Exercise 2: E-commerce Platform Search Function

# Approach & Understanding

I have designed a simple search functionality for an e-commerce platform to find products using

**Linear Search** and **Binary Search**.

# Code

public class Ecommerce

{

static class product

{

String id; String n; String c;

product(String id , String n, String c)

{ this.id= id ; this.n= n ; this.c= c; }

public String toString()

{ return "product [" + "id='" + id + "', name='" + n + "', cat='" + c + "']"; }

}

public static int find(product[] p , String t )

{

for( int x = 0; x<p.length ; x++ )

{

if(p[x].id .equals(t))

{ return x ; }

}

return -1 ;

}

public static int bsearch(product[] p , String t )

{

int l=0;int r=p.length-1;

while ( l <=r )

{

int m = l+ (r - l)/2;

int cmp = p[m].id.compareTo(t);

if ( cmp == 0 )

{ return m ; }

else if ( cmp <0 )

{ l = m +1; }

else

{ r = m -1 ; }

}

return -1 ;

}

public static void main(String args[])

{

product[] list = {

new product("P001","Laptop","Electronics"), new product("P002","Phone","Electronics"), new product("P003","Book","Education"),

new product("P004","Headphones","Electronics"), new product("P005","Mug","Kitchen")

};

String key= "P004";

System.out.println("Linear Search :"); int res1 = find(list , key );

if ( res1 != -1 )

{

System.out.println("Found at pos : " + res1 ); System.out.println( list[res1] );

}

else { System.out.println("Item not in list"); }

System.out.println("\nBinary Search :"); int res2 = bsearch(list , key );

if ( res2 != -1 )

{

System.out.println("Found at pos : " + res2 ); System.out.println( list[res2] );

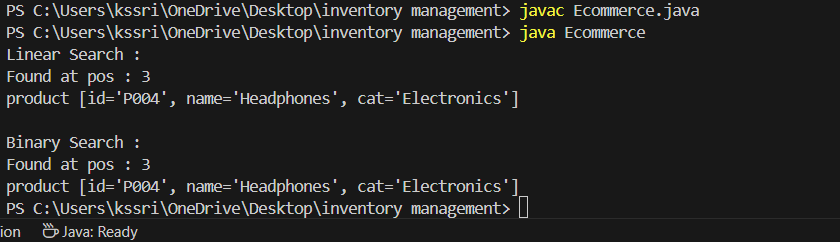
}

else { System.out.println("Item not in list"); }

}

}

**OUTPUT:**

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