

```
import java.util.*;

public class OptimalStorage
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        // Take number of programs
        System.out.print("Enter number of programs: ");
        int n = sc.nextInt();

        int[] lengths = new int[n];
        System.out.println("Enter lengths of programs:");
        for (int i = 0; i < n; i++)
        {
            lengths[i] = sc.nextInt();
        }

        // Sort program lengths
        Arrays.sort(lengths);

        int totalRetrievalTime = 0;
        int cumulativeTime = 0;

        // Calculate total retrieval time
        for (int i = 0; i < n; i++)
        {
```

```
        cumulativeTime += lengths[i];  
        totalRetrievalTime += cumulativeTime;  
    }  
  
    // Calculate MRT  
    double mrt = (double) totalRetrievalTime / n;  
  
    // Print only MRT  
    System.out.println("Mean Retrieval Time (MRT) = " + mrt);  
  
    sc.close();  
}  
}
```

OUTPUT:

```
Enter number of programs: 8  
Enter lengths of programs:  
12  
5  
8  
32  
7  
5  
8  
13  
Mean Retrieval Time (MRT) = 35.375
```