

Design of Generalized Framework for Case Good Products

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Abstract - In standard designing practice, we need to upgrade the segment while planning the parts the majority of the computations continue as before for lessening the tedious work and improving the usefulness, we can use programming abilities.

In the present pandemic circumstance part of businesses previously confronted creation misfortune, and now time is to recuperate the entirety of the misfortunes. In such time re-planning, the segment for every one of the diverse info is definitely not a smart thought. Plan mechanization can be perhaps the best answer for this sort of excess work. Assuming we form bookkeeping page as indicated by the difficult assertion, there will be a onetime speculation after that we are bringing out couple of particulars in few snaps.

I. INTRODUCTION

The India Furniture Market is expected to arrive at USD 32.61 Billion by 2018 by enrolling a CAGR (Accumulate Yearly Development Pace) of 13.38% during the gauge time frame i.e., 2018-2023. Additionally, the market is required to accumulate USD 61.09 Billion before the finish of 2023. Further, the India furniture market is expected to accomplish a Y-o-Y development pace of 14.30% in 2023 when contrasted with the earlier year.

India furniture market development is driven by different qualities, for example, rising pattern for particular and cutting-edge furniture among the populace living in metropolitan urban communities, developing urbanization in Indian states, rising interest for sturdy and cross breed seating furniture. On the rear of these variables the furniture business is relied upon to impel in India. Further, the rising pattern of on

the web and versatile shopping in India is imagined to reinforce the interest for furniture through online channels.

The players, for example, Pepperfry, Metropolitan stepping stool and others are creating critical income through online stages. Likewise, the rising pattern of internet shopping is pushing the makers like Godrej Furniture, Nilkamal and so forth, to present and sell their furniture through online space. For example, driving disconnected retailer of readymade furniture items named @Home, which is a lead brand of Nilkamal Pvt. Ltd, has dispatched its web-based shopping entryway for the restrictive scope of @Home furniture, decorations and home d'cor things.

The goal behind this task is to use my designing information and computer aided design abilities to plan a stage for Cases Great items (Stockpiling Units) from which number of items can be pulled out in only couple of snaps.

II. LITERATURE SURVEY

A. "Customized Wardrobe Function Modular Design" by Kunlun Chen, Zhongfeng Zhang, Jijuan Zhang

This paper summarizes the key problems of modular design of custom wardrobe and puts forward a new method of customizing wardrobe modular design in combination with customer's requirement. Through the new division and partition configuration of the wardrobe function module, the function module size standard and the module combination mode are determined.

B. “Research on the Design of the person Wardrobe Based on Ergonomics” by Chunling Gu and Jing Zeng Based on the storage demand this paper analyses the problems existing in the use of the wardrobe based on the ergonomics and the psychological and behavioral characteristics of the person.

C. “Application of Failure Mode & Effect Analysis (Fmea) For Continuous Quality Improvement – Multiple Case Studies In Automobile Smes” by Jigar Doshi, Darshak Desai

Failure Mode and Effects Analysis (FMEA) is a quality tool used to identify potential failures and related effects on processes and products, so continuous improvement in quality can be achieved by reducing them. The purpose of this research paper is to showcase the contribution of FMEA to achieve Continuous Quality Improvement (CQI) by multiple case study research.

D. “Opportunities for the applications of FMEA Model in logistics processes in Bulgarian enterprises” by Maria Vodenicharova

The results show that FMEA is not used for assessment in logistics processes and provides useful insights for decision-making to improve the reliability of supply. A framework based on the survey is presented for determining the reliability of logistics processes in manufacturing plants. The study demonstrates the applicability of the method in logistics processes and the role FMEA can play in assessing logistics processes.

E. “Static Analysis of Shelf to Study the Effect of Different Meshes and Addition of Stiffners on FEA Results” by Mr. G.C.Mekalke Koustubh S. Hajare Ankush B. Khot Yuvraj M. Shet Harshwardhan C. Ketkale Naval B. Sangave

Shelves are subjected to uniformly distributed load and concentrated load many times over its life span. Strength of these structures are increased by adding stiffeners to its base plate. This paper deals with the analysis of Shelf with and without stiffener. A comparison of without stiffener shelf and one, two and three stiffeners is done for the same dimensions. In order to continue this analysis various research papers were studied to understand the previous tasks done for stiffened shelf. Hyper mesh is used to do the analysis. Triangular flat plates are used as stiffener at middle,

both outer side of shelf. Displacement plot and stress plots are studied for all above cases and comparison table is prepared. On that which case is good or better is found out.

III. CAD MODELING

Computer aided design, or PC supported plan and drafting (CADD), is the utilization of PC innovation for plan and plan documentation. Computer aided design programming replaces manual drafting with a robotized interaction. On the off chance that you work in the design, MEP, or primary designing fields, you've presumably utilized 2D or 3D CAD programs. These projects can assist you with investigating plan thoughts, imagine ideas through photorealistic renderings, and recreate how a plan will act in reality. AutoCAD programming was the principal CAD program, and it is as yet the most generally utilized CAD application. Computer aided design contingent upon whether your plan interaction includes 2D vector-based illustrations or 3D demonstrating of strong surfaces. Most 3D CAD programs let you apply numerous light sources, pivot objects in three measurements, and render plans from any point.

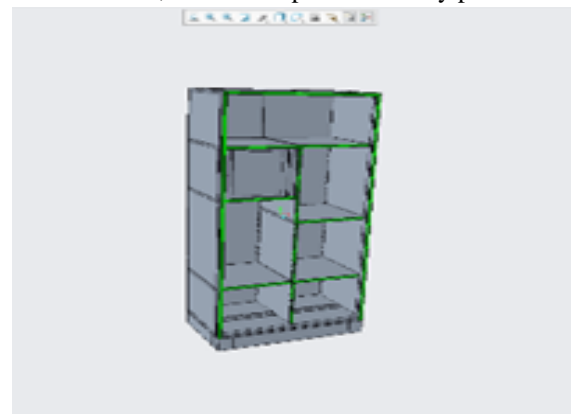


Fig 3.1 Wardrobe Without Door

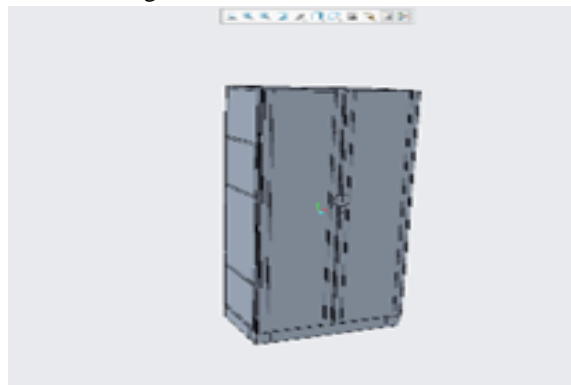


Fig 3.2 Wardrobe with Door

IV. ANALYSIS

Analysis of shelf is done for calculating its load carrying capacity, so that we can optimise the cost of the product by reducing sheet's thickness, we can also improve strength of the shelf.

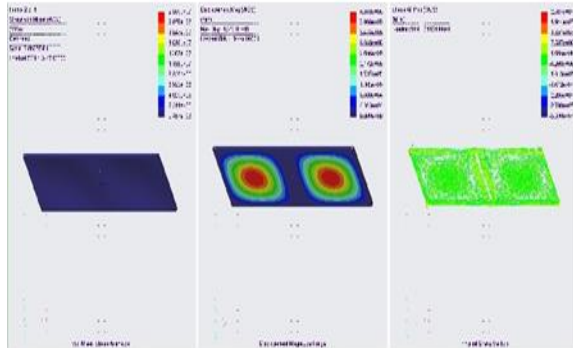


Fig 4.1 analysis of shelf

Material = CRCA
 Load = 50N
 Max Deformation = 4.34mm
 Stress(von-mises) = 2.30MPa

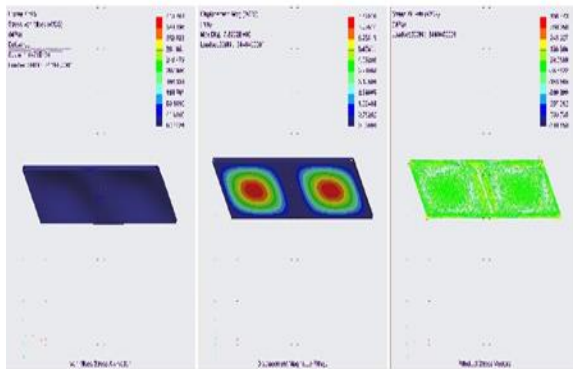


Fig 4.2 analysis of shelf

Material = CRCA
 Load = 300N
 Max Deformation = 7.82mm
 Stress(von-mises) = 415MPa

V. DESIGN AUTOMATION

whole wardrobe design is automated using programming, in which we have to define input parameters on which other dimensions are driven after the parameters were defined then create relations which drive part dimensions.

input

overall_width number
 "enter overall width"

overall_depth number
 "enter overall depth"
 overall_height number
 "enter overall height"
 fixed_shelf_distance_f_top number
 "enter distance from top to fixed shelf"
 locker_shelf_distance number
 "enter distance between fixed shelf and locker shelf"
 back_panel_thk number
 "enter back panel thickness"
 end_panel_thk number
 "enter end panel thickness"
 top_panel_thk number
 "enter top panel thickness"
 bottom_panel_thk number
 "enter bottom panel thickness"
 door_thk number
 "enter door thickness"
 locker_door_thk number
 "enter locker door thickness"
 vdp_thk number
 "enter vdp thickness"
 fixed_shelf_thk number
 "enter shelf thickness"
 door_frame_thk number
 "enter door frame thickness"
 stiffner_thk number
 "enter stiffener thickness"
 door_back_cover_thk number
 "enter back cover thickness"
 scerten_thk number
 "enter thk"
 scerten_height number
 "enter scerten height"
 end input

VI. CONCLUSION

As we discussed in the report, I have created this platform for case-good products. I have tested this for multiple configurations and results are satisfactory.

Case I: Changing overall dimensions of the product: 1200x1850x425

Case II: Changing height of product from 1850 to 1950

Case III: Changing Width of product from 1200 to 900

Case IV: Changing depth of product from 425 to 450

Case V: Changing the thickness of Back Panel from 0.7 to 0.6

Case VI: Changing the locker position

Case VII: Changing locker height

Case VIII: Changing leg height

Case IX: Exporting BOM

Case X: Simulation Results

REFRANCE

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