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The three topical areas that we researched were economic, professional, and legal constraints.

Regarding the economic topical area, in this project, we will be using PixelLab API to generate sprites for our game. The API bills us per image generated (e.g., \$0.0079 for each 64x64 image, \$0.0132 per image for each 400x400). As we continue to prototype and develop our project, these costs could lead to some financial challenges down the line. Other tools, such as Godot are opensource, so we have a mix of both free and paid tools. The funds will be supplied personally.

We currently don't have a lot of experience using and training AI models. So, because this has become an increasingly large field in computer science, learning about these topics will be very beneficial. Having expertise or even working knowledge of AI will make us much more employable and help us better understand the industry we are entering.

Regarding the legal constraints, our project must comply with copyright and data usage laws when utilizing pretrained models, datasets, and visual assets. All datasets and APIs we use must be verified to ensure they have proper licensing and allow modification and redistribution. The sprites and character models generated through our pipeline must not infringe on any third-party intellectual property. Additionally, we must adhere to the terms of service for any external APIs or tools, such as PixelLab, to ensure our usage remains legally compliant.

There are many studies that show that AI is detrimental to the environment due to the extensive power that it uses. So, when working on this project, we will be mindful of limiting our prompts and queries.