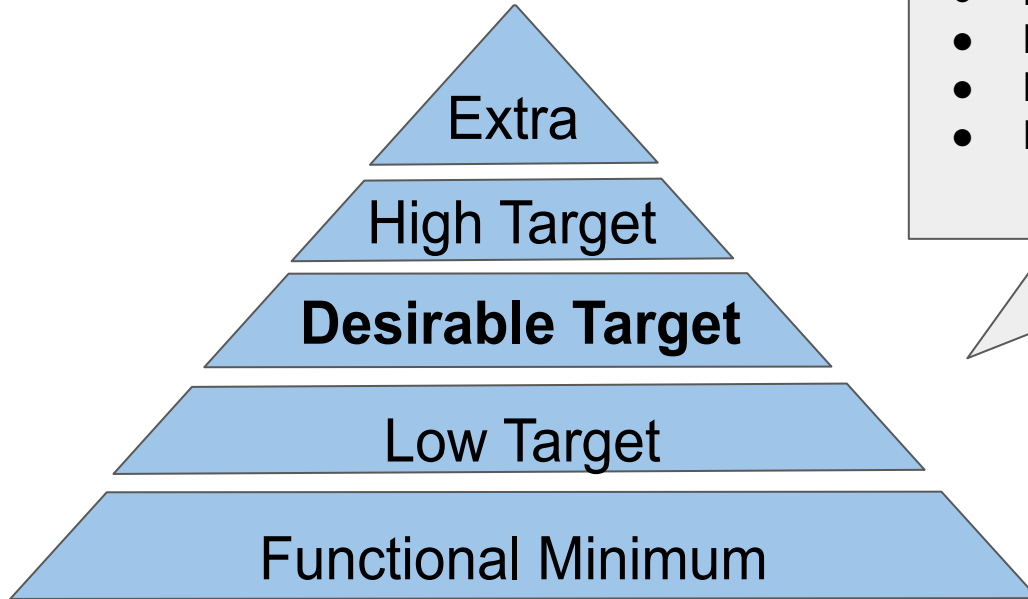
Desirable Target callout:
- Explosion simulation
- Map generation
- Local multiplayer
- More weapons and objects
- Revisit numerical design

Layered Develop Description

Extra

High Target

Desirable Target

Low Target

Functional Minimum
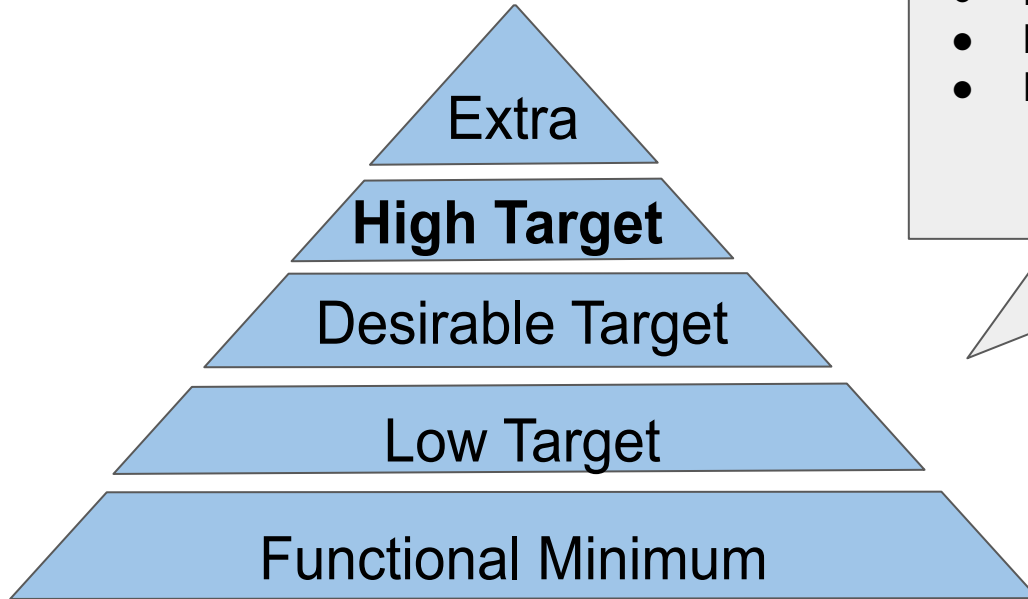
- Remote multiplayer
- Better mechanics
- Refine characters & animations

Layered Develop Description

Pyramid levels (bottom to top): Functional Minimum, Low Target, Desirable Target, High Target, **Extra**
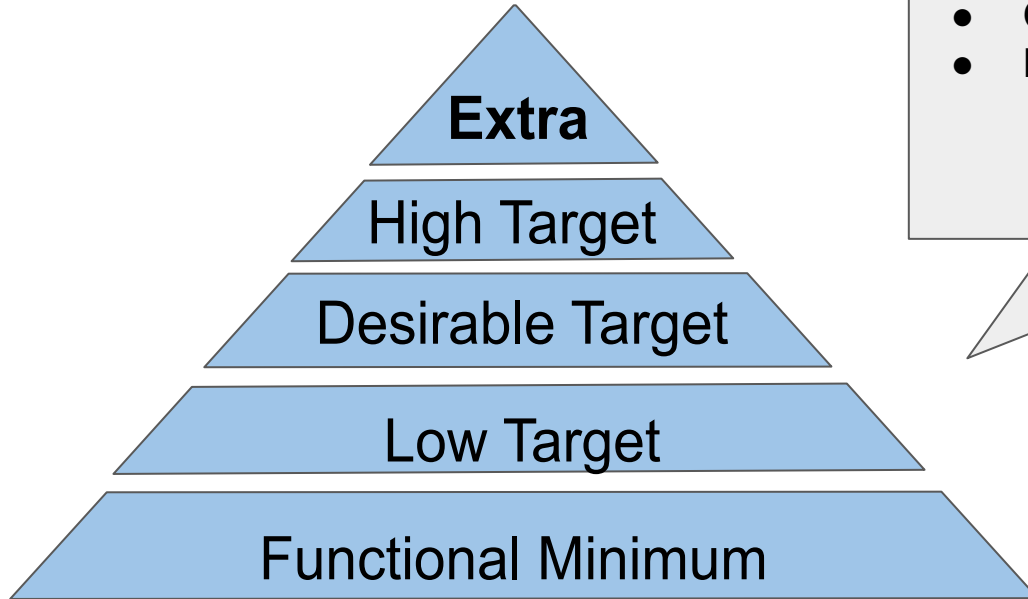
- Online multiplayer
- Explore more time-traveling possibility

Time Schedule

Date	Milestone	Week	Layer	Task	Expect Hours	Actual Hours
Nov 06-12	**Prototype**	1	Prototype	physical Prototype	4 * 5	
			Minimum	simple assets	5	
				simple map & static object	5	
				player move & item place	5	
				simple GUI	5	
Nov 13-19		2		active & negative bomb	6	
				resourse system	6	
				interactive map & object	6	
				turn-based gameplay	6	
				version integration	4 * 4	
Nov 20-26		3	Low	specifical assets	8	
				time travel mechanism 1/2	8	
				weapon & interactive obje	8	
				full GUI	8	
				version integration	4 * 2	
Nov 27-Dec 03	**Interim demo**	4		time travel mechanism 2/2	8	
				cascaded explosion refine	8	
			Desirable	map generation 1/3	8	
				local multiplayer 1/3	8	
				version integration	4 * 2	

Time Schedule

Dec 04-10		5	Desirable	map generation 2/3	8	
				local multiplayer 2/3	8	
				explosion effects 1/2	8	
				more weapon and objects	8	
				version integration	4 * 2	
Dec 11-17		6		map generation 3/3	6	
				local multiplayer 3/3	6	
				explosion effects 2/2	6	
				numerical refine	6	
				version integration	4 * 4	
Dec 18-24		7		remaining tasks & test	4 * 10	
Dec 25-31		8	holiday(Dec 24-Jan 06)		0	
Jan 01-07	**Alpha release**	9			0	
Jan 08-14		10	High	remote multiplayer	2 * 8	
				assesment & bugfix	2 * 8	
				version integration	4 * 4	
Jan 15-21	**Playtesting**	11		remote multiplayer	2 * 8	
				improve mechanics	8	
				refine animation/characters	8	
				version integration	4 * 4	
Jan 22-28		12		remaining tasks & test	4 * 10	
Jan 29-Feb 04	**Final release**	13	Extra	extra tasks & test	4 * 10	

Assessment

Bomb Placement and Activation:

- Players will be able to place bombs with activated fuses (explodes in a few turns) or leave them unlit (can be triggered by other explosions).

Turn Back Time Ability:

- Allows players to revert to a previous game state while maintaining the most recent bomb's timing.
- Encourages both offensive and defensive strategies.

Main Strength: A blend of strategic planning and suspenseful chain reactions.

- "Turn back time" feature provides strategic depth and unpredictability.

Target Audience: Fans of Bomberman, turn-based tactics, mind games, and competitive strategy games.

Assessment

Criteria for Success

- **Engagement and Replayability:** Players should return, eager to try new strategies.
- **Balanced Mechanics:** Mechanics should favor skillful play over luck.
- **Strategic Depth:** Opportunities for advanced tactics and improvement with experience.
- **Player Retention:** Sustained multiplayer interest, reflected in a strong player base.
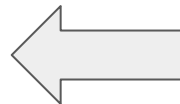
- **Solid Mechanics**
- **Good Numerical Design**
- **Diverse Map Design**
- **Interesting Map Elements**

Thank you for your time!

We wait for your feedback!

References

Images:

- [0] Driessen, V. 2010. "A Successful Git Branching Model." *Nvie.Com*. Retrieved (https://nvie.com/posts/a-successful-git-branching-model/).

- [1] eugene150. 2018. "How to Make a Game Like Bomberman With Unity." *Kodeco Forums*. Retrieved (https://forums.kodeco.com/t/how-to-make-a-game-like-bomberman-with-unity/38307).

- [2] Varikuti, Mohit. 2022. "How Exactly Does Minecraft World Generation Work? - Mohit Varikuti - Medium." *Medium*, April 23. Retrieved (https://mohitv.medium.com/how-exactly-does-minecraft-world-generation-work-e50c07693c9a).

- [3] McCready, Stewart L. 2017. "Procedural Generation." *Stewart L. McCready*. Retrieved (https://stewmcc.com/project/procedural-generation/).

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- [5] Advanced Micro Devices, Inc. 2022. "Sun & Sky — AMD Radeon ProRender." Retrieved (https://radeon-pro.github.io/RadeonProRenderDocs/en/plugins/blender/sun_and_sky.html).