**Project Proposal**

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**What:**

We are building a program that will help tourists create travel itineraries. In basic terms, we want to make a platform that can allow a user to determine the most cost-efficient transit from tourist attraction to tourist attraction. Given a total dollar amount from the user, we will give them all possible attractions they can travel to in Pittsburgh that keep them within the budget. Additionally, we want to make sure that these scenic spots are places that fall within the interest of the user. If they enjoy sports but are not fans of art or music, we want to make sure we are not taking them to a concert or art show within their budget. The end goal is for tourists to be more informed so that they can make the best use of their travel time while also having the peace of mind that they are not spending more money than they thought they were.

**Why:**

We find this problem important because traveling/tourism can be a stressful event, but that stress takes away from the enjoyment of it all. Having to worry about transportation, timing, and money are all things that need to be considered before actually touring a city. We want to take that stress off the user’s hands and make that task automated so the user can spend more time enjoying their trip and less time stressing. The four of us enjoy traveling, and we all believe that we can combine our expertise in this area to make a system that will be intuitive to use, cover the important components of travel, and actually have practical use.

**How:**

Our team is familiar with Java, so we looked for a language that is familiar to us but also has a better user interface. After researching we decided that C# would be a good median for both of our requirements. We will use a large network of nodes in an undirected graph that contains information for traveling between locations and details about those sights for whichever city the user is in. We will be using Visual Studio to build our program. There will be 3 phases and 3 windows on the application. First, they select their interests from a checklist and each category will contain an array of locations. The second phase will then narrow down locations from their interests and when selected will enter a list of all interested locations. Each of these locations will then correspond to a node on the graph. The program will then run Dijkstra’s algorithm to find the best path. The program will then return the results on the best path to take to the user.