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Section 3: Loops and functions
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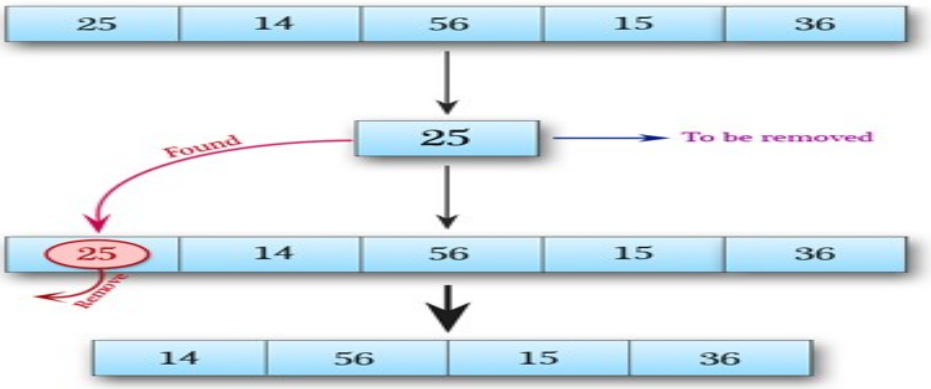
9.Define a method to read two intergers x and y and find all prime numbers in the range
10.A three digit number is called Armstrong number if sum of cube of its digit is equal to number
itself.
E.g.- 153 is an Armstrong number because (13)+(53)+(33) = 153.
Write all Armstrong numbers between 100 to 500.
11.Write a Java program to sort a numeric array and a string array
12.**.**Write a Java program to find the index of an array element
13.**W**rite a Java program to remove an array element



14.Write a Java program to insert an element (specific position) into an array.
15.Write a Java program to reverse an array of integer values.
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Section 5: OOPS
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19. Create a class called Employee that includes three pieces of information as instance variables—a
first name (String), a last name (String) and a monthly salary (double). Your class should have a
constructor that initializes the three instance variables. Provide a set and a get method for each

instance variable.
If the monthly salary is not positive, set it to 0.0. Write a test application named EmployeeTest that
demonstrates class Employee's capabilities.
Create two Employee objects and display each object's yearly salary. Then give each Employee a
10% raise and display each Employee's yearly salary again.
20. Create a class called Book to represent a book. A Book should include four pieces of information
as instance variables-a book name, an ISBN number, an author name and a publisher. Your class
should have a constructor that initializes the four instance variables.
Provide a mutator method and accessor method (query method) for each instance variable.
Inaddition, provide a method named getBookInfo that returns the description of the book as a String
(the description should include all the information about the book). You should use this keyword in
member methods and constructor. Write a test application named BookTest to create an array of
object for 30 elements for class Book to demonstrate the class Book's capabilities
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i. Create a super class called Car. The Car class has the following fields and methods.
◦intspeed;
◦double regularPrice; ◦String color;
ii. Create a sub class of Car class and name it as Truck.
The Truck class has the following fields and methods.
◦int weight; ◦double getSalePrice();//Ifweight>2000,10%discount.Otherwise,20%discount
iii. Create a subclass of Car class and name it as Ford. The Ford class has the following fields
and methods
◦int year; ◦double manufacturerDiscount; ◦
doublegetSalePrice();//FromthesalepricecomputedfromCarclass,subtractthemanufacturer Discount
iv. Create a subclass of Car class and name it as Sedan. The Sedan class has the following fields
and methods. ◦intlength;
◦doublegetSalePrice();//Iflength>20feet,5%discount,Otherwise,10%discount
v. Create MyOwnAutoShop class which contains the main() method. Perform the following within
the main() method.
(a) Create an instance of Sedan class and initialize all **the fields with** appropriate

values. Use
super(...) method in the constructor for initializing the fields of the superclass.
(b)Create two instances of the Ford class and initialize all the fields with appropriate values. Use
super(...) method in the constructor for initializing the fields of the super class.
(c) Create an instance of Car class and initialize all the fields with appropriate values. Display the
sale prices of all instance.