1 Example Project Report

Project name: World of Mario Craft
Project members: Chris Metzen, Shigeru Miyamoto
Goal: The name says it all, Mario in WOW.

What did we achieve: In our game, Mario can drive around in the World of Warcraft. In Figure 1 we see the world, Mario, and his Kart. His Kart is going to go over the bridge. He can collide with buildings and terrain, and he can drive off the cliff, or white water raft down the waterfall. When on the waterfall, his Kart converts into a boat like those Water-Land tour boats.

What you got off the Web or from other sources: We got the Pagoda model from the Web. Everything else we implemented ourselves.

What we implemented and have working. The technical components we implemented are:

- Procedural terrain with height based shading
- Waterfall illusion using reflection mapping and animated textures
- Distant fog
- Sky model simulating scattering
- Mario’s Kart becoming a MarioBoat with geomorphing
- Particle systems for splashes of water around the MarioBoat and reflections in the Boat.
- Collision Detection of Kart with buildings on land, and Boat with side of waterfall.
- ...

Now for details on each of our components.

1. Procedural terrain For procedural terrain we implemented the hardware tessellation algorithm described at this web-site http://www.gamedev.net/topic/531164-d3d11-hw-tessellation-for-terr...
   ...
   We implemented this algorithm as follows: ...

2. Waterfall motion ...

3. Waterfall appearance...

4. Geomorphing: ...

What we did not implement: We thought we would have more characters (Peach, Luigi, Baby Mario, Yoshi, etc.) but we ran out of time.

What you learned:

- What was the best thing(s) you learned? Bringing the Mario interactions into WOW was a lot of fun. We learned a lot about terrains, particle systems, photorealistic rendering, collision detection and physically-based car animation.
• What were the gotchas? It was harder than we thought to make the classic Mario appearance fit into the WOW aesthetic, so it looks a bit like we photoshopped Mario into the frame, rather than having him be more seamless.

**Effort.**
Both developers worked on it 24/7 for 5 weeks.
The first week we planned the whole game and split components.
The second week Chris worked on the design of the world, and Shigeru focused on designing Mario’s motion, collision detection. We first developed independently, but in the last 3 weeks we worked together.
Yes, we want the same grade.

2 **Images from our project**
Figure 1: Mario near the bridge.
Figure 2: Characters