**Lab Manual for Full Stack Web Development-I**

1. Write a program to display the current date and add 1 week, 1 month,1 year and 10 years to the current date and print.

Program:

import java.time.LocalDate;

import java.time.temporal.ChronoUnit;

public class ChronoUnitTest {

public static void main(String args[]) {

// Get the current date

LocalDate today = LocalDate.now();

System.out.println("Current date: " + today);

// add 1 week to the current date

LocalDate nextWeek = today.plus(1, ChronoUnit.WEEKS);

System.out.println("Next week: " + nextWeek);

// add 1 month to the current date

LocalDate nextMonth = today.plus(1, ChronoUnit.MONTHS);

System.out.println("Next month: " + nextMonth);

// add 1 year to the current date

LocalDate nextYear = today.plus(1, ChronoUnit.YEARS);

System.out.println("Next year: " + nextYear);

// add 10 years to the current date

LocalDate nextDecade = today.plus(1, ChronoUnit.DECADES);

System.out.println("Date after ten year: " + nextDecade);

}

}

/\*

\* Current date: 2024-03-29

\* Next week: 2024-04-05

\* Next month: 2024-04-29

\* Next year: 2025-03-29

\* Date after ten year: 2034-03-29

\*/

1. Write a program to print dates in different formats.

Program:

import java.text.DateFormat;

import java.util.Date;

public class DateFormatExample2 {

public static void main(String[] args) {

Date currentDate = new Date();

System.out.println("Current Date: " + currentDate);

String dateToStr = DateFormat.getInstance().format(currentDate);

System.out.println("Date Format using getInstance(): " + dateToStr);

dateToStr = DateFormat.getDateInstance().format(currentDate);

System.out.println("Date Format using getDateInstance(): " + dateToStr);

dateToStr = DateFormat.getTimeInstance().format(currentDate);

System.out.println("Date Format using getTimeInstance(): " + dateToStr);

dateToStr = DateFormat.getDateTimeInstance().format(currentDate);

System.out.println("Date Format using getDateTimeInstance(): " + dateToStr);

dateToStr = DateFormat.getTimeInstance(DateFormat.SHORT).format(currentDate);

System.out.println("Date Format using getTimeInstance(DateFormat.SHORT): " + dateToStr);

dateToStr = DateFormat.getTimeInstance(DateFormat.MEDIUM).format(currentDate);

System.out.println("Date Format using getTimeInstance(DateFormat.MEDIUM): " + dateToStr);

dateToStr = DateFormat.getTimeInstance(DateFormat.LONG).format(currentDate);

System.out.println("Date Format using getTimeInstance(DateFormat.LONG): " + dateToStr);

dateToStr = DateFormat.getDateTimeInstance(DateFormat.LONG, DateFormat.SHORT).format(currentDate);

System.out.println("Date Format using getDateTimeInstance(DateFormat.LONG,DateFormat.SHORT): " + dateToStr);

}

}

/\*

\* Current Date: Thu Mar 07 10:12:34 IST 2024

\* Date Format using getInstance(): 07/03/24, 10:12?am

\* Date Format using getDateInstance(): 07-Mar-2024

\* Date Format using getTimeInstance(): 10:12:34?am

\* Date Format using getDateTimeInstance(): 07-Mar-2024, 10:12:34?am

\* Date Format using getTimeInstance(DateFormat.SHORT): 10:12?am

\* Date Format using getTimeInstance(DateFormat.MEDIUM): 10:12:34?am

\* Date Format using getTimeInstance(DateFormat.LONG): 10:12:34?am IST

\* Date Format using getDateTimeInstance(DateFormat.LONG,DateFormat.SHORT): 7

\* March 2024, 10:12?am

\*/

1. Write a program to print local date and check whether the year is leap year or not.

import java.time.LocalDate;

public class LocalDateExample1 {

public static void main(String[] args) {

LocalDate date = LocalDate.now();

LocalDate yesterday = date.minusDays(1);

LocalDate tomorrow = yesterday.plusDays(2);

boolean var = date.isLeapYear();

System.out.println("Yesterday date: " + yesterday);

System.out.println("Tomorrow date: " + tomorrow);

System.out.println("The Year is Leap?" + var);

}

}

/\*

\* Yesterday date: 2024-03-31

\* Tomorrow date: 2024-04-02

\* The Year is Leap?true

\*/

1. Write a program to get the period between two dates and duration between two times.

import java.time.temporal.ChronoUnit;

import java.time.LocalDate;

import java.time.LocalTime;

import java.time.Duration;

import java.time.Period;

public class PeriodDurationTest {

public static void main(String args[]) {

// Get the current date

LocalDate date1 = LocalDate.now();

System.out.println("Current date: " + date1);

// add 1 month to the current date

LocalDate date2 = date1.plus(1, ChronoUnit.MONTHS);

System.out.println("Next month: " + date2);

Period period = Period.between(date2, date1);

System.out.println("Period: " + period);

LocalTime time1 = LocalTime.now();

System.out.println("Current Time: " + time1);

Duration twoHours = Duration.ofHours(2);

LocalTime time2 = time1.plus(twoHours);

System.out.println(" Time2: " + time2);

Duration duration = Duration.between(time1, time2);

System.out.println("Duration: " + duration);

}

}

/\*

\* Current date: 2024-02-21

\* Next month: 2024-03-21

\* Period: P-1M ("P1M" is a one-month duration)

\* Current Time: 16:19:34.266723900

\* Time2: 21:19:34.266723900

\* Duration: PT2H (Period of Time)

\*/

1. Write a program to print a zone with date ,zone id and current zone.

import java.time.ZonedDateTime;

import java.time.ZoneId;

public class ZoneTest2 {

public static void main(String args[]) {

// Get the current date and time

ZonedDateTime date1 = ZonedDateTime.parse("2007-12-03T10:15:30+05:30[Asia/Karachi]");

System.out.println("date1: " + date1);

ZoneId id = ZoneId.of("Europe/Paris");

System.out.println("ZoneId: " + id);

ZoneId currentZone = ZoneId.systemDefault();

System.out.println("CurrentZone: " + currentZone);

}

}

/\*

\* date1: 2007-12-03T09:45:30+05:00[Asia/Karachi]

\* ZoneId: Europe/Paris

\* CurrentZone: Asia/Calcutta

\* PS C:\Users\nikit>

\*/

1. Write a program that converts various strings into date objects.

import java.text.SimpleDateFormat;

import java.util.Date;

public class StringToDateExample2 {

public static void main(String[] args) throws Exception {

String sDate1 = "31/12/1998";

String sDate2 = "31-Dec-1998";

String sDate3 = "12 31, 1998";

String sDate4 = "Thu, Dec 31 1998";

String sDate5 = "Thu, Dec 31 1998 23:37:50";

String sDate6 = "31-Dec-1998 23:37:50";

SimpleDateFormat formatter1 = new SimpleDateFormat("dd/MM/yyyy");

SimpleDateFormat formatter2 = new SimpleDateFormat("dd-MMM-yyyy");

SimpleDateFormat formatter3 = new SimpleDateFormat("MM dd, yyyy");

SimpleDateFormat formatter4 = new SimpleDateFormat("E, MMM dd yyyy");// day of the week ( E )

SimpleDateFormat formatter5 = new SimpleDateFormat("E, MMM dd yyyy HH:mm:ss");

SimpleDateFormat formatter6 = new SimpleDateFormat("dd-MMM-yyyy HH:mm:ss");

Date date1 = formatter1.parse(sDate1);

Date date2 = formatter2.parse(sDate2);

Date date3 = formatter3.parse(sDate3);

Date date4 = formatter4.parse(sDate4);

Date date5 = formatter5.parse(sDate5);

Date date6 = formatter6.parse(sDate6);

System.out.println(sDate1 + "\t" + date1);

System.out.println(sDate2 + "\t" + date2);

System.out.println(sDate3 + "\t" + date3);

System.out.println(sDate4 + "\t" + date4);

System.out.println(sDate5 + "\t" + date5);

System.out.println(sDate6 + "\t" + date6);

}

}

/\*

\* 31/12/1998 Thu Dec 31 00:00:00 IST 1998

\* 31-Dec-1998 Thu Dec 31 00:00:00 IST 1998

\* 12 31, 1998 Thu Dec 31 00:00:00 IST 1998

\* Thu, Dec 31 1998 Thu Dec 31 00:00:00 IST 1998

\* Thu, Dec 31 1998 23:37:50 Thu Dec 31 23:37:50 IST 1998

\* 31-Dec-1998 23:37:50 Thu Dec 31 23:37:50 IST 1998

\*/

1. Write a program to convert number from binary to decimal.

public class BinaryToDecimalExample3 {

public static int getDecimal(int binary) {

int decimal = 0;

int n = 0;

while (true) {

if (binary == 0) {

break;

} else {

int temp = binary % 10;

decimal += temp \* Math.pow(2, n);

binary = binary / 10;

n++;

}

}

return decimal;

}

public static void main(String args[]) {

System.out.println("Decimal of 1010 is: " + getDecimal(1010));

System.out.println("Decimal of 10101 is: " + getDecimal(10101));

System.out.println("Decimal of 11111 is: " + getDecimal(11111));

}

}

/\*

\* Decimal of 1010 is: 10

\* Decimal of 10101 is: 21

\* Decimal of 11111 is: 31

\*/

1. Write a program to convert Hexadecimal number to Decimal number.

public class HexaToDecimal1 {

public static void main(String arg[]) {

String st = "18";

int bn = Integer.parseInt(st, 16);

System.out.println(bn);

System.out.println(Integer.parseInt("f", 16));

System.out.println(Integer.parseInt("125", 16));

}

}

1. Write a program to encode and decode JSON object in PHP.

Encode:A white background with black text

Description automatically generated A black text on a white background

Description automatically generated

A computer code with red text

Description automatically generated

A computer code with black text

Description automatically generated

1. Write a program to encode and decode JSON object in JAVA.

Encode:

package com.mycompany.newjson;

import org.json.\*;

public class NewJson {

public static void main(String[] args) {

JSONObject obj=new JSONObject();

obj.put("name","sonoo");

obj.put("age",new Integer(27));

obj.put("salary",new Double(600000));

System.out.print(obj);

}

}

O/P:

{"name":"sonoo","salary":600000,"age":27}

Decode:

A screenshot of a computer code

Description automatically generated

A line of ovals with black lines

Description automatically generated

1. Write a program to decode JSON object using AJAX.

<html>

<head>

<meta content="text/html; charset=utf-8">

<title>AJAX JSON by Javatpoint</title>

<script type="application/javascript">

function load()

{

var url = "http://date.jsontest.com/";//use any url that have json data

var request;

if(window.XMLHttpRequest){

request=new XMLHttpRequest();//for Chrome, mozilla etc

}

else if(window.ActiveXObject){

request=new ActiveXObject("Microsoft.XMLHTTP");//for IE only

}

request.onreadystatechange = function(){

if (request.readyState == 4 )

{

var jsonObj = JSON.parse(request.responseText);//JSON.parse() returns JSON object

document.getElementById("date").innerHTML = jsonObj.date;

document.getElementById("time").innerHTML = jsonObj.time;

}

}

request.open("GET", url, true);

request.send();

}

</script>

</head>

<body>

Date: <span id="date"></span><br/>

Time: <span id="time"></span><br/>

<button type="button" onclick="load()">Load Information</button>

</body>

</html>

O/P:

