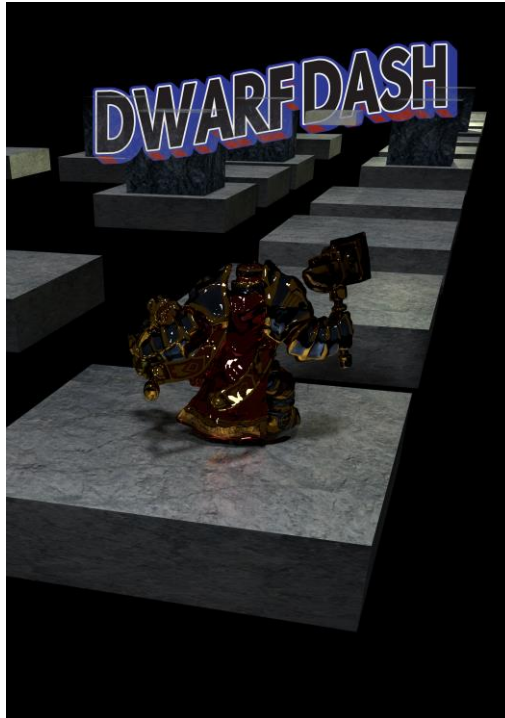


# Dwarf Dash

Miran Jank <01526438>, 033 532

Daniel Hirtenlehner <01527214>, 033 532



	Feature	Points	Description (Usage)
Gameplay	3D Geometry	3 Points	Objects loaded with ASSIMP
	Playable	3 Points	
	Advanced Gameplay	3 Points	
	Min. 60 FPS and Framerate Independence	3 Points	Also insured by Nvidia PhysX
	Win/Lose Condition	3 Points	Getting to the finish line / falling of platforms / getting caught by the cloud of death
	Intuitive Controls	2 Points	W A S D [Space]
	Intuitive Camera	2 Points	FPS Camera
	Illumination Model	2 Points	Lights in the levels
	Textures	2 Points	
	Moving Objects	2 Points	Also insured by Nvidia PhysX
	Documentation	1 Point	
	Adjustable Parameters	1 Point	Config class ensures parameters are loaded from the settings.ini
	Collision Detection (Basic P	4 Points	Nvidia PhysX ( Boxes, Spheres, Capsules )

	<i>Advanced Physics</i>	6 Points	Nvidia PhysX
	<i>Heads-Up Display</i>	4 Points	Point counter

	<b>Feature</b>	<b>Points</b>	<b>Description (Usage)</b>
<b>Effects</b>	<i>Environment Map</i>	8 Points	Skybox
	<i>Simple Normal Mapping</i>	4 Points	Used on platform models
	<i>CPU Particle System</i>	8 Points	Used on torches

	<b>Feature</b>	<b>Points</b>	<b>Description (Usage)</b>
<b>Optional effects</b>	<i>Specular Map</i>	4 Points	Used on platform models

	<b>Feature</b>	<b>Description (Usage)</b>
<b>User Interaction</b>	<i>"WASD" Keys</i>	Movement of the dwarf
	<i>Mouse</i>	Camera view direction
	<i>Space Key</i>	Jump
	<i>F1</i>	Toggle wireframe mode
	<i>F2</i>	Toggle back-face culling
	<i>F4</i>	Toggle simple normal mapping on/off
	<i>R</i>	Resets current level

<b>Additional Libraries</b>	<i>Assimp</i>	<a href="https://www.assimp.org/">https://www.assimp.org/</a>
	<i>Freetype</i>	<a href="https://www.freetype.org/">https://www.freetype.org/</a>
	<i>Soil (stb_image.h)</i>	<a href="https://github.com/nothings/stb/blob/master/stb_image.h">https://github.com/nothings/stb/blob/master/stb_image.h</a>
	<i>Physx</i>	<a href="https://www.developer.nvidia.com/physx-sdk">https://www.developer.nvidia.com/physx-sdk</a>
	<i>OpenGL framework (GLFW)</i>	<a href="https://www.glfw.org">https://www.glfw.org</a>
	<i>OpenGL Mathematics (glm)</i>	<a href="https://glm.g-truc.net/0.9.9/index.html">https://glm.g-truc.net/0.9.9/index.html</a>

<b>Ressources</b>	<i>Learn OpenGL</i>	<a href="https://learnopengl.com/">https://learnopengl.com/</a>
	<i>Textures</i>	<a href="https://www.cg.tuwien.ac.at/courses/Textures/">https://www.cg.tuwien.ac.at/courses/Textures/</a>
	<i>Skybox Texture</i>	<a href="https://opengameart.org/content/elyvisions-skyboxes">https://opengameart.org/content/elyvisions-skyboxes</a>

## Notes on current development status

- All models without a real texture (cloud, goal, coin, ...) look weird if normal mapping is turned on because they don't have specular or normal map (yet)
- Particle system currently only works on the start position of the player