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Sana va vaqt bilan ishlash

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Reja:

1. Vaqt tushunchasi
2. Calendar;
3. Date;
4. DateFormat.

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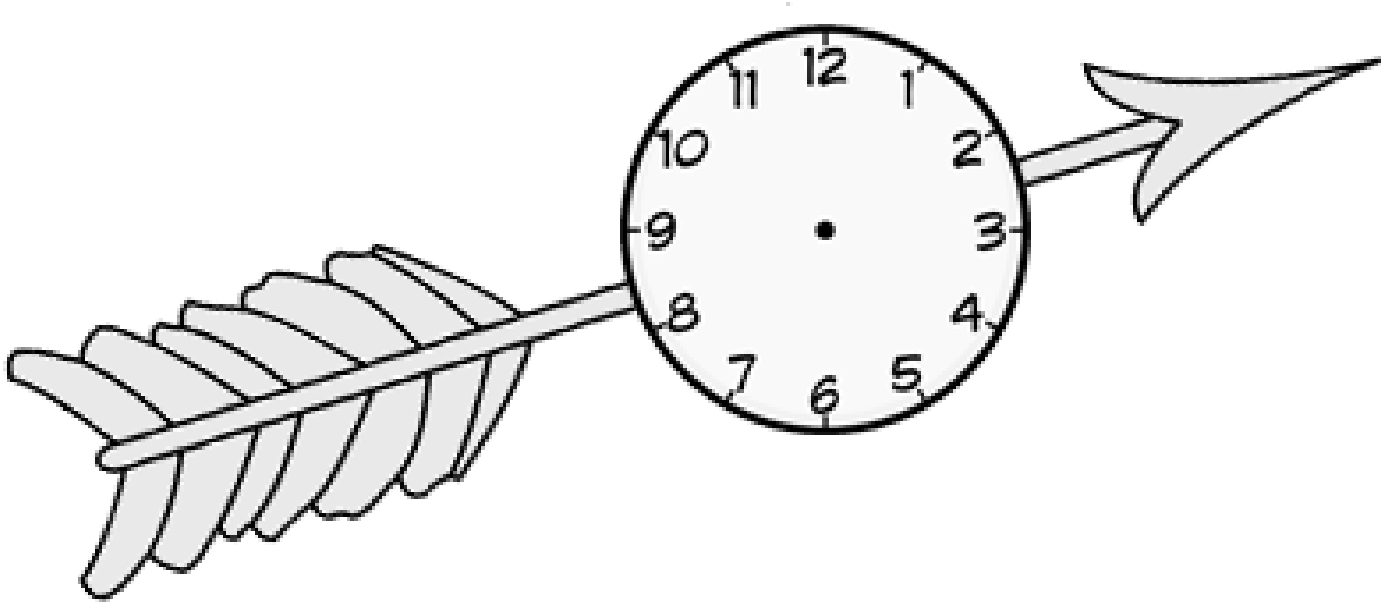
Vaqt tushunchasi



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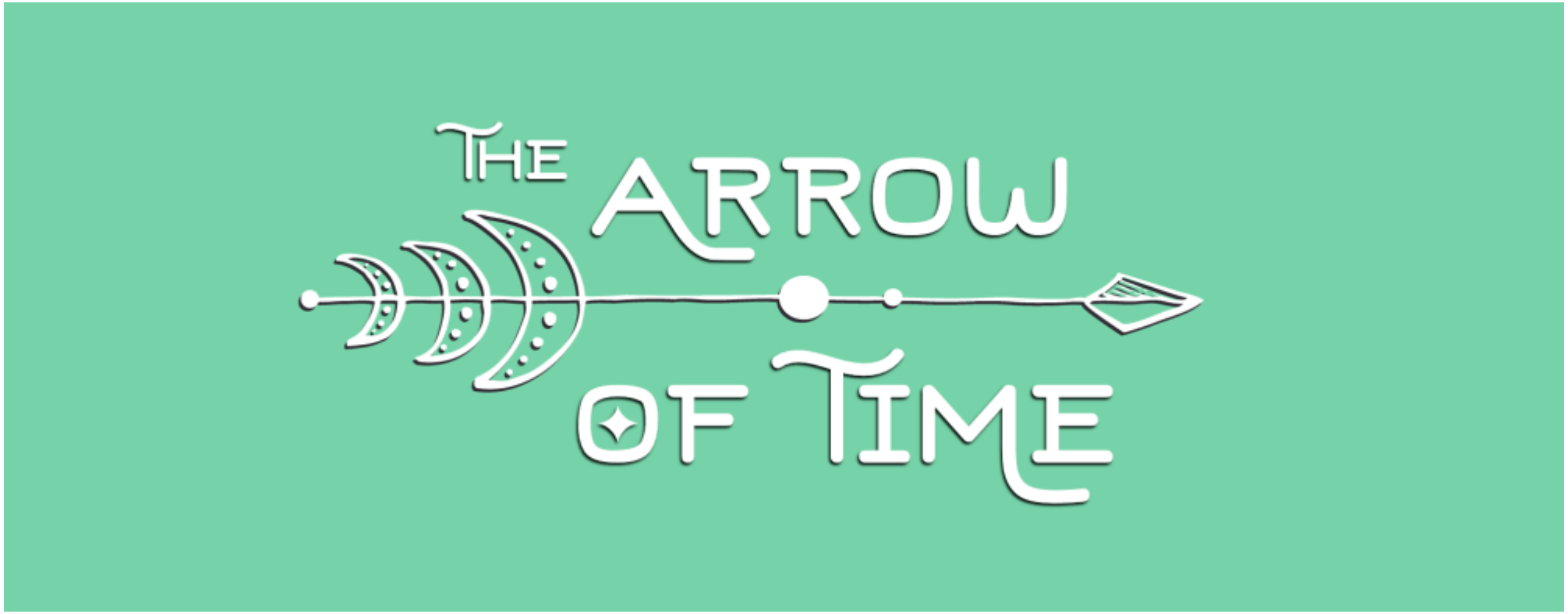
Vaqt tushunchasi



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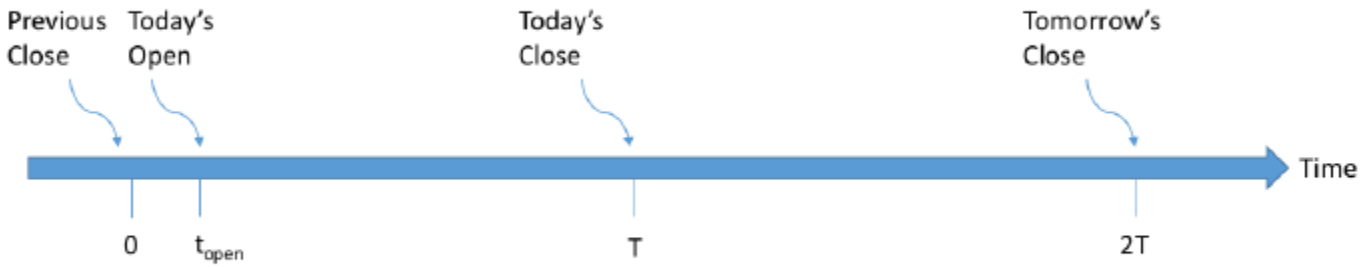
Vaqt tushunchasi



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GMT and UTC

- **Grinvich bo'yicha o'rta vaqt** (ing. ***Greenwich Mean Time***, GMT) — London yaqinidagi Grinvich qirollik observatoriyasidan o'tuvchi astronomik (O'rta quyosh) meridian vaqti.
- Avvallari GMT vaqt hisob nuqtasi hisoblanib, qolgan vaqt belbog'lari(Time Zone) shu yerdan boshlab hisoblangan. Hozirda uning o'rniga Halqaro kordinatlashtirilgan vaqt (**Coordinated Universal Time** UTC) ishlatiladi.

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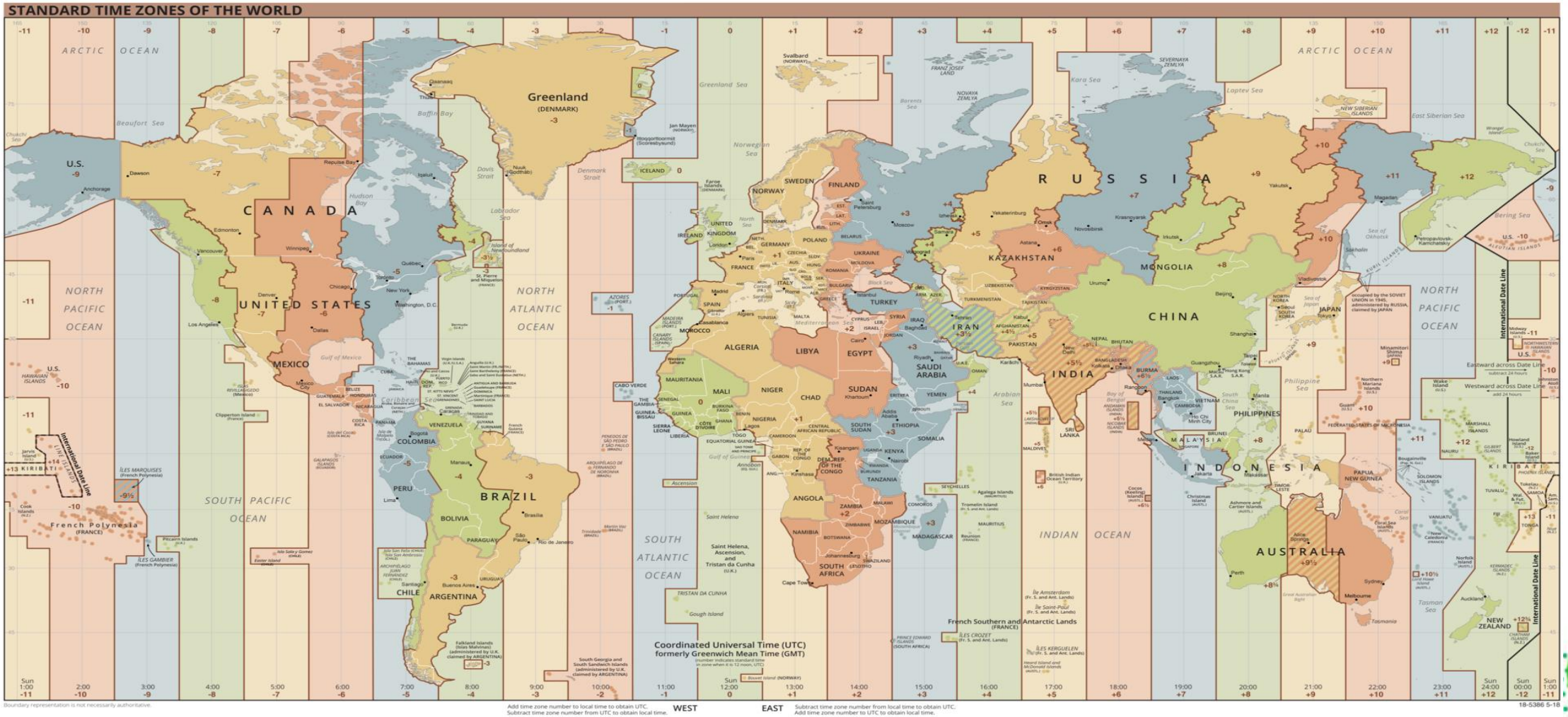
Time Zones (Vaqt belbog’lari)



Time Zones (Vaqt belbog’lari)

Yerning o'z o'qi atrofida aylanishi tufayli, quyoshli kun dunyoning turli joylarida bir xil emas. Ushbu astronomik hodisani tuzatish uchun **vaqt zonasi tushunchasi** kiritilgan. Buning uchun butun yer sharni shartli ravishda 15 graduslik 24 soatlik mintaqalarga bo'lingan. Bunda Grinvich Meridiani nolga tenglashtirildi. Shubhasiz, qutblarga yaqinlashganda, vaqt zonalari ma'nosi yo'qoladi va u yerda universal vaqt deb ataladi.

https://www.timeanddate.com/time/map/

https://time.is/

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Calendar/Date API

- Calendar
- Date
- DateFormat

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Calendar

Calendar calendar = Calendar.*getInstance*();

yoki

Calendar calendar = new GregorianCalendar();

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Calendar

```
System.out.println("Day of week : " +  calendar.get(Calendar.DAY_OF_WEEK));
System.out.println("Day of year : " + calendar.get(Calendar.DAY_OF_YEAR));
System.out.println("Week in Month : " + calendar.get(Calendar.WEEK_OF_MONTH));
System.out.println("Week in Year : " + calendar.get(Calendar.WEEK_OF_YEAR));
System.out.println("Day of Week in Month : " + calendar.get(Calendar.DAY_OF_WEEK_IN_MONTH));
System.out.println("Hour : " + calendar.get(Calendar.HOUR));
System.out.println("Minute : " + calendar.get(Calendar.MINUTE));
System.out.println("Second : " + calendar.get(Calendar.SECOND));
System.out.println("AM or PM : " + calendar.get(Calendar.AM_PM));
System.out.println("Hour (24-hour clock) : " + calendar.get(Calendar.HOUR_OF_DAY));
```

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Date

Constructors:

- Date( )
- Date(long millisec)

```
Date date=new Date();

Date date=new Date(1596356496878l);
```

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Date

Methods:

- boolean after(Date date)
- boolean before(Date date)
- long getTime( )
- void setTime(long time)

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DateFormat

Date ni istalgan formatga o’tkazish uchun ishlatiladi

- format()
- parse()

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DateFormat

Character	Description	Example
G	Era designator	AD
y	Year in four digits	2001
M	Month in year	July or 07
d	Day in month	10
h	Hour in A.M./P.M. (1~12)	12
H	Hour in day (0~23)	22
m	Minute in hour	30
s	Second in minute	55
S	Millisecond	234
E	Day in week	Tuesday
D	Day in year	360
F	Day of week in month	2 (second Wed. in July)
w	Week in year	40
W	Week in month	1
a	A.M./P.M. marker	PM
k	Hour in day (1~24)	24
K	Hour in A.M./P.M. (0~11)	10
z	Time zone	Eastern Standard Time
'	Escape for text	Delimiter
''	Single quote	`

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DateFormat

format() - ni ko’rsatilgan formatdagi matnga o’tkasish uchun ishlatiladi

```
Date date=new Date();
DateFormat dateFormat=
        new SimpleDateFormat(" 'Sana: ' dd.MM.yyyy', Kun: 'E', Vaqt:' hh:mm:ss a zzz");
System.out.println(dateFormat.format(date));
```

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DateFormat

parse() – ko’rsatilgan formatdagi matnni **Date** toifasiga o’tkazish uchun qo’llaniladi

```
DateFormat dateFormat = new SimpleDateFormat("dd.MM.yyyy");
try {
    Date date = dateFormat.parse("02.08.2014");
} catch (ParseException e) {
    e.printStackTrace();
}
```

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Date/Calendar API dagi muammolar

1. Oqim(поток)lar bilan ishlaganda xavfsiz emas.
2. Mukammal emas
3. Time Zone lar bilan ishlaganda qo’shimcha logika yozishga to’g’ri keladi.
4. Dizayni tushunarsiz

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E’TIBORINGIZ UCHUN RAXMAT