

INTRODUCTION

19MO502 Additive Manufacturing-I
Unit -1 /Introduction
III Year / V Semester



WHAT'S A PROTOTYPE?

WHY PROTOTYPING?

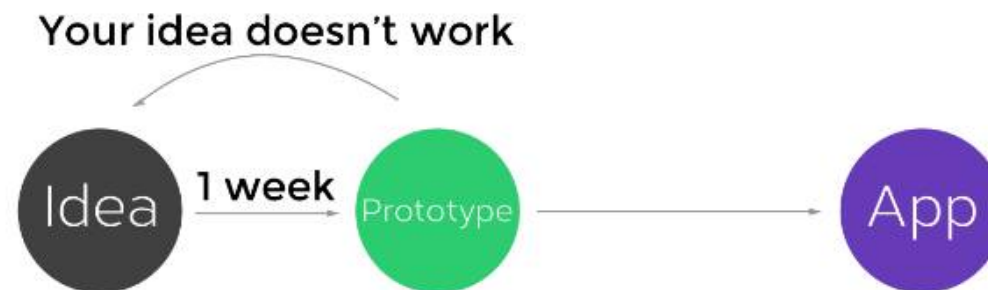
- A prototype is an early model of a product used for testing a concept or visualizing an idea.
- Before constructing a building, an architect needs to draw a plan of the building and make a model of the building.
- An aircraft company builds a prototype of an aircraft to test any design flaws before building and assembling an airplane.



Without Prototyping

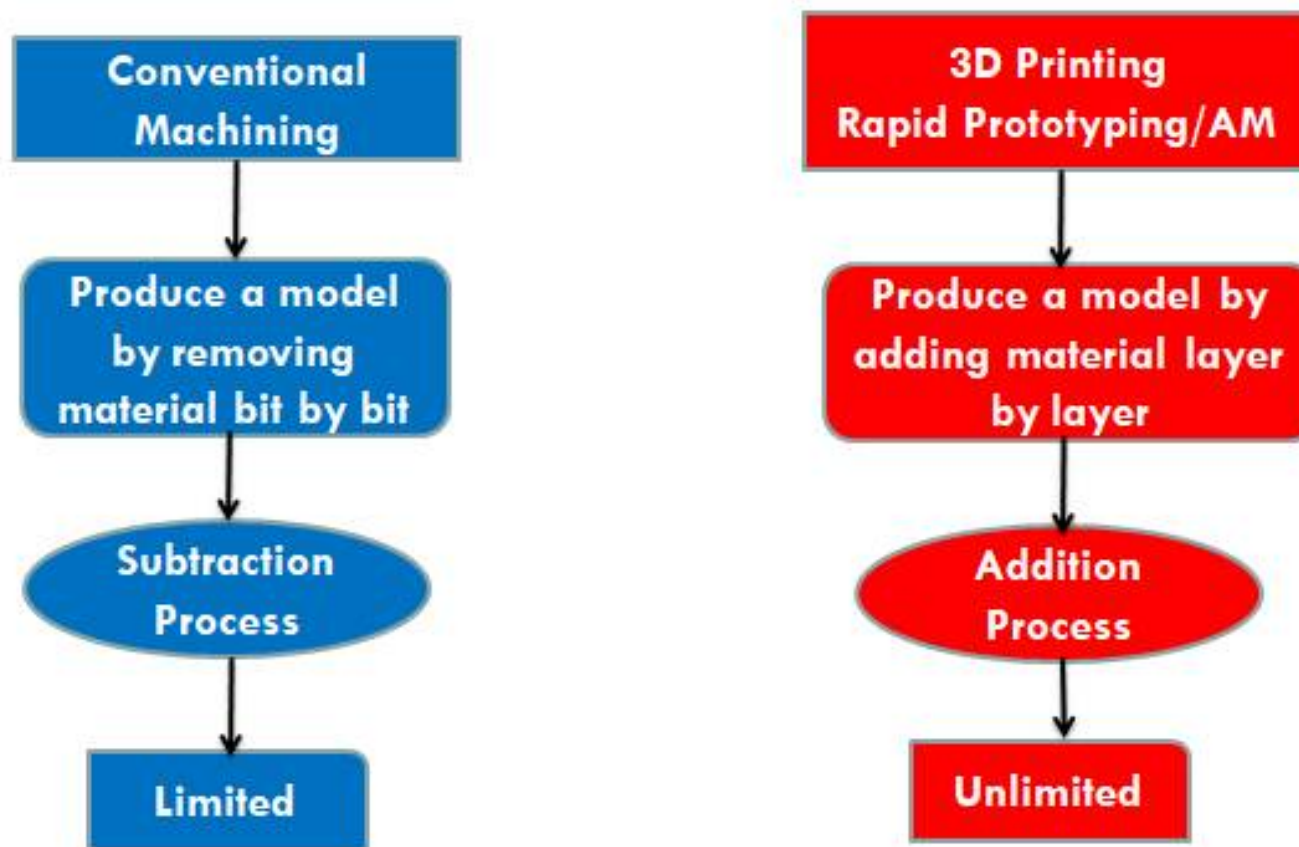


With Prototyping

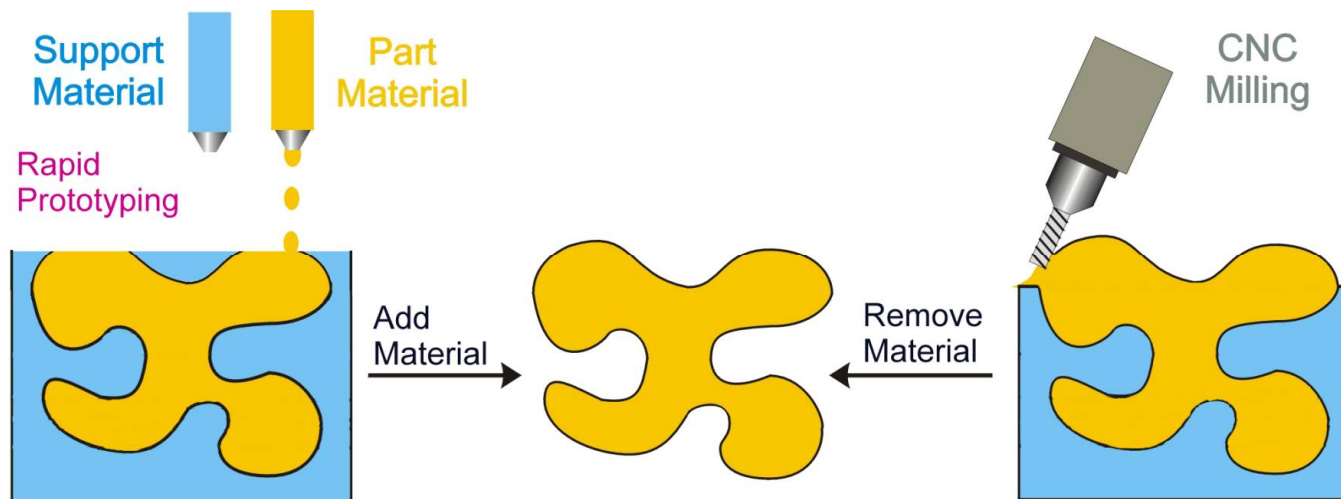




DIFFERENCE B/W CONVENTIONAL AND 3D PRINTING



SUBTRACTIVE VS ADDITIVE MANUFACTURING



Rapid Prototyping:
Additive material
3D Printing

Traditional manufacturing:
Subtractive material



DIFFERENCE BETWEEN ADDITIVE AND SUBTRACTIVE MANUFACTURING

Sl. No	Additive Manufacturing/3D Printing/Rapid prototyping	Subtractive Manufacturing
1	In additive manufacturing, layer by layer material is added one over another to develop desired solid 3D product.	In subtractive manufacturing layer by layer material is gradually removed from a solid block to fabricate 3-D product
2	This manufacturing concept is usually suitable for materials having low melting point, such as plastic.	This manufacturing concept can be applied to all solid materials irrespective of melting point.
3	These processes are applicable to a narrow range of material.	These processes can efficiently handled a wide variety of materials.