

Recurssion Releation

Assignment Questions



1. Find the value of $T(2)$ for the recurrence relation $T(n) = 3T(n-1) + 12n$, given that $T(0)=5$.

2. Given a recurrence relation, solve it using the substitution method:

a. $T(n) = T(n-1) + c$

b. $T(n) = 2T(n/2) + n$

c. $T(n) = 2T(n/2) + c$

d. $T(n) = T(n/2) + c$

3. Given a recurrence relation, solve it using the recursive tree approach:

a. $T(n) = 2T(n-1) + 1$

b. $T(n) = 2T(n/2) + n$



Submission Guidelines:

- Answer all the questions in a single Jupyter Notebook file (.ipynb).
- Include necessary code, comments, and explanations to support your answers and implementation.
- Ensure the notebook runs without errors and is well-organized.
- Create a GitHub repository to host your assignment files.
- Rename the Jupyter Notebook file using the format "date_month_topic.ipynb" (e.g., "21st_September_GAN.ipynb").
- Place the Jupyter Notebook file in the repository.
- Commit and push any additional files or resources required to run your code (if applicable) to the repository.
- Ensure the repository is publicly accessible.
- Submit the link to your GitHub repository as the assignment submission.

Grading Criteria:

- Understanding and completeness of answers: 40%
- Clarity and depth of explanations: 25%
- Correct implementation and evaluation of optimizer techniques: 15%
- Analysis and comparison of different optimizers: 10%
- Proper code implementation and organization: 10%

Note: Create your assignment in Jupyter notebook and upload it to GitHub & share that uploaded assignment file link through your dashboard. Make sure the repository is public.