SalaryFinance

Starship Captain Challenge

You are the captain of a starship. You have been tasked with finding the 10 closest habitable planets to your home world and colonizing them.

Your home world is located at these coordinates:
123.123.99.1 X & 098.098.11.1 Y & 456.456.99.9 Z

Your coordinate system ranges from 000.000.00.0 to 999.999.99.9

1. Design and code an algorithm to randomly generate 15,000 coordinates. Each of these coordinates must be randomly marked as a planet or a very hungry space monster. (Space monsters eat starships and should be avoided at all costs)
    - Each of these coordinates marked as a planet must be randomly marked as habitable or not.
    - Each Habitable planet must have a surface area randomly ranging from 1 million to 100 million square kilometers.
    - Due to the strange construction of the star system you live in, travel time between any planet and its immediate neighbor is always 10 minutes

    Write the results to a .txt file in a format of your choosing.

2. Design and code an algorithm to read the file created in step 1 which will identify the planets you have to travel to and colonize to achieve the largest amount of colonized space within a 24-hour period.

    - In order to inhabit a planet, you have to colonize more than 50% of its surface.
    - Colonization takes place at exactly 0.43 seconds per square kilometer.

Give an explanation of your thought processes used to solve the problem and clearly state any assumptions made – these should be done through comments in the code.

Complete your solution in a Visual Studio project using the C#, VB.NET or JavaScript programming language. If you do not have Visual Studio you can download the community edition for free from the Internet.

Solutions coded completely in SQL will also be accepted, the file writing and reading component can be replaced with the use of a temp table. Please note that the script must be able to run against any database (i.e. must not use any schema of the database itself, but only temporary database structures). Again, SQL Express can be downloaded for free from the Internet.

PLEASE NOTE:

1) Make sure you read and understand the challenge 100% before you do any coding.
2) Good design will be valued more than absolute output correctness.
3) Code efficiency is important.
4) Comment your code!
5) If you don't understand part of the challenge, read it again. If you still do not understand, please feel free to send us any questions.
6) Have fun!

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Loan Comparison Tool

Take a look at our website www.salaryfinance.com, you are going to build a loan comparison tool using JSFiddle (https://jsfiddle.net).

Create an interface to compare credit card debt and a SalaryFinance Loan.

The user interface needs to capture:

- Credit Card balance
- Credit Card APR
- Monthly Repayment Amount

On a button click, the UI should display:

- Number of months remaining to pay off the Credit Card debt and the total amount that will be repaid.
- Details of a SalaryFinance loan (at 7.9% APR), including monthly repayment amount, total repayment amount, and length of term.
- Explain to the user how much better off they will be by having a SalaryFinance Loan.

Feel free to play with design and or provide other supplement materials to communicate this. Clearly state any assumptions made – these can be done through comments in the code.

PLEASE NOTE:

1) The UI should be intuitive, albeit simple.
2) Output correctness is important.
3) Code efficiency is important.
4) Comment your code!
5) Have fun!

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