- 1: Introduction
    - 1.1 Purpose

      The purpose of this document is to define what our brainstorming project is, the problems that this project is designed to solve, and how the solution will work.

    - 1.2 Scope

      This document is solely created for the brainstorming project.

- 2: Positioning
    - 2.1 Business opportunity

      The end product could be marketed to students that need to collaborate on their group projects. Entrepreneurs could make use of this product when they are searching for new business ventures. It can help established businesses brainstorm new ideas. Free to use, this software would make revenue by displaying ads related to the ideas. A premium ad-free version could also be available for purchase. Users could also use a subscription-based service for hosting their project online.

    - 2.2 Problem statement

      The problem of (being able to agree on an idea) affects (students and anyone that needs to collaborate on creating a project). The impact of the problem is (wasting too much time while trying to come to an agreement). A successful solution would include (using a system to narrow down the ideas)

      The problem of (brainstorming as a group) affects (anyone that is looking for an unbiased solution). The impact of the problem is (that other ideas may not get the same amount of consideration between members of the team). A successful solution would include (using the anonymity features that this program will provide).

      The outcome of ideas chosen during group brainstorming can be influenced by personal bias between the group members. People that naturally tend to be leaders can inadvertently steer the group and can lead to unfairly chosen ideas. While listening to other ideas being presented, it could cause the people in the group to get hung up on one specific approach. This could cause people to only think of ideas related to that approach, which would reduce the diversity of ways that the problem can be solved.

      People with extrovert personalities are more likely to put out their idea first and explain it more effectively to the rest of the group, while ideas that are suggested by people that aren't as good at public speaking situations may have difficulty presenting their idea to the rest of the group. The loudest person in the room may not always be right.

      Some members could be afraid of looking foolish and decide not to put their idea out there, and it may not get mentioned. However, sometimes an idea they thought was silly ends up being a great solution.

The product can be used assist the formation of ideas and goals, and to reach agreement, especially in large teams. The goal of the project is to help teams coordinate and work better together. The project is also meant to boost the creativity and diversity of brainstorming sessions.

- 3: Stakeholder and user descriptions

  Daniel

  C++, C#, Familiar with JavaScript

  Role: Developer

  Aidan

  C++, C#, Java

  Role: Developer

- 4: Product overview
  - 4.1 Product perspective

    While there is standalone mind mapping software already available, this program not only includes a multi-user mind map, but a suite of settings and many other features useful for brainstorming and organizing projects. This program will be very customizable to fit the needs of a wide variety of projects. Not every group may need or want certain features to be available, so this program will be full of options that can be switched on or off.

  - 4.2 Summary of capabilities (summarize benefits the program will provide)

Benefits	Supporting Features
Easy to visualize ideas for every part of the project in one place. This allows the users to see the bigger picture of what they're all working on. Able to organize the ideas by categories such as specific problems they are made to solve.	Graphical mind mapping that updates as other users add to it
Useful for situations when the user or group does not know where to begin, the prompt generator can provide ideas and inspiration for a variety of projects.	Prompt / idea generator
Able to run on a local network, this software can be adapted to be useful in many different	Networking

environments. For larger scale projects and server storage, groups can be created and ran from a web host.	
Once work on the project begins, goals can be set and tracked in relation to how much time is left before a deadline, if one exists.	Goal / progress tracking, countdown timers for deadlines
Makes it easy to narrow down ideas.	A voting system for deciding between ideas, including an idea tournament mode, coin flipper for tie breaks
Encourages users to participate.	A contribution score based on user interaction
Helps others understand the idea someone comes up with.	Has various ways for the users to graphically describe their ideas, such as flow charts
Allows users to see which ideas are popular.	Ideas can receive votes or "likes"
Votes and other information can be shown or hidden depending on the needs of a specific group.	Admin options that can change visibility of votes and many other things

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  - o 4.3 Assumptions and dependencies

    We assume that we will be able to run the server host on a google web server

    Security is precariously swept under a rug

    We assume all the users are friendly and civil

    Internet access is needed if the user wants to join online "crowds".

    At minimum, a LAN connection is required to join local "crowds"

    Dependent on requirements needed to support C# executable programs

- 5: Product features

  5.1 Graphical mind mapping

  1. Users can drag idea nodes to organize them
  2. Users can add branching nodes to existing ideas to further expand on specific details

  5.2 Prompt generator

  1. Generate prompts for essays
  2. Generate project ideas

  5.3 Network support

1. Support for real time updates of the mind map
2. Contribute from anywhere
3. Web server host
4. LAN host

5.4 Goals and progress tracker

1. Set goals and checklists
2. Set countdown timers for deadlines

5.5 Voting system

1. Allow users to vote on ideas
2. Idea tournament that narrows down many ideas
3. Includes an optional coin flipper for tie breaking

5.6 Contribution score

1. Tracks how much each user is interacting
2. Visibility to users is optional
3. Encourages users to interact and share their ideas

5.7 Idea Creation

1. Multiple ways to visualize ideas
   - Flow charts
   - Support for graphs and data visualization

2. Other users can add likes or comments to ideas
3. Users can write on a pro/con list that each idea has
4. Options can be set to make users appear anonymous to each other

5.8 Admin tools

1. Many settings such as visibility options can be changed as needed
2. View contribution history of any user

5.9 User account system

1. Stores information about each user as simple files
2. Support for logins

- 6: Constraints

Neither stakeholder has experience implementing network-based features, and not much experience with graphics such as what will be needed for the mind map interface.

- 9: Other product requirements

  Hosting for the internet server.