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# Smart Power Sprint 1

Team A2\_05

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# Product Mission

Smart power addresses the rise in the number of portable personal electronic devices, and their need to be regularly recharged. The goal of the project is to be able to use one preexisting charger to be able to charge a large number of connected devices, reasonably quickly.



# Users

- Students
- Travelling workers
- Families



# Market Research

- Many multi-port power adapters exist, but they connect directly to the wall and are expensive due to complex internal electronics
- Available USB-C splitters prioritize data transfer as opposed to power transfer
- No real market for multi-port USB-C power splitters

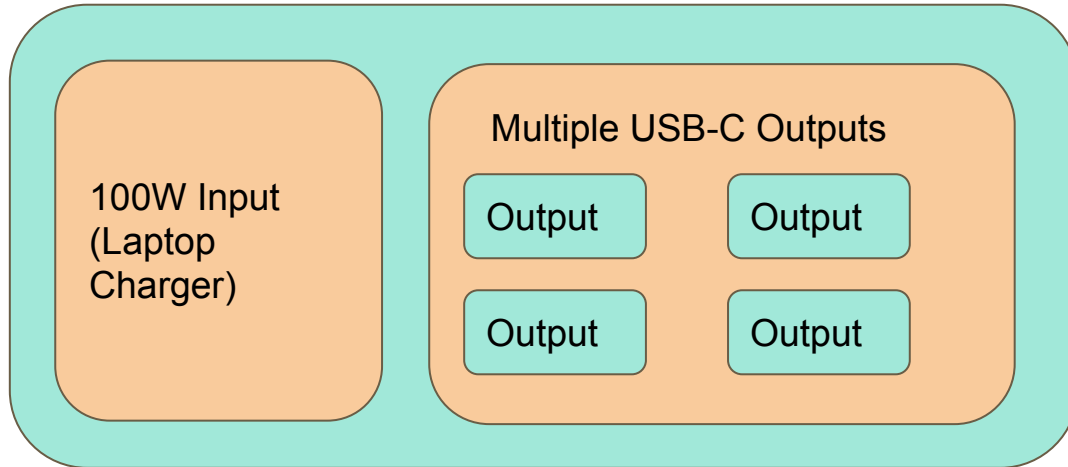


# User Stories

- College students in a group study space with limited power outlets, using this device to charge multiple users' devices at the same time
- A travelling worker in an airport, sharing an outlet with other travellers to charge their devices
- A family being able to charge a number of phones all at once while at home

# MVP

- A USB-C splitter using a laptop charger for power input, with multiple ports for output. Each output is at 5V (no fast charging)



# Technologies

- USB PD for interfacing to laptop power adapter and enabling fast charging
- USB-C as a physical connection to a variety of devices
- DC-DC Power Conversion to take power from laptop charger and output it to connected devices



# Development

- SPICE Simulation for circuit functionality
- Altium designer for circuit schematic design and PCB layout



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# Goals for Next Sprint

- Identify USB PD capabilities/constraints
- Identify target number of outputs and potential power capabilities