Prototype (Step 4)

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Prototype

- This is an **experimental phase**, and the aim is **to identify the best possible solution** for each of the problems identified during the first three stages.

- Design teams will produce a number of **inexpensive**, **scaled-down** versions of the product (or specific features found within the product) to investigate the problem solutions generated in the previous stage.

- It is the iterative generation of artifacts intended to answer questions that get us closer to our final solution.

Why we prototype

- To problem-solve and ideate

- To interact

- To start a communication

- To fail quickly and cheaply

- To test features and possibilities

- To manage the solution-building process

How to prototype

Start building

- The act of picking up some materials (post-its, tape, and found objects are a good way to start!) will be good to get you going. Later on you can get creative ideas while building it slowly.

Don't spend too long on one prototype

- You need to let go before you find yourself getting too emotionally attached to any one prototype. The disadvantage of this is that you will spend huge amount of time on it while you could have worked on better ideas.

Example of furniture prototypes fabricated from paper and glue

How to prototype

Build with the user in mind

What sorts of behavior do you expect from the user?
What do you hope to test with the user?
The answer to these questions will help focus your prototyping

Identify a variable

Identify what's being tested with each prototype. When tested, a prototype should answer a particular question

A prototype of printer built from cardboard for testing the variable : Ergonomics of operation

http://makingsociety.com/wp-content/uploads/2014/11/camera-cardboard-prototype-tested-e1416335429368.jpg

Types of prototype

Low-Fidelity Prototyping

- Low-fidelity prototyping involves the use of basic models or examples of the product being tested.

- For example, the model **might be incomplete and utilize just a few of the features that will be available in the final design**, or it might be constructed using materials not intended for the finished article, such as wood, paper, or metal for a plastic product.

- Low-fidelity prototypes can either be models that are cheaply and easily made, or simply recounts or visualizations of them.

Types of prototype :Low-Fidelity Prototyping

Automated seed sowing machine
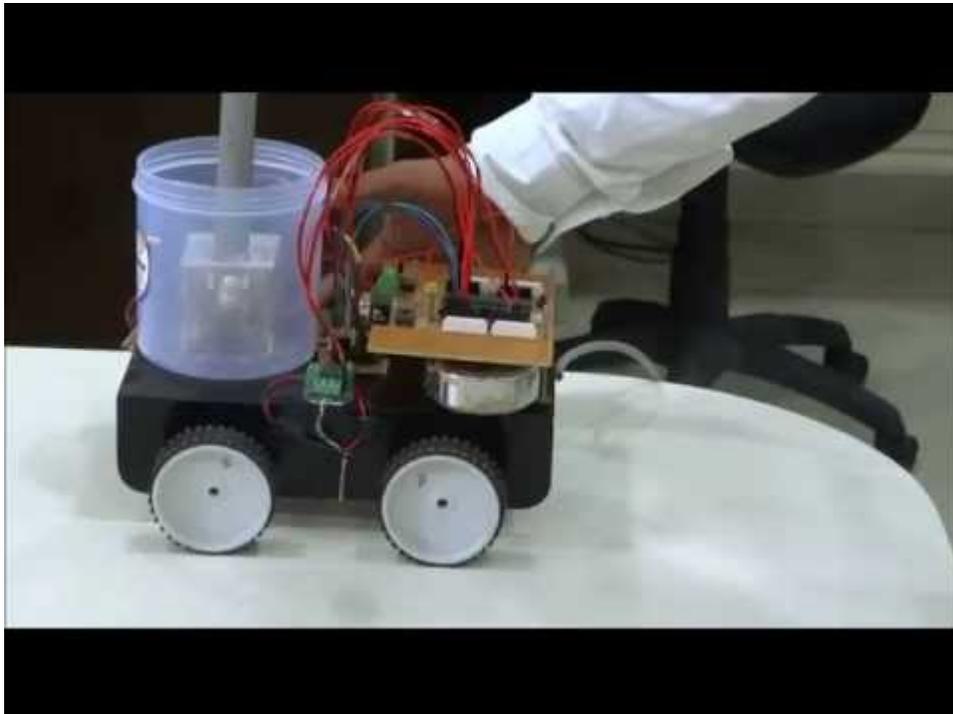
Material Used
- Metal Box
- Arduino board for control
- Toy parts

Purpose
Testing the automation capability
and control required of sowing seeds

*we are not considering for material
or strength of prototype

Types of prototype: High-Fidelity Prototyping

High-Fidelity Prototyping

- High-fidelity prototypes are prototypes that look and operate closer to the finished product.

- For example, a 3D plastic model with movable parts (allowing users to manipulate and interact with a device in the same manner as the final design) is high-fi in comparison to, say, a wooden block.

Types of prototype :High-Fidelity Prototyping

Two rows manual rice transplanter

Benefits of prototyping

- Prototyping **helps to eliminate ambiguities** and **improve accuracy in interpretation** of system requirements and functionality

- Prototyping helps to **ensure that the solution does what it is supposed to do** - not what the developer thinks it ought to do, or how

Thank You