What is the Time?

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Contents

1. *What Is The Time*
2. *What is a second exactly?*
3. *What Is The Past,Present,Future?*
4. *Unusual role of candle in human history*
5. *Water Clock*
6. *Sand Dial*
7. *Town Clock*
8. *Comparison of events and processes*
9. *Time And Numbers*
10. *Is Time Travel Possible ?*
11. *The Time Travel Analysis*
12. *Time travel on the Earth*
13. *Time travel in virtual reality*
14. *Life in virtual reality*
15. *Time as a logical procedure*
16. *Length of process*
17. *Sample of TIME*

18.*Sample of TIME #2*
19.*Einstein's train, the absolute and relative speed of a photon*
20.*Illusory perception of events in a moving system*
21.*The different types of time machines*
22.*The Teleportation Device as a Time Machine*
23.*Illustrations* page 117

What Is The Time

We can define time as a process of comparison of flows of two processes.
We compare the flow of one process with the progress of another one.
We may ask:"How often one process repeats while another one still does not end.
To do the comparison we can use one process as standard(usually this is repeatable process) and compare with it the measured one.

As an analogy we can use the procedure of finding the length of the object.
We count how many times a smaller object(measuring stick) “fits” in the measured one.
Then we “measure the time” we count how many times faster(shorter) process will “fits” in the bigger(longer) one.
Obviously, the shorter the standard process in accordance to the measured one - the more accurate result will be obtained.
Let’s create a hypothetical world.
World where only Drop Clock is in use.
What is the construction of this clock? Here it is.
In the reservoir, filled with water, in the bottom, there is a small hole of such size that water doesn't flow through this hole but drops.
Under the reservoir, at some distance, there is a thin metal sheet fixed only by one side.
Then a water drop hits the metal sheet, creating a strong noise.
Let’s assume the observer compares the process of water dripping from this clock and

the process of candle burning. He is "measuring time" :)
After he finishes counting how many drops of water fail while the candle was burning,he may say, for example:" Candle burned out in 1758 drops".
Or he will measure how fast the sportsmen run a mile.
He may say:"It took 177 drops to run a mile".
Unusual to hear the word "drop" as a measuring unit to judge the speed of the process.
But, since we know where this is from, we will say what such practice has the right to exist in such a hypothetical world.
Where does a second, a minute, an hour , a day , a month, a year comes from?

In our real world we also start to compare one process to another in an attempt to find the measuring unit which can be understood by anybody around us.
In the beginning people lived in small groups and did not know any measuring units, but Day.

All their primitive life was connected with the light period of the day and dark period of the day.
At night, the danger was all around, so they hid in the caves.
As soon as the Sun arose, a new day was coming.
So they count the days if they want to talk about someone's life, how long he has lived.
At some point, because they believed that the Moon was born and died, after this again and again born and dies, they start to use this event as a measuring unit.
They start measuring the length of human life not by days but by Moons.
They may say:"My father lived for 457 moons".
At some point they discovered that seasons repeated all the time,and it is connected with the Sun.
Moon always exists, but gets into the Earth's shadow periodically.
Connecting all these events(days,months,years) was not an easy task.
But it was done in the first primitive countries.

Even at the beginning it was believed that the Sun rotates around the Earth,this was not the obstacle to find the period by itself.

It was done in many ancient civilizations. It is called a Year.
The period of rotation of the Moon around the Earth they called a Month.
They believed that there are 12 month in the year.
That's how the lunar calendar was born.
Ancient astronomers in different countries did the same experiment.
They count the days between two identical positions of the Sun in the skies during the year.
Such events as Fall or Spring Equinox.
In different places they got the same result which satisfies the needs of the people of that time.
The length of the Year was 365.25 days.
That's how the Sun calendar was born.
Since the life of the people connected more to the Sun than the Moon,this kind of calendar prevails and is used in most countries to this day.

But where does a second, a minute, an hour come from?
The SunDial is the mother who gave us these small fellas.
Ancient Egyptians, probably, were the first people who used such devices.
They divide the dial from the dawn mark to the dusk mark by 12, and call each part an Hour.
At summer time an Hour was long, at winter - short.
And only at the fall or spring Equinox such a device was shown “real” Hours.
Same people divide the Hour by 60 and call each of this part a Minute.
After this they divided each minute by 60 and called it a Second.
Sundial was good to see for minutes, but seconds were impossible to observe.
I believe someone, somewhere must have invented the sundial that uses a mirror.
Mirror was placed on the high tower, for example.
The sunbeam from this mirror will move across the dial, and this dial is located far from the mirror,so a person can easily observe

how the sunbeam moves from one second mark to another.
Probably it was never invented at that time, people were satisfied with minutes.
Today it can be an interesting attraction.
Sand dial was invented, a water clock was invented.
But seconds were hard to count with such tools.
And people just counted by themselves!
Someone, someday will find out that if you repeat some phrase constantly while a one minute sand clock runs, it may fit in this period very precisely.
In different countries it will be a different phrase.
In the USA it will be:"One thousand" plus the number counted.
For example, the person starts counting:" One thousand one","One thousand two","One thousand three"....."One thousand twelve", and at this moment the process has ended.
This means that this process flowed for 12 seconds.
In medieval times the mechanical clock.

Finally the chronometer and stopwatch was invented.
Atomic clocks shake the human ability to imagine how accurate this machine can be.
But no matter how accurate this tool can be, the idea is the same.
How many standard processes will fit in the measured one.
Now, after we have studied the history of expression “Time”, we can say that time is a procedure,or description of procedure, or logical, numerical expression which can be used in logical operation to define the stages of some process.
You can’t manipulate with time, can’t create it or destroy it.
You can execute it or not(if time is a procedure), you can use this information in logical procedure or not(if time is a logical or numerical expression).
But even though it sounds paradoxical, expressions like “time disappeared” or “time stopped”,can reflect the very real state of the matter in this world.

“Time doesn't exist” - if there are no material objects, no events, no processes,no time as a result of the absolute absence of the matter.
“Time disappeared” - if everything cools down all in this world to the absolute zero, when all events,but the fly of the frozen objects will stop.
And even the objects will still fly through the Universe, nothing material will be able to execute the Time, comparing one event with another.

What is a second exactly?

1. A Second is a logical definition, a description of a process or an event.
An event (or process) has a beginning and an end.
We are living in the world of objects, and with these objects, there are events happening.Events (processes) may also happen in virtual space, there is a rule that the material world appears as a logical model.

For example, a digital sum can be a virtual object.
Digital sums do not exist in the material world.
But some can be changed into a virtual process, some can become bigger or smaller,which means that we can observe this process and compare it with other processes.
This can happen in the real world or virtual world.
This is why I made this absolutely necessary intermission.
2. Let's make an example of such a process that is easy to create and observe.
We will use a process of the free-fall effect, in which the object is under the influence of the earth's gravity.
This is accompanied with normal air pressure, normal humidity and is at sea level.

Then: a Second - is a process which starts at the moment when an object begins to free fall from the height of 4905 millimeters.
This process ends when the object hits the ground .
We must take into account , however, that the material from which this object was made must be so dense that air resistance practically doesn't affect the movements of free-falling.
If you drop a paper ball, it will fall far longer than a ball made from platinum or gold.
Seconds will have different lengths. Depending on geographical location, seconds will also be different lengths,since the gravitational pull will vary in different locations.
3. Let's try a process so stable that it will not matter where we will make our calculations.

Let's use one period of rotation around the Sun.
A Second is 1/31556926 part of the full process of rotation of the Earth around the Sun.
We walk in the footsteps of our predecessors, who divided the year in 365.2422222 days,divided days into 24 hours, an hour into 60 minutes, and minutes into 60 seconds.
This is why there are 31556926 seconds in the year.
I must confess, actually, that I am trying to show the connection between the period of the Earth around the Sun and the process of changing the orientation of a clock's handle around the dial.
For hundreds of years people have checked how good the clocks would work by using a very simple method.
A certain moment has to come in which the Earth and the Sun are in a certain

position(for example, the spring Equinox), so that the clock can start. After a period of one year, the Earth stood in the same position (just like one year ago) the clock was checked to see what it showed.
By comparing which clocks showed one year ago and clocks that are showing the current time,people were able to find out how good their clocks worked.
4. Imagine, we made a clock with only one handle, and this handle makes 31556926 rotations while the Earth completes one rotation around the Sun. According to this clock: a Second - is one rotation of the handle.
Let's create a clock with a handle which makes 60 times less revolutions then the previous clocks handle.
It will handle 525949 revolutions while the Earth completes one revolution around the Sun.

Let’s make a dial for this clock with 60 marks on it.
According to this clock: a Second - is a process of handle movements which begins when the tip of the handle is on the one mark of the dial,and ends when the tip of the handle is on the next mark of the dial.
We just described what a Second is, by using a stopwatch :)
Also, according to this watch: a Minute - is a process of one revolution of this handle.
Well, you already understand what we invented again, clocks with seconds, minutes and hour handles. I will not describe the whole process.You understand the idea.
When we create such a mechanism, we are able to generate stable standard processes(handles change orientation according to dial), thus we do not need to use such inconvenient standard

processes like the movement of objects in the skies.
The beginning, or end of the day, burning candles, roosters crowing at night or in the morning,water or sand flowing from one bucket to another, and so on.
I think now you can figure out what is a minute, hour, week, or month .....

What Is The Past,Present,Future?

By using the concept "event" we will define what is the Past,Present,Future.
I will sometimes use the abbreviation PPF(Past,Present,Future) here.
Event is a process or array of processes.
No event exists without beginning and the end.
Process and event starting up, flows and finally ends.

Even if we consider what event was momentary, this is just a very short process.
Say,if nothing was changed, then the event(process) never happened.
Let's define PPF(Past,Present,Future).
Past - is the event(s) which already ended.
Present - is the event(s) which still flows(in process).
Future - is the event(s) which haven't started yet(don't exist and didn't exist).
Applying this definition of PPF and using only one standard process means to me the most rational(even though we still have some trouble).
To find a such a process became the main factor in the attempt to build the logical explanation of PPF in every particular situation and this(principal event) must include
inside all other events of the same category.

What happens if we try to apply PPF conception to define all events in the Universe?

END OF SAMPLE