CONCLUSION

**TEAM -21 (CodeForVision)** **REPOSITORY PATH-\\172.16.15.0**

**ITC-LTD**

**PROBLEM STATEMENT/RR4**-To build a computer simulation model for optimizing packaging design for a given packaged food and for new products.

**Our solution is based on :**

1.A smart web based system that simulates the packaging design for the specific product(Biscuits).

2.An algorithm written in python language that works as a simulator where it simulates the optimal length of packaging area considering physical properties such as tensile strength, thickness, weight, puncture resistance, cost etc.

3.A variety of packaging materials including PRIMARY LAYER, SECONDARY LAYER, TERNARY LAYER are taken and these packaging materials are determined according to the inputs provided by the company.

4. These inputs and the raw data (arbitrarily taken) are mapped and thus the packaging material per cost cm2 is generated according to the product specifications.

5.The focus is made basically on the Orientation/Arrangement of the biscuits such that the product does not gets damaged during the supply chain.

6.Calculation of the mathematical formula/Algorithm for generating best optimal arrangement of biscuits is made as follows:

We are considering ‘N’ (no. of biscuits) that belongs to the set of integers. Now according to the dimensions of the biscuit, the maximum surface area is taken for overlapping of biscuits. Then the factors of ‘N’ are generated. For each generated factor we will calculate Total surface area and the area will be chosen that consists of minimum total surface area for packaging design. Thus, at last we will get the optimized orientation and layering by dividing the no. of biscuits recursively with factors.

**FUTURE ASPECTS:**

1. Reduction in packaging materials – thinner, stronger design, lighter, simpler.
2. Packaging closer to manufacture – less empty cartons carried in lorries.
3. Space-saving packaging – eg growth of square cartons for drinks.