The real number system is not dense rather than it maintains gap theory

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ABSTRACT

The statement that the real number system is dense is wrong. That is density property of real numbers is wrong. If we take two consecutive real numbers a,b then we can get a third real no (a+b)/2=c in between a,b . But we will get two gaps in between a,c and c,b. So we can say real numbers maintains gap theory instead of density property. Like this rational numbers also maintain gap theory, but natural numbers , whole numbers, integers maintains density property .

The real numbers are not dense enough as we see from the proof of its density property. Let a, b are two consecutive real numbers then by the proof of density property we will get (a+b)/2=c another number in between a and b . By applying this process we get unlimited real numbers in between two consecutive real numbers. But we can not see that to make the system dense we get always more gaps. Like we will get two more gaps between a,c and c,b when you put c in between a ,b . For that reason I will say that the real numbers are not dense enough but also many gaps there are. The proper thing is that the real numbers maintain gap theory in my logic.
Similarly we can say that rational numbers also maintain gap theory.
But natural number system is dense, because in between two consecutive natural numbers we can not get any natural number. Though there may be other kinds of numbers in between two consecutive natural numbers but no natural number presents. So natural numbers, whole numbers, integers are dense. They do not maintain gap theory but real numbers, rational numbers maintain gap theory not density property.