**1.Write a Java Program to reverse a string without using String inbuilt function reverse ().**

public class {

public static void main(String[] args) {

String str = "Hello world";

String revString = "";

for (int i = str.length() - 1; i >= 0; --i) {

revString += str.charAt(i);

}

System.out.println(revString);

}

}

Output

![Text

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4REERXhpZgAATU0AKgAAAAgABAE7AAIAAAATAAAISodpAAQAAAABAAAIXpydAAEAAAAmAAAQ1uocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAE1hcmlhIFRvbXkoVVNULElOKQAAAAWQAwACAAAAFAAAEKyQBAACAAAAFAAAEMCSkQACAAAAAzAzAACSkgACAAAAAzAzAADqHAAHAAAIDAAACKAAAAAAHOoAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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HwJDNicoIJChYXGBkaJSYnKCkqNDU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6g4SFhoeIiYqSk5SVlpeYmZqio6Slpqeoqaqys7S1tre4ubrCw8TFxsfIycrS09TV1tfY2drh4uPk5ebn6Onq8fLz9PX29/j5+v/EAB8BAAMBAQEBAQEBAQEAAAAAAAABAgMEBQYHCAkKC//EALURAAIBAgQEAwQHBQQEAAECdwABAgMRBAUhMQYSQVEHYXETIjKBCBRCkaGxwQkjM1LwFWJy0QoWJDThJfEXGBkaJicoKSo1Njc4OTpDREVGR0hJSlNUVVZXWFlaY2RlZmdoaWpzdHV2d3h5eoKDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uLj5OXm5+jp6vLz9PX29/j5+v/aAAwDAQACEQMRAD8A674q/wDJOta/69j/ADFfJlfWfxV/5J1rX/Xsf5ivlp9F1SLS11KTTbxLB/u3TQMIm5xw+MdeOtAFGiirN7YXOn3htbuLZMAp2qwbIYBlIIyDkEHj1oArUVYawvFluImtJxJagm4QxnMIBAO4fw8kDnuar0AFFFFABRRVi+sbjTbtra8j8uVVViAwYEMoYEEEgggg8UAV6Ku3Wj6nY2cN3e6dd29tcAGGeWBkSTIyNrEYPHPFQyWV1DaQ3U1tNHbzlhDM0ZCSFeG2t0OO+OlAEFFXZ9H1O10+K/utOu4bOfHlXEkDLHJkZG1iMHoelFzo+p2djDe3enXcFpPjyZ5YGWOTIyNrEYPHPFAFKip5LK6htIbqa2mjt5ywhmaMhJCvDbW6HHfHSrF9oeraXbxz6npd7ZwynEclxbvGr8Z4JAzxQBQoqze2Fzp94bW7i2TAKdqsGyGAZSCMg5BB49asahoGs6TCs2q6TfWMTttV7m2eNWPXALAZNAGdRRRQAUVZv7C50u+ks76Pyp48b03BsZAI5GR0IqOa3mt9n2iGSLzEEib1K7lPRhnqD60ARUUUUAFFWL6xuNNu2tryPy5VVWIDBgQyhgQQSCCCDxVegAooooAKKK0NQ0S90u1tbm7WHybsMYZIbiOYNtxkZRjgjI4ODQBn0UUUAFFXF0q9bRX1ZYc2KTi3aXevEhUsFxnPQHnGKp0AFFFFABRRS0AJRWjf6BrOl2yXGp6TfWcDkKstxbPGrHGcAkAHis6gAooooAKKKKACiitCbQtXt9NTUbjSr2KxcArcvbusTA9MMRg5oAz6Klmt5rfZ9ohki8xBIm9Su5T0YZ6g+tRUAFFXLjSr200uz1G4h2Wt6XFvJvU79hw3AORgnviqdABRRRQAUVcXSr1tFfVlhzYpOLdpd68SFSwXGc9AecYqnQAUUUUAFFFFABRRRQB9bfE8xjwDqxmBMYh+cDqRkZr5+8caZrb+ItU1iOOd9ImOYL2M/uHtyR5aK4+U4G0bBzx04r374q/8k61r/r2P8xXyZQ9UC3NjUYr1fDGjyXGm2tvauZvs93EqiW5ww3byDk7TwMgcetX7lhqnhfTNTJzPpcq2V0e5iJLQsfp86f8AAVFcxUsdxNDFLFFNIkcyhZUViA4ByAR3GQDz6U07O/zFY9C1mwurHVPGuqXcDxafqETiyumH7u6Mk8bp5bdHyoJ4zgA5qt4j02RvCou/7Nk0O3h8hGtbzR44Xc42kxXON8pyCxDY4J64rgaKlaJLtb8Cr63/AK/rQ9M8X6dpllouopbaVetYhYjpt7FosccKcrhjdq5aUMpIO4HkjgYxWT4u1SystQvtGi0PT0gNrAIpIoFSRJSkbmTfgsc5YbQQvOcZ68TRTEd94l02U+E/ta6bJokMAgQ2l7o8cDSHGD5VzjfKcgsQ2OCeuKxNQ/4m/g6x1BfmudNb7Dc+pjOWhY/+Pp/wFRXOVLHcTQxSxRTSJHMoWVFYgOAcgEdxkA8+lG9wWljudb0XW/D/AIJni1Ox1G4utSkhur25lgdobVFBCKZCMGQ7+eeBheuak8QWWuXHgPRL7X7C/KxX1w9w8tu6iOIiEJ2AVSBheg4wK89opp2dxdj1/wASNa2C+Kbt7OeWy1CJHgv7uQ+TdMXVoY4EHBCrnJyxAX+DkVla+8EWj+I9TvoNWsptcETQ2uoW4iUOJFfEeWLSKq7gH2qFGB1YCvNaKmxVzvvFFj4hufh1pF7q9jf747u5aWSW3ZREjLCqdgFU4wvQcYFV5NMn0z4e6lHdaZqGjySPbu76gflvWBI2xKUUrjcWP3zgYyAeeJopsS0SR1E3/E38M6XqI+a40yZbG59TGSWhY/8Aj6f8BUV02sWV3pOr+OLjW4ZrPTb8ypAJ0KC5lMwMZjBxvwMtkcAdevPm0dxNDFLFFNIkcyhZUViA4ByAR3GQDz6VFTf+f42uC0/D8Nj03xfp2mWWi6iltpV69iFiOm3kWixxwpyuGN2rlpQykj5geSOBjFUPEumynwn9rXTZNEhgECG0vdHjgaQ4wfKucb5TkFiGxwT1xXA0UugI9O8cW8arf3Wg20F3OksZ1WSeBJJoAEXZsVgdsR7uOSeDgYBzvFlxqepaLpF21jC2kSWECz3tvpkIWNwxDKJVQFMEY2Age3NcFRR/ncD0fXNMMNpry3mkWlposCKdHvI7VEMzb18vZMAGm3Rli2S3rxgVP4usPs0fiFL7QbTTNMhSP+zJ0sVhaWYuv3JMZkBUyEjJAAGAMCvMhxVzV9Um1rV7jUbpY0muG3OsYIUHHbJNLp/X9XH/AF/Xka2of8TfwdY6gvzXGmt9hufUxnLQsf8Ax9P+AqK2/Eumyt4T+1rpsmiQwiBDaXujxwNI2NpMVzjfKcgsQ2OCeuK4aO4mhiliimkSOZQsqKxAcA5AI7jIB59KipiR6ve+G4bTw7fRXtpG/wBlFq1vMukx28bEyIrGKfeZLhcOQSwI5B44qzrVpp02navCmj6ZB5cWo7Hgs0V18iaMR4bGRgM2SOTnnoK8fpRxT3/H8f8AIFp+H4Hpvi7T/s0fiFL7QbTTNMhSMaZOlisLSzF1+5JjMgKmQkZIAAwBgVh69oWq2fgHQZL7TL63ihluTM8ls6iMMybScjjPbPWua1fVJta1e41G6WNJrhtzrGCFBx2yTVKktNQ6WPTPF+naZZaLqKW2lXrWIWI6bexaLHHCnK4Y3auWlDKSDuB5I4GMVg635H/CL23/AAkJUa+I4/svkAFzb44Fz2B242nl8fe421yNKDhgSM89D3oDb+v6/wCHOqlvDqvw/vZ7q1sFnt9Qt445bexhgYK0cpIJjRSQdo6+ldLrfh6Ow8G6qLq1jZrOK3ktZ10mO3jLF1DGKfeZLhcMclgRyDxxXDahr7Xmlrp1rp9np1oJvPeO18w+Y+NoLNI7NwCcAEDk8VkUPd2/rYF0/rqdxr0WnW+iXes21lbRjXVhWzjEa7bfAzcbOMKQ6heOzVsa54disfBmrLd2yFrSG3e2nTSo7eMkuoYxThzJOuHOSwI5B44ry+igF0O08Y2V9ZRNFp2kQr4eVYvs+oQ2CMJQVB3G527iSScjdweMcYrjB94fWkooWjuHSx6t4x8iZPFselRyLdCa2bUlmkEm6AAYkiUAbcMQGzu4IwRzVbxdp+mWGj6gLbSrx7FREdNvI9FjSBOVwxug5aUMpIO4HkjgYxXmVFAI7nXYtMt9GutZhsreNddEC2iLGpW3wM3BQYwpDqFGMcNWn4v07TLLRdRS20q9axCxHTb2LRY44U5XDG7Vy0oZSQdwPJHAxivM6KGC6HbeLtUsrLUL7RotD09IDawCKSKBUkSUpG5k34LHOWG0ELznGetjxHpsjeFRd/2bJodvD5CNa3mjxwu5xtJiucb5TkFiGxwT1xXA0UwWh6b4u03TbPR9QjtNJvXsgIv7NvIdFjjhTlcMbpXLShlJHzA8kcDGKoeIdOm1LT73xDrmj3ugarD5Tk3UZFtfPnaVRJFBVsYbGXXCtworgaKQHd+MbnVtQ8P6XeJp8D6Y+nwiW8g0yFVSQMQU81UBTBGNoIHtzUXi7VLKy1C+0aLQ9PSA2sAikigVJElKRuZN+CxzlhtBC85xnrxNFHV+YdvI7TxNouqJ4N0S/vtDezkRpkuJk04W427kEe/aoHPOCeTzWl4kW1nk8WWMem6fbQ6YsL2xt7RI3VjKisS4G4ghzwTjpgDArzmnI7RyK6cMpBHGeae71Eeo+L9OXRfDuqrFpls1pJ5EVlLFopVrdRjeWuXiAbd0DK7EkgggV53c6Nf2Wk2Wp3MGyzvy4tpd6nzNhw3AORg+oFamoeM7m/F+66dY2t1qS7Ly7gEvmTKSGIIZ2VckAnao6cYHFc6DhgSM89D3pdR9Dqpbw6r8P72e6tbBZ7fULeOOW3sYYGCtHKSCY0UkHaOvpXS634ejsPBuqi6tY2azit5LWddJjt4yxdQxin3mS4XDHJYEcg8cVw2oa+15pa6da6fZ6daCbz3jtfMPmPjaCzSOzcAnABA5PFZFD3dv62BdP66nca9Fp1vol3rNtZW0Y11YVs4xGu23wM3GzjCkOoXjs1bGueHYrHwZqy3dqhazht3tZ00qO3jJLqGMU4cyTrhzksCOQeOK8vooYLoFFFFABRRRQB9Z/FX/AJJ1rX/Xsf5ivkyvrP4q/wDJOta/69j/ADFfLT6LqkWlrqUmm3iWD/dumgYRNzjh8Y68daAKNFFWb2wudPvDa3cWyYBTtVg2QwDKQRkHIIPHrQBWoqw1heLLcRNaTiS1BNwhjOYQCAdw/h5IHPc1XoAKKKKACiirF9Y3Gm3bW15H5cqqrEBgwIZQwIIJBBBB4oAr0VdutH1Oxs4bu9067t7a4AMM8sDIkmRkbWIweOeKhksrqG0hupraaO3nLCGZoyEkK8Ntbocd8dKAIKKuz6Pqdrp8V/daddw2c+PKuJIGWOTIyNrEYPQ9KLnR9Ts7GG9u9O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**2.Write a program to take an input number from the programmer and calculate all the prime numbers from 0 to that number. Store all the prime numbers in an array and display the array elements.**

import java.util.Scanner;

public class Ques2 {

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

int a, b, i, j, flag;

System.out.printf("Enter lower bound of the interval: ");

a = sc.nextInt();

// Ask user to enter upper value of interval

System.out.printf("\nEnter upper bound of the interval: ");

b = sc.nextInt();

System.out.printf("\nPrime numbers between %d and %d are: ", a, b);

for (i = a; i <= b; i++) {

if (i == 1 || i == 0)

continue;

flag = 1;

for (j = 2; j <= i / 2; ++j) {

if (i % j == 0) {

flag = 0;

break;

}

}

if (flag == 1)

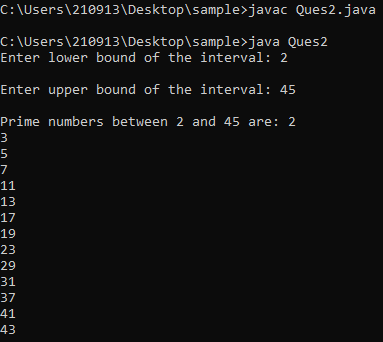
System.out.println(i);

}

}

}

Output



**3.Write a Java Program to find whether a string or number is palindrome or not.**

import java.util.\*;

class Palistringnum

{

public static void main(String args[])

{

String original, reverse = ""; // Objects of String class

Scanner in = new Scanner(System.in);

System.out.println("Enter a string/number to check if it is a palindrome");

original = in.nextLine();

int length = original.length();

for ( int i = length - 1; i >= 0; i-- )

reverse = reverse + original.charAt(i);

if (original.equals(reverse))

System.out.println("Entered string/number is a palindrome.");

else

System.out.println("Entered string/number isn't a palindrome.");

}

}

Output

![Text

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4REERXhpZgAATU0AKgAAAAgABAE7AAIAAAATAAAISodpAAQAAAABAAAIXpydAAEAAAAmAAAQ1uocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAE1hcmlhIFRvbXkoVVNULElOKQAAAAWQAwACAAAAFAAAEKyQBAACAAAAFAAAEMCSkQACAAAAAzgxAACSkgACAAAAAzgxAADqHAAHAAAIDAAACKAAAAAAHOoAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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UmsaE9h4im0qw+03rxAEbrN4ZD8gZsxt8wxz17DPSgDIoq9eaNqmn3UVtf6beWs82PKimgZGkycDaCMnnjitDUfCGqaZpunTXdpdxXd9LKi2UtqySAIFO4A8nO49u1AGDRV640XVLSW2iu9NvIJLrH2dJIGUzZ6bQR83UdPWny+Htagv0sp9Iv47t03pbvbOJGX+8FIyRwefagDOoq/c6Fq1k0QvNLvbczSGKIS27r5jg4KrkckHjAqLUNMv8ASbgQapY3NlMy7hHcwtGxHrhgDjg0AVaKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAPpX4q6hbaVrXhi9vpVht4b52eRkLBR5ZGSACT+Rrx6w1mDTfF9jqFzq+lzJFDMBNpVg1sI2MbBcgQxknJGDg49RXo37Q3/II0n/r5f/0GvBaOgHTRa5axaT4d3yNLcWGoTXE6YO4IWiYcng52t3+tXrPUdI0b4irq41K31CyuJbhi0UU6tAJAwVmBVDkb8/ISeDg5xXF0Uf194f1/X3noFr4ksNP1/wAPgXGkR2GnTyzB9MS8byiwGc+f82CQCAvv61keFvFktlr1o+tXDz2aTTysZAWKSyx7GlJUhz/CTg54OOa5aigDv4fEen2WpaVbi40mKzt1uhHPpiXjG1eaPZvPn/MQDhsL6E9euLr0+mReFtI0zTtSW/ntZriS4eOJ0Qb/AC8bS4BI+U9QDkHjGCeaooA0tAu5bDX7S7gu7eykhfes9yjPGuB/EFViQenAPWtfUrvQrHWtHvNKW3aSCUS3i2HneQdsgK7PPw4bAOc8dMd65aimnZp9hNXTXc7O0vdL0n4lW+sxazBc2b3clwZIYpg0IJJG4Mg55/h3dOtc+uoXeqrHYajqixW7XElwZroMwWRwNzMVVnOdo7Hn8TWZRUpJKxTd3c76bWdKs/iTFrdrrMM1u1uyiSCOZWicW3ljO5FPLdCM++Kf4M1CC5n8PwCQy3FjJf3FyCWXZG0QIYvg4HDHKhiOoBOAfPqmtrq4srqO5s55LeeM7klicqyn1BHIpkncajp1hex+HYoby1Tw5DNNEbg3Lu4IxJKCZIos/KQFCrjPGSTWXpPiZD8Qn169lNorecUKAnysxMsajaM8fKAfasHUNW1HV5ll1W/ur6RF2q9zM0hUegLE8VTo/r7xna6D4h061g0BL66ZXgnvRcuUZjEk0aqrdORnJIGTwatWWtaPoukWllBrK3E0FtqKvNBDKqh5olWMKWUMckYyQMHPbBPAUUdLfIOqfY9WXxro8mpW8x1ZkaO8LrO0cuY1NiIg2QpIxIMcc8Zx3rH0jxFpehXOj2txfpqiw3F1PPeRpLsiM0YjGNwSQ4I3EgA88ZPNcDRQ9XcForf1/Wp6Ba+JLDT9f8PgXGkR2GnTyzB9MS8byiwGc+f82CQCAvv61xlzq9/eWYtbu6eaITvc4fkmRwAzFupJ2jvVKigCe0gjubpIprqK0RjzNMHKJx32KzfkDXW6vqNrH8QLbWNF16wYfuys7wTlISkSqd6mLJBIP3QffFcXRQK1ze8T/wBiFrQ6N9m88o32r7D5/wBnzu+XZ543g469umO9V/DM1hB4ktJNXlkhs1Y+Y8bOuPlOMlPmCk4B284zjmsmihaDep13i3U9KuPD2j6fpUtoz2ktw0qWSXAhXfsI2mcljnBz05zx3MHw8Zl8cWbJN5DCOciXJGw+S/zcc8deOa5ipYLia1mEtrNJDIAQHjYqwBGDyPUEijYOljsrXU9GtX0XTtQ1Zr6GC6uLm5vIPOVFMiqFQEqsm0lcuQM4Y4yaZ4ivNG1HSNE0qwv9Otvs0tw0zwR3f2eIPsII8wNIc4PQdc8Y5PF0UAdT4rGm6p4sE9lrlk9vcJGrTGK4CwlI1X5gYt3JU42hvfFas2s6VZ/EmLW7XWYZrdrdlEkEcytE4tvLGdyKeW6EZ98VwNFAHa6F4i061s9ES8u2jnhkvlkm2MxtvOjVUk6c4bJwMnj1xVrTNY0TQ5vC8cWrrcnTru4mup44JFRN6ptK7lDMOPQHIPGME8BRQB0/h3xRNBqSR6vfSi1c3LeeV3vDNPEUM2fvHHBPfg45rW03XNL0LSYtNTV1vJY4L5xdQRyqkbSwhEjTcqtyVyTtAGRz1NcFRQ9VbysHVP5nqp8c6INRt55ro3IW9zlo5P3cbWSw7+xwHzwCDxkdjXH+J9St59P0/TrN9Ha2tnkdP7NF38hfbkE3HODjIC8dfWuaooeruC0Vi9rFrYWWqSQaTqP9p2qhdl15DQ78gE/K3Iwcj8Ko0UUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAe9ftDf8AII0n/r5f/wBBrwWiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooA/9k=)

**4.Write a Java Program to find the duplicate characters in a string.**

import java.util.\*;

public class Duplicatechar

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter the string is: ");

String str1=sc.nextLine();

int count;

char str[] = str1.toCharArray();

System.out.println("Duplicate characters in the given string: ");

for(int i = 0; i <str.length; i++)

{

count = 1;

for(int j = i+1; j <str.length; j++)

{

if(str[i] == str[j] && str[i] != ' ')

{

count++;

str[j] = '0';

}

}

if(count > 1 && str[i] != '0')

System.out.println(str[i]);

}

}

}

Output

![Text

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4REERXhpZgAATU0AKgAAAAgABAE7AAIAAAATAAAISodpAAQAAAABAAAIXpydAAEAAAAmAAAQ1uocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAE1hcmlhIFRvbXkoVVNULElOKQAAAAWQAwACAAAAFAAAEKyQBAACAAAAFAAAEMCSkQACAAAAAzQ0AACSkgACAAAAAzQ0AADqHAAHAAAIDAAACKAAAAAAHOoAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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**5.Write a Java Program to find the second-highest number in an array**

import java.util.Arrays;

import java.util.Scanner;

public class SecondHighestNumber {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.println("Enter array size :");

Integer numberOfElements = scanner.nextInt();

int arr[] = new int[numberOfElements];

System.out.println("Enter array elements :");

for (int i = 0; i < arr.length; i++) {

arr[i] = scanner.nextInt();

}

System.out.println("Array elements are" + Arrays.toString(arr));

int largest = arr[0];

int secondLargest = arr[0];

for (int i = 0; i < arr.length; i++) {

if (arr[i] > largest) {

secondLargest = largest;

largest = arr[i];

} else if (arr[i] > secondLargest) {

secondLargest = arr[i];

}

}

System.out.println("Second highest element in array is :" + secondLargest);

scanner.close();

}

}

Output

![Text

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**6.Write a java program to subtract two matrices. Take the input of the matrices from the user.**

import java.util.Scanner;

public class Matrixsub

{

public static void main(String[] args)

{

int i, j;

Scanner scan = new Scanner(System.in);

System.out.print("Enter Row Size of First Matrix: ");

int rOne = scan.nextInt();

System.out.print("Enter Column Size of First Matrix: ");

int cOne = scan.nextInt();

int[][] mat1 = new int[rOne][cOne];

System.out.print("Enter " +(rOne\*cOne)+ " Elements for First Matrix: ");

for(i=0; i<rOne; i++)

{

for(j=0; j<cOne; j++)

mat1[i][j] = scan.nextInt();

}

System.out.print("Enter Row Size of Second Matrix: ");

int rTwo = scan.nextInt();

System.out.print("Enter Column Size of Second Matrix: ");

int cTwo = scan.nextInt();

int[][] mat2 = new int[rTwo][cTwo];

System.out.print("Enter " +(rTwo\*cTwo)+ " Elements for Second Matrix: ");

for(i=0; i<rTwo; i++)

{

for(j=0; j<cTwo; j++)

mat2[i][j] = scan.nextInt();

}

if(rOne==rTwo && cOne==cTwo)

{

int[][] mat3 = new int[rOne][cOne];

for(i=0; i<rOne; i++)

{

for(j=0; j<cOne; j++)

mat3[i][j] = mat1[i][j] - mat2[i][j];

}

System.out.println("\nResult of Matrix 1 - Matrix 2 is:");

for(i=0; i<rOne; i++)

{

for(j=0; j<cOne; j++)

System.out.print(mat3[i][j]+ " ");

System.out.print("\n");

}

}

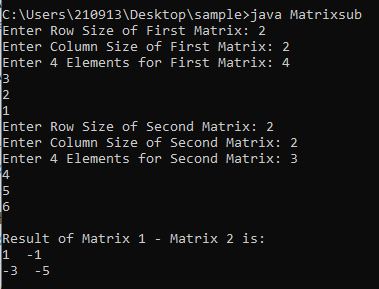
else

System.out.println("\nOrder Mismatched!");

}

}

Output



**7.Write a java program to take a string input from the user. Convert all the uppercase letters to lowercase and vice-versa.**

import java.util.Scanner;

public class UppertoLowercase {

public static void main(String[] args) {

System.out.println("Enter a string= ");

Scanner sc= new Scanner(System.in);

String str1= sc.next();

StringBuffer newStr=new StringBuffer(str1);

for(int i = 0; i < str1.length(); i++) {

if(Character.isLowerCase(str1.charAt(i))) {

newStr.setCharAt(i, Character.toUpperCase(str1.charAt(i)));

}

else if(Character.isUpperCase(str1.charAt(i))) {

newStr.setCharAt(i, Character.toLowerCase(str1.charAt(i)));

}

}

for(int i = 0; i > str1.length(); i++) {

if(Character.isUpperCase(str1.charAt(i))) {

newStr.setCharAt(i, Character.toUpperCase(str1.charAt(i)));

}

else if(Character.isLowerCase(str1.charAt(i))) {

newStr.setCharAt(i, Character.toLowerCase(str1.charAt(i)));

}

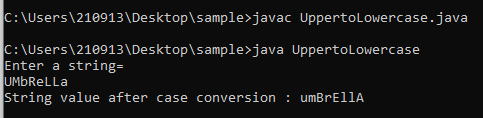
}

System.out.println("String value after case conversion : " + newStr);

}

}

Output



**8.Write a java program to take an input array of integers and sort the array using insertion sort.**

import java.util.Scanner;

public class InsertionSort

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

System.out.println("enter the array size");

int size=sc.nextInt();

int arr[]=new int[size];

System.out.println("enter the array elements");

for(int i=0;i<size;i++)

{

arr[i]=sc.nextInt();

}

sortInsertion(arr,size);

for(int k=0;k<size;k++)

{

System.out.print(arr[k]+",");

}

}

public static void sortInsertion(int arr[],int size)

{

int current=0,j=0;

for(int i=0;i<size;i++)

{

current=arr[i];

j=i-1;

while(j>=0 && arr[j]>current)

{

arr[j+1]=arr[j];

j--;

}

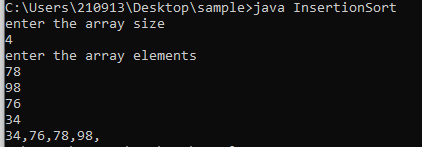
arr[j+1]=current;

}

}

}

Output



**9.Write a java program to take an input array of integers and search for a particular number given by the user. Use binary search algorithm.**

import java.util.Scanner;

class BinarySearchuser

{

public static void main(String args[])

{

int counter, num, item, array[], first, last, middle;

Scanner input = new Scanner(System.in);

System.out.println("Enter size of the array:");

num = input.nextInt();

array = new int[num];

System.out.println("Enter " + num + " elements");

for (counter = 0; counter < num; counter++)

array[counter] = input.nextInt();

System.out.println("Enter the search value:");

item = input.nextInt();

first = 0;

last = num - 1;

middle = (first + last)/2;

while( first <= last )

{

if ( array[middle] < item )

first = middle + 1;

else if ( array[middle] == item )

{

System.out.println(item + " found at location " + (middle + 1) + ".");

break;

}

else

{

last = middle - 1;

}

middle = (first + last)/2;

}

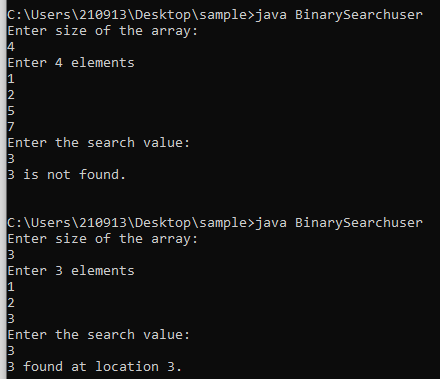
if ( first > last )

System.out.println(item + " is not found.\n");

}

}

Output



**10.Write a java program to take an input array of integers and sort the elements in a descending order using selection sort.**

import java.util.Scanner;

public class Selectionsortuser

{

public static void main(String[] args)

{

int n, temp;

Scanner s = new Scanner(System.in);

System.out.print("Enter the number of elements: ");

n = s.nextInt();

int a[] = new int[n];

System.out.println("Enter the elements of the array: ");

for (int i = 0; i < n; i++)

{

a[i] = s.nextInt();

}

for (int i = 0; i < n; i++)

{

for (int j = i + 1; j < n; j++)

{

if (a[i] < a[j])

{

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

}

System.out.println("Array elements in descending order:");

for (int i = 0; i < n - 1; i++)

{

System.out.println(a[i]);

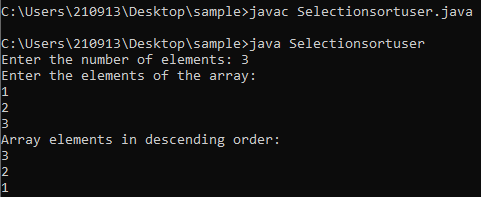
}

System.out.print(a[n - 1]);

}

}

Output



**11.Write a java program to achieve 100% abstraction.**

interface Card{

void balance();

void withdraw();

void deposite();

void transfer();

}

abstract class PanCard implements Card{

public void deposite(){System.out.println("25000");}

}

class ATMCard extends PanCard{

public void balance(){System.out.println("3500");}

public void withdraw(){System.out.println("6000");}

public void transfer(){System.out.println("7500");}

}

class Money{

public static void main(String args[]){

Card a=new ATMCard();

a. balance();

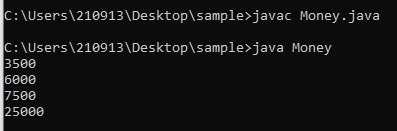
a.withdraw();

a.transfer();

a.deposite();

}}

Output



**12.Write a java program to implement method overloading.**

public class MethOver1 {

public static void main(String[] args)

{

add(100,20);

sub(12.23,10.12);

add(10,12.5);

sub(20,10);

}

static void add(int a,int b)

{

System.out.println(a+b);

}

static void add(double a,double b)

{

System.out.println(a+b);

}

static void sub(int a,int b)

{

System.out.println(a-b);

}

static void sub(double a,double b)

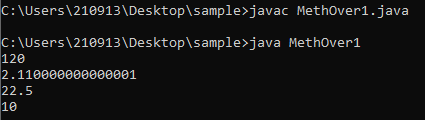
{

System.out.println(a-b);

}

}

Output



**13.Write a java program to implement method overriding.**

public class MethRide1 {

public static void main(String[] args)

{

//First Parent Overriding

Car c= new Bugatti();

c.fast();

c.weight();

//Second Parent overriding

Fruit f = new Watermelon();

f.benefit();

f.taste();

}

}

class Car

{

void fast()

{

System.out.println("Car goes fast");

}

void weight()

{

System.out.println("Weight is more than 1500kg");

}

}

class Bugatti extends Car

{

void fast()

{

System.out.println("Bugatti goes very fast");

}

void weight()

{

System.out.println("Weight of Bugatti is 1990kg");

}

}

class Fruit

{

void benefit()

{

System.out.println("Fruits are Healthy");

}

void taste()

{

System.out.println("Fruits are good in taste");

}

}

class Watermelon extends Fruit

{

void benefit()

{

System.out.println("Watermelon Helps you stay hydrated");

}

void taste()

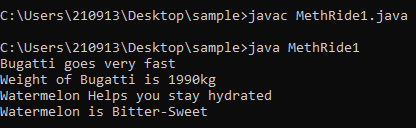
{

System.out.println("Watermelon is Bitter-Sweet");

}

}

Output



**14.Write a java program to implement Hybrid Inheritance.**

class SolarSystem {

}

class Earth extends SolarSystem {

}

class Mars extends SolarSystem {

}

public class Moon extends Earth {

public static void main(String args[])

{

SolarSystem s = new SolarSystem();

Earth e = new Earth();

Mars m = new Mars();

System.out.println(s instanceof SolarSystem);

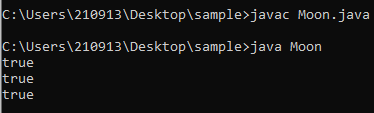
System.out.println(e instanceof Earth);

System.out.println(m instanceof SolarSystem);

}

}

Output



**15.Write a java program to implement multilevel inheritance.**

import java.io.\*;

import java.lang.\*;

import java.util.\*;

class one {

public void print\_geek()

{

System.out.println("Geeks");

}

}

class two extends one {

public void print\_for() { System.out.println("for"); }

}

class three extends two {

public void print\_geek()

{

System.out.println("Geeks");

}

}

public class Multilevelinheri

{

public static void main(String[] args)

{

three g = new three();

g.print\_geek();

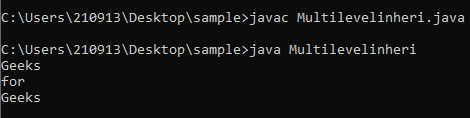
g.print\_for();

g.print\_geek();

}

}

Output



**16.Write a java program to take input of integer array elements from the user and divide each element by the smallest element of the array and store the result in a resultant array. Implement Try- catch-finally block to counter null pointer divide by zero error.**

import java.util.Arrays;

import java.util.Scanner;

public class Divide {

public static void main(String[] args) {

try

{

Scanner sc = new Scanner (System.in);

System.out.println("Enter the size of the array");

int size=sc.nextInt();

int ar1[] =new int[size];

int arcpy[]=new int[size];

int Res[]=new int[size];

System.out.println("Enter the elements in the array");

for (int i=0;i<size;i++)

{

ar1[i]=sc.nextInt();

}

for (int i=0;i<size;i++)

{

arcpy[i]=ar1[i];

}

int temp;

for(int i=0;i<size;i++)

{

for(int j=i+1;j<size;j++)

{

if(ar1[i]>ar1[j])

{

temp=ar1[i];

ar1[i]=ar1[j];

ar1[j]=temp;

}

}

}

int small=ar1[0];

for(int i=0;i<size;i++)

{

Res[i]=arcpy[i]/small;

}

System.out.println("The resultant array is ");

System.out.println(Arrays.toString(Res));

sc.close();

}

catch(NullPointerException e)

{

System.out.println("Null Pointer Exception Caught");

}

catch(ArithmeticException e)

{

System.out.println("Null Pointer Exception Caught");

}

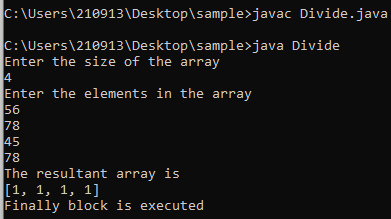
finally

{

System.out.println("Finally block is executed");

}}}

Output



**18.Write a java program to create a File at a particular location and to write to that particular file a String data which is taken as input from the user.**

import java.io.FileWriter;

import java.io.IOException;

import java.util.\*;

public class FileWriterExample

 {

  public static void main(String[] args)

   {

    Scanner sc= new Scanner(System.in);

System.out.println(“Enter the string:”);

    String w= sc.nextLine();

    try {

      FileWriter myWriter = new FileWriter("\\D:string.txt");

      myWriter.write(w);

      myWriter.close();

      System.out.println("Success...");

    } catch (IOException e) {

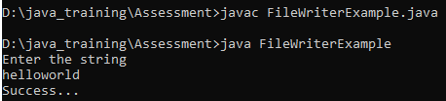
      System.out.println("An error occurred.");

         }

  }

}

Output



**19.Write a program to read a file from a particular location and determine the number of vowels in that file.**

import java.io.BufferedReader;

import java.io.File;

import java.io.FileReader;

import java.io.IOException;

import java.util.Scanner;

public class FileVowels {

public static void main(String[] args) throws IOException

{

FileReader file = new java.io.FileReader("D:Output.txt");

Scanner sc = new Scanner(file);

String Content = "";

while (sc.hasNext())

{

Content += sc.next() + " ";

}

sc.close();

char[] charArr = Content.toCharArray();

int counter = 0;

for(char c : charArr)

{

if(c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u' )

counter++;

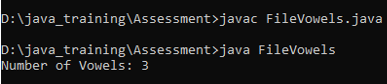
}

System.out.println("Number of Vowels: " + counter);

}

}

Output



**20.Write a program to take input of two numbers from the user. Now perform the arithmetic operation specified by the user and display the result.**

import java.util.Scanner;

public class Operation {

public static void main(String[] args) {

double num1;

double num2;

double ans;

char op;

Scanner reader = new Scanner(System.in);

System.out.print("Enter two numbers: ");

num1 = reader.nextDouble();

num2 = reader.nextDouble();

System.out.print("\nEnter an operator (+, -, \*, /): ");

op = reader.next().charAt(0);

switch(op) {

case '+': ans = num1 + num2;

break;

case '-': ans = num1 - num2;

break;

case '\*': ans = num1 \* num2;

break;

case '/': ans = num1 / num2;

break;

default: System.out.printf("Error! Enter correct operator");

return;

}

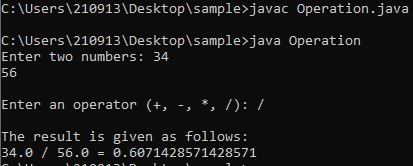
System.out.print("\nThe result is given as follows:\n");

System.out.printf(num1 + " " + op + " " + num2 + " = " + ans);

}

}

Output



**21.Create an array of 10 elements and print them using the for each loop.**

class Foreach {

public static void main(String[] args) {

// create an array

int[] numbers = {3,9,5,-5,7,9,2,3,4,5,};

// for each loop

for (int number: numbers) {

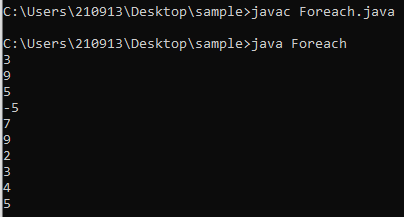
System.out.println(number);

}

}

}

Output



**22.Take the number input from the console and add all the positive numbers. (Not to consider the negative number if entered)**

import java.util.\*;

public class Inputfromconsole

{

public static void main(String[] args)

{

int n;

Scanner sc =new Scanner(System.in);

System.out.println("Enter the Number of elements you want to enter :");

n=sc.nextInt();

int[] a= new int[n];

System.out.println("Enter the elements :");

for (int i = 0; i < n; i++)

{

String s = System.console().readLine();

a[i] = Integer.parseInt(s);

}

int sum=0;

for (int i = 0; i < n; i++)

{

if(a[i] >=0)

sum=sum+a[i];

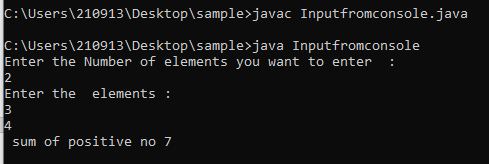
}

System.out.println(" sum of positive no " +sum);

}

}

Output



**24.Do the addition of around 10 even numbers, but use the continue statement in the logic.**

import java.io.\*;

class Even

{

public static void main(String[] args)

{

int count=0;

int sum = 0;

outer:

for(int i=1;i<50;i++)

{

if(i%2!=0)

{

continue;

}

else if(i%2==0)

{

sum+=i;

count++;

if(count==10)

{

break outer;

}

}

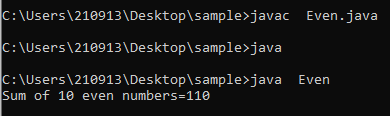
}

System.out.println("Sum of 10 even numbers"+"="+sum);

}

}

Output



**25.Write a program to reverse the String (use char [] or String built in method)**

import java.lang.\*;

import java.io.\*;

import java.util.\*;

class ReverseString1 {

public static void main(String[] args)

{

String input = "Training";

StringBuilder input1 = new StringBuilder();

input1.append(input);

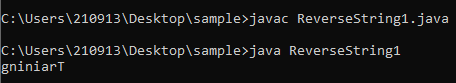
input1.reverse();

System.out.println(input1);

}

}

Output



**26.Write programs to depict the usage of contains (), length (), replace (), concat (), equals ()**

public class Stringoperations

{

public static void main(String ar[])

{

String s="Java is a programming language. Java is a platform. Java is an Island.";

String replaceString=s.replace("Java","Kava");//replaces all occurrences of "Java" to "Kava"

System.out.println(replaceString);

System.out.println("string length is:" +s.length());

s=s.concat("Hello");

System.out.println("output of concating is:" +s);

String s1="javatpoint";

String s2="javatpoint";

String s3="JAVATPOINT";

String s4="python";

System.out.println("equals or not:" +s1.equals(s2));

System.out.println("equals or not:"+s1.equals(s3));

System.out.println("equals or not:"+s1.equals(s4));

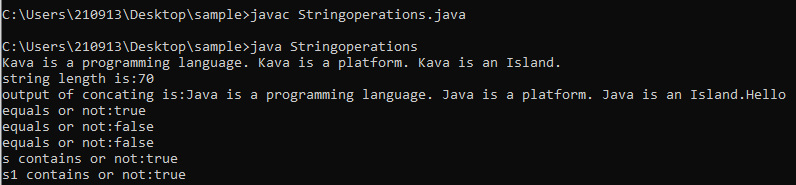
System.out.println("s contains or not:" +s.contains("program"));

System.out.println("s1 contains or not:" +s1.contains("point"));

}

}

Output



**27.Create an inheritance class. (Super class as Vehicle and 2 subclasses Car and Bike and inherit the Vehicle class methods)**

**class Vehicle {**

**public void type() {**

**System.out.println("Vehicle engine");**

**}**

**}**

**class Car extends Vehicle{**

**public void run() {**

**System.out.println("Car runs with diesel engine ");**

**}**

**}**

**class Bike extends Vehicle {**

**public void Bikerun() {**

**System.out.println("Bike runs with petrol engine");**

**}**

**}**

**public class Inheritanceclass {**

**public static void main(String[] args) {**

**Car obj1 = new Car();**

**Bike obj2 = new Bike();**

**obj1.type();**

**obj1.run();**

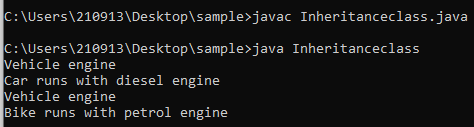
**obj2.type();**

**obj2.Bikerun();**

**}**

**}**

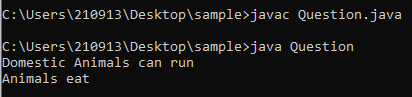
**Output**



**29.Create an abstract class and extend that class and try to create the object of the abstract class in a program and execute.**

abstract class Animals  
{  
abstract void run();  
void eat()  
{  
System.out.println("Animals eat");  
}  
}  
class Domestic extends Animals  
{  
void run()  
{  
System.out.println("Domestic Animals can run");  
}  
}  
class Question  
{  
public static void main(String[] args)  
{  
Domestic obj=new Domestic();  
obj.run();  
obj.eat();  
}  
}

Output



**33. How to add an element at a specific position in an Array List (create using <>)**

**import java.io.\*;**

**import java.util.ArrayList;**

**public class Arraylistadd{**

**public static void main(String[] args) {**

**// TODO Auto-generated method stub**

**ArrayList<String> list = new ArrayList<>();**

**list.add("A");**

**list.add("B");**

**list.add("C");**

**list.add(1, "D");**

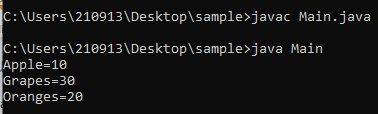
**list.add(2, "E");**

**System.out.println(list);**

**}**

**}**

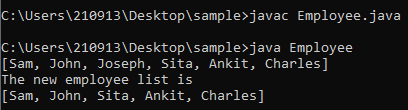
**Output**



**34.Create an array of employee objects and iterate through it and remove the object at the 2nd position.**

import java.util.\*;  
class Employee  
{  
public static void main(String[] args)  
{  
ArrayList<String>e=new ArrayList<String>();  
e.add("Sam");  
e.add("John");  
e.add("Joseph");  
e.add("Sita");  
e.add("Ankit");  
e.add("Charles");  
System.out.println(e);  
e.remove(2);  
System.out.println("The new employee list is ");  
System.out.println(e);  
  
}  
}

**Output**



**35.Create a HashMap type and display the elements using the keyset ()**

import java.util.HashMap;

public class Main{

public static void main(String[] args) {

HashMap<String, Integer> map = new HashMap<>();

map.put("Apple", 10);

map.put("Oranges", 20);

map.put("Grapes", 30);

for (String key: map.keySet()) {

System.out.println(key + "=" + map.get(key));

}

}

}

Output

