

Amritanilayam Stotras

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The diagram illustrates the layout of a 16-bit instruction. The instruction is divided into four 4-bit fields. The first field is the opcode, the second is the register number, the third is the shift amount, and the fourth is the destination register number. The diagram shows the bit positions for each field and the corresponding register numbers.

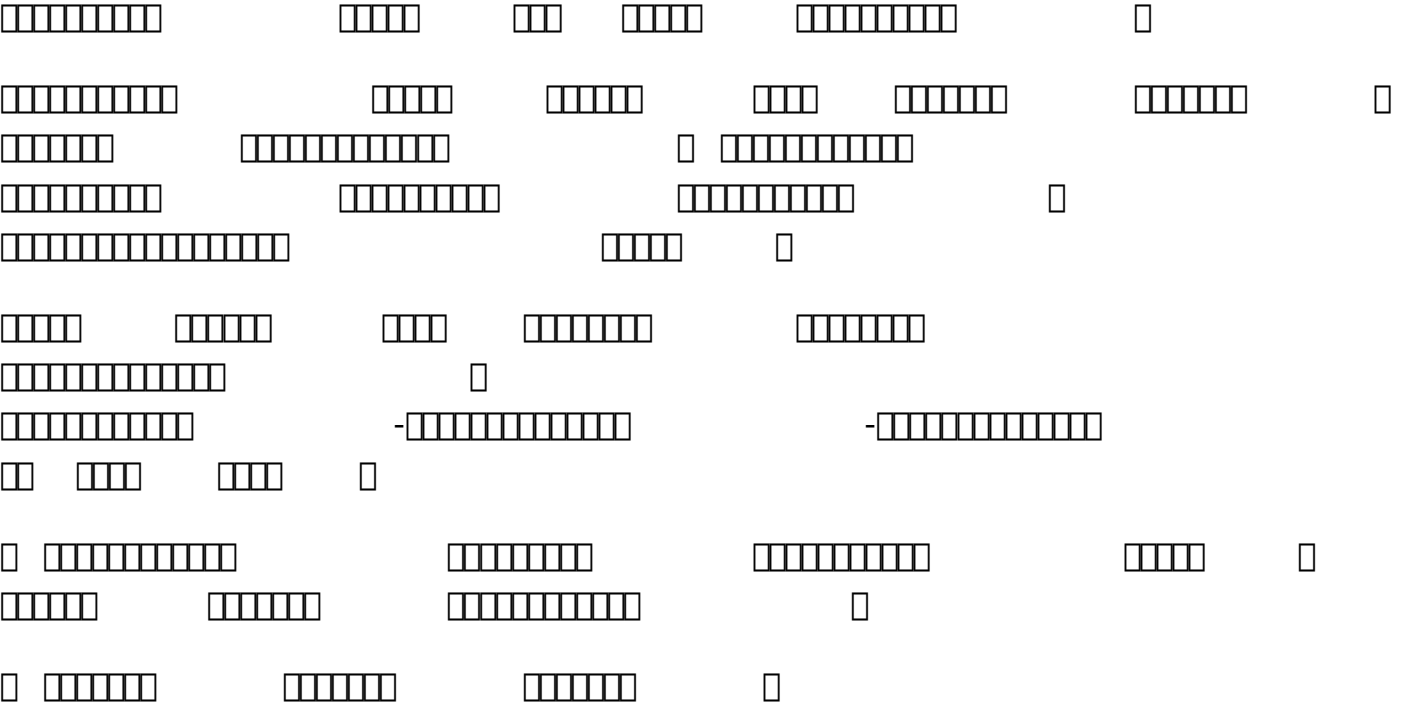
The diagram illustrates the construction of a Huffman tree for the characters a, b, c, d, e, f, g, h with frequencies 1, 3, 1, 4, 2, 1, 1, 1 respectively. The process is shown in five rows:

- Row 1: Initial characters and frequencies: a (1), b (3), c (1), d (4), e (2), f (1), g (1), h (1).
- Row 2: First merge: a and b are combined into a tree with root 4.
- Row 3: Second merge: c and d are combined into a tree with root 5.
- Row 4: Third merge: e and f are combined into a tree with root 3.
- Row 5: Fourth merge: g and h are combined into a tree with root 2.
- Row 6: Final merge: The two trees from Row 3 and Row 4 are combined into a single root tree with root 10.

The final tree structure is shown at the bottom, with the root node having a left child 'a' and a right child 'b'. The left child 'a' has a left child 'c' and a right child 'd'. The right child 'b' has a left child 'e' and a right child 'f'. The left child 'c' has a left child 'g' and a right child 'h'.

The diagram illustrates the construction of a Huffman tree through several steps:

- Initial Characters and Frequencies:** A row of boxes representing characters and their frequencies: 'a' (1), 'b' (1), 'c' (2), 'd' (1), 'e' (3), 'f' (1), 'g' (4), 'h' (1), 'i' (4), 'j' (2), 'k' (1), 'l' (1), 'm' (4), 'n' (4), 'o' (3), 'p' (1), 'q' (1), 'r' (4), 's' (4), 't' (1), 'u' (1), 'v' (4), 'w' (4), 'x' (4), 'y' (4), 'z' (4).
- Merging Process:** Subsequent rows show the iterative merging of the two smallest trees. For example, 'a' and 'b' are merged into a tree with root frequency 2. Then, 'c' and 'd' are merged into a tree with root frequency 3. This process continues until all characters are merged into a single tree.
- Final Huffman Tree:** The completed tree structure is shown on the right. The root node has a frequency of 100. It branches into two main subtrees. The left subtree has a frequency of 50 and branches into nodes with frequencies 25 and 25. The right subtree has a frequency of 50 and branches into nodes with frequencies 25 and 25. The leaf nodes represent the characters 'a' through 'z' with their respective frequencies.



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