14 Lecture - CS301

Important Subjective

1. **What is recursion?**
   Answer: Recursion is a programming technique where a function calls itself within its own code.
2. **What is the base case in recursion?**
   Answer: The base case is the case where the function returns a value without calling itself, stopping the recursive process.
3. **What is the difference between direct and indirect recursion?**
   Answer: Direct recursion occurs when a function calls itself, while indirect recursion occurs when two or more functions call each other.
4. **What is tail recursion?**
   Answer: Tail recursion is a type of recursion where the recursive call is the last operation performed by the function.
5. **What is the maximum number of recursive calls that can be made?**
   Answer: The maximum number of recursive calls that can be made depends on the available memory.
6. **What is a stack overflow error?**
   Answer: A stack overflow error occurs when the maximum stack size is exceeded due to too many recursive calls.
7. **What are the advantages of recursion?**
   Answer: Recursion can simplify complex problems by breaking them down into smaller subproblems, and can be more readable and concise than iterative solutions.
8. **What are the disadvantages of recursion?**
   Answer: Recursion may cause stack overflow errors and can be less efficient than iterative solutions.
9. **What is the role of the base case in recursion?**
   Answer: The base case provides a stopping condition for the recursive process.
10. **What are some common algorithms that use recursion?**
    Answer: Quick sort, merge sort, and binary search are common algorithms that use recursion.