Step 0: Select a Team

Step 1: Define the Problem to be solved

* notice opportunities for change
* articulate goals
* identify factors influencing the design
* represent the system’s functions and relationships (system chart)
* articulate sub-problems to be solved
* generate questions of things you need to know (RFAIs)

Step 2: Acquire and assemble pertinent data

* Seek additional information to further define problem space (RFAIs)
* Answer questions to inform idea creation
* evaluate current solutions in market--look for analogies

Step 3: Identify solution’s constraints and criteria

* ordered list of requirements--manage complexity
* define measures of success

Step 4: Develop alternative solutions

* brainstorm ideas
* list and organize
* model ideas and anticipate potential outcomes
* compare and contrast ideas relative to requirements

Step 5: Select a solution based on analysis of alternatives

* systematic process
* evaluate metrics
* consider relative importance of criteria

Step 6: Communicate results

DO ITERATIONS OF PROCESS

Our Process  
Step 0: Select a Team-- team 59

Step 1: Define the Problem to be solved --build a robot to identify and move bins of various materials to their respective locations

* articulate goals--POCs
* identify factors influencing the design--HOQ
* represent the system’s functions and relationships (system chart) (FBD)
* articulate sub-problems to be solved (POCs)
* generate questions of things you need to know (RFAIs)

Step 2: Acquire and assemble pertinent data

* Seek additional information to further define problem space (RFAIs)
* Answer questions to inform idea creation (RFAIs)
* evaluate current solutions in market--look for analogies (research, reverse engineering, etc)

Step 3: Identify solution’s constraints and criteria

* ordered list of requirements--manage complexity (WBS)
* define measures of success (POCs)

Step 4: Develop alternative solutions

* brainstorm ideas (prototypes)
* compare and contrast ideas relative to requirements (HOQs to be)

Step 5: Select a solution based on analysis of alternatives

* systematic process (HOQ)
* evaluate metrics (POC)
* consider relative importance of criteria (HOQ)

Step 1: Problems to be solved: Walking Mechanism

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Step 1: Problems to be solved: Grasping Mechansim

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Step 1: Problems to be solved: Identification mechanism

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Step 6: Communicate results (report)