**Code:**

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| #include <bits/stdc++.h>  using namespace std;  // 192.168.1.1  // 255.255.255.0  bitset<32> ipToBinary(const string& ipAddress) {      vector<int> octets;      stringstream ss(ipAddress);      string octet;      while (getline(ss, octet, '.')) {          octets.push\_back(stoi(octet));      }      bitset<32> binaryIp;      int index = 0;      for (int octet : octets) {          for (int i = 7; i >= 0; --i) {              binaryIp[index++] = (octet >> i) & 1;          }      }      return binaryIp;  }  // Function to calculate net ID, host ID, and network address  void calculateNetAndHost(const string& ipAddress, const string& subnetMask) {      // Convert IP address and subnet mask to binary      bitset<32> ipBits = ipToBinary(ipAddress);      bitset<32> maskBits = ipToBinary(subnetMask);      // Calculate the network address by performing a bitwise AND operation      bitset<32> networkBits = ipBits & maskBits;      // Output the results      cout << "IP Address: " << ipAddress << endl;      cout << "Subnet Mask: " << subnetMask << endl; | cout << "Net ID: ";      for (int i = 0; i < 32; i += 8) {          int octet = 0;          for (int j = i; j < i + 8; ++j) {              octet = (octet << 1) | networkBits[j];          }          cout << octet;          if (i < 24) {              cout << ".";          }      }      cout << endl;      cout << "Host ID: ";      for (int i = 0; i < 32; i += 8) {          int octet = 0;          for (int j = i; j < i + 8; ++j) {              octet = (octet << 1) | (ipBits[j] & ~maskBits[j]);          }          cout << octet;          if (i < 24) {              cout << ".";          }      }      cout << endl;  }  int main() {      string ipAddress, subnetMask;      cout << "Enter IP Address (dotted-decimal format, e.g., 192.168.1.1): ";      cin >> ipAddress;      cout << "Enter Subnet Mask (dotted-decimal format, e.g., 255.255.255.0): ";      cin >> subnetMask;      calculateNetAndHost(ipAddress, subnetMask);      return 0;  } |

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| Enter IP Address (dotted-decimal format, e.g., 192.168.1.1): 100.2.35.5  Enter Subnet Mask (dotted-decimal format, e.g., 255.255.255.0): 255.0.0.0  IP Address: 100.2.35.5  Subnet Mask: 255.0.0.0  Network Address: 100.0.0.0  Net ID: 100.0.0.0  Host ID: 0.2.35.5   Enter IP Address (dotted-decimal format, e.g., 192.168.1.1): 192.168.1.1  Enter Subnet Mask (dotted-decimal format, e.g., 255.255.255.0): 255.255.255.0  IP Address: 192.168.1.1  Subnet Mask: 255.255.255.0  Network Address: 192.168.1.0  Net ID: 192.168.1.0  Host ID: 0.0.0.1 |

**Output:**