**Java 8 Date and Time Lab**

**Summary Level Instructions:**

1. Create a *java8()* instance method in DateApplication.java file. This is the file from the sample on Moodle.
2. If not already done so, change the “currentLocale” to “en\_IE” as opposed to Locale.US.
3. In the java8() method, do the following:
   1. What days of the week did World War II start and end?
   2. You need to be 18 years of age to consume alcohol. Given the birth dates of Joe Bloggs (12/2/2000) and Ann Bloggs (20/12/2010), figure out if they can be served? Output the answer for both.
   3. I get up at 06:30 every day except Sunday. Declare a LocalTime that represents the Sunday time i.e. do NOT declare it as 07:30 but declare it with respect to 06:30.
   4. What time is it in Tripoli ? Hint: Zone is "Africa/Tripoli".

ZoneId zoneTripoli = ZoneId.of("Africa/Tripoli");

* 1. Format the current ZoneDateTime according to the following DateTimeFormatter patterns:

"yyyy/MM/dd HH:mm:ss z" and "yyyy/MM/dd"

**Sample Output**

WW II started on: FRIDAY

WW II ended on: SUNDAY

To be served, you must be born before : 2001-03-20

Joe Bloggs DOB is 2000-02-12

Yes. Joe is old enough to be served alcohol.

Ann Bloggs DOB is 2010-12-20

No. Ann is too young to be served alcohol.

I get up on Sunday at: 07:30

In Athlone it is: 2019-03-20T21:40:36.602Z[Europe/Dublin]

In Tripoli it is: 2019-03-20T23:40:36.602+02:00[Africa/Tripoli]

2019-03-20T21:40:36.753Z[Europe/Dublin] formatted with DateTimeFormatter and 'yyyy/MM/dd HH:mm:ss z': 2019/03/20 21:40:36 GMT

2019-03-20T21:40:36.753Z[Europe/Dublin] formatted with DateTimeFormatter and 'yyyy/MM/dd': 2019/03/20

**Detailed Level Instructions (includes solution code):**

1. Create a *java8()* instance method in DateApplication.java file. This is the file from the sample on Moodle.
2. If not already done so, change the “currentLocale” to “en\_IE” as opposed to Locale.US.  
   1. // Locale currentLocale = Locale.US;
   2. Locale irlLocale = new Locale("en", "IE");
   3. Locale currentLocale = irlLocale;
3. In the java8() method, do the following:
   1. What days of the week did World War II start and end?

LocalDate startWW2 = LocalDate.of(1939, Month.SEPTEMBER, 1);

LocalDate endWW2 = LocalDate.of(1945, Month.SEPTEMBER, 2);

System.out.println("WW II started on: "+startWW2.getDayOfWeek());

System.out.println("WW II ended on: "+endWW2.getDayOfWeek());

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* 1. You need to be 18 years of age to consume alcohol. Given the birth dates of Joe Bloggs (12/2/2000) and Ann Bloggs (20/12/2010), figure out if they can be served? Output the answer for both.

LocalDate now = LocalDate.now();

LocalDate eighteenYearsAgo = now.minus(18, ChronoUnit.YEARS);

LocalDate joeBloggsBirthday = LocalDate.of(2000, Month.FEBRUARY, 12);

LocalDate annBloggsBirthday = LocalDate.of(2010, Month.DECEMBER, 20);

System.out.println("To be served, you must be born before : "+eighteenYearsAgo);

System.out.println("Joe Bloggs DOB is "+joeBloggsBirthday);

if(joeBloggsBirthday.isBefore(eighteenYearsAgo)){

System.out.println("Yes. Joe is old enough to be served alcohol.");

}else{

System.out.println("No. Joe is too young to be served alcohol.");

}

System.out.println("Ann Bloggs DOB is "+annBloggsBirthday);

if(annBloggsBirthday.isBefore(eighteenYearsAgo)){

System.out.println("Yes. Ann is old enough to be served alcohol.");

}else{

System.out.println("No. Ann is too young to be served alcohol.");}

* 1. I get up at 06:30 every day except Sunday. Declare a LocalTime that represents the Sunday time i.e. do NOT declare it as 07:30 but declare it with respect to 06:30.

LocalTime sundayRise = LocalTime.of(06, 30).plus(1, ChronoUnit.HOURS);

System.out.println("I get up on Sunday at: "+sundayRise);

* 1. What time is it in Tripoli ? Hint: Zone is "Africa/Tripoli".

ZoneId zoneTripoli = ZoneId.of("Africa/Tripoli");

LocalDateTime nowDT = LocalDateTime.now();

// Let's get the local time in Tripoli

ZonedDateTime athloneZoneTime = nowDT.atZone(ZoneId.of("Europe/Dublin"));

ZonedDateTime tripoliZoneTime = athloneZoneTime.withZoneSameInstant(zoneTripoli);

// In Athlone it is: 2019-03-20T20:39:22.876Z[Europe/Dublin]

// In Tripoli it is: 2019-03-20T22:39:22.876+02:00[Africa/Tripoli]

System.out.println("In Athlone it is: "+athloneZoneTime);

System.out.println("In Tripoli it is: "+tripoliZoneTime);

* 1. Format the current ZoneDateTime according to the following DateTimeFormatter patterns:

"yyyy/MM/dd HH:mm:ss z" and "yyyy/MM/dd"

String dateTimeFormatPattern = "yyyy/MM/dd HH:mm:ss z";

String dateTimeFormatPattern2 = "yyyy/MM/dd";

DateTimeFormatter formatter = DateTimeFormatter.ofPattern(dateTimeFormatPattern);

DateTimeFormatter formatter2 = DateTimeFormatter.ofPattern(dateTimeFormatPattern2);

ZonedDateTime nowZone = ZonedDateTime.now();

System.out.println(

nowZone + " formatted with DateTimeFormatter and '"

+ dateTimeFormatPattern + "': " + formatter.format(nowZone));

System.out.println(

nowZone + " formatted with DateTimeFormatter and '"

+ dateTimeFormatPattern2 + "': " + formatter2.format(nowZone));