# **1. Problem Definition: -**

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## **1.1 Need statement: -**

# *A company needs a COIN COUNTER machine which processes bulk coins quickly and efficiently, replacing the manual counting process.*

### **1.1 Question and answer: -**

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| --- | --- | --- | --- |
| **Sl.No** | **Questions** | **Answer** | **Objective/Function/Constraint** |
| 1. | Should the machine be automatic or manual? | The Machine should be automatic. | Objective |
| 2. | Machine should be fixed or portable? | The Machine should be portable. | Objective |
| 3. | What should be the Size of Machine? | Size: - 3 x 3 x 3 ft. | Constraint |
| 5. | How many coins should the Machine sort in one second? | 5 coins per second. | Constraint |
| 6. | How should the machine sort the coins? | By the size of the coins. | Constraint |
| 7. | Do you want Machine to indicate when it gets full? | Yes. | Function |
| 8. | Do you want Machine to count the no.of coins? | Yes. | Objective |
| 9. | How much should the Machine cost? | Not more than 4,000rs/- | Constraint |
| 10. | What other things are expected? | It should have a lock to the collector box, where all coins are collected. | Function |
| 11. | What should be weight of the Machine? | Less than 5kgs. | Constraint |
| 12. | Should machine be user-friendly? | Yes. | Objective |

Table 1: Questions and answers

## **1.2 Survey: -**

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| **Sl.No** | **Observations** | **Requirements** |
| 1. | Budget of Machine. | It should not cross the value of 4,000rs/- |
| 2. | No.of to be sorted in a second. | The Machine should sort at least 5 coins per second. |
| 3. | Type of Machine. | A cubic portable Machine. |
| 4. | Weight of machine. | Should be less than 5kgs. |

Table 2: Survey

## **1.3 Client's Objectives: -**

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| --- | --- |
| **Sl.No** | **Objectives** |
| 01 | Machine should be automatic. |
| 02 | Machine should be portable. |
| 03 | Machine should be user-friendly. |
| 04 | Machine should count no.of coins inserted. |

Table 3: Objectives.

### **1.3.1 Problem definition:-**

*Design an automatic machine which should be portable, should sort 5 coins per second and count each no.of inserted coins.*

## **1.4 Identify constraints: -**

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| **Sl.No** | **Constraints** |
| 01 | The Machine dimensions should be 3x3x3ft. |
| 02 | It should sort each coin by its size. |
| 03 | Machine should sort 5 coins per second. |
| 04 | All types of coins should be sorted by Machine. |
| 05 | Machine should work for 24x7hrs. |
| 06 | The Machine should be cubic. |
| 07 | Machine should less than 4,000rs/- |
| 08 | It should be made of non-toxic materials. |
| 09 | Its weigh should not exceed 5kgs. |

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### Table 4: Constraints

### **1.2.1 Problem definition: -**

*Design a Machine with dimensions 3x3x3 cubic.ft , should sort each type of coins of each size at least 5 per second. It should work 24x7hrs, must be made of non-toxic materials which should not exceed weight of 5kgs. Machine should be made in 4,000rs/- budget.*

## **1.5 Functions: -**

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| --- | --- |
| **Sl.No** | **Functions** |
| 01 | Sort the coins. |
| 02 | Sort all types of coins. |
| 03 | Indicate the complete fill of collection box. |
| 04 | Should have lock to the collection box. |

Table 5:Functions

### **1..3.1. Problem definition: -**

*The Machine should sort all types of coins by its size at least 5 coins per second. The indication of complete fill of box must be a function of it and the Machine should have a lock to the collection box.*