| | Remark |
|---|---|
| **Subject : Competitive Programming Lab**<br><br>**Name: Mohammed Meraj Mohammed Ashfaque**          **Roll No. :** 32<br><br>**Class :** TY. Comp. Engg.          **Batch : T2**          **Division: T** | |
| **Expt. No. :**10                     **Date :  24/03/2025**<br><br>**Title : Multiplication Problem** | Signature |

**Language: C++**

```cpp
// Multiplication  Problem by Meraj 32 T2
#include <iostream>
using namespace std;

int main() {
  unsigned long long n;

  cout << "Input:" << endl;
  // Read each target n until end-of-file
  while (cin >> n) {
    // p is the running product, stanTurn indicates whose move it is
    unsigned long long p = 1;
    bool stanTurn = true;  // Stan always starts

    // Play the game: Stan multiplies by 9, Ollie by 2, alternating
    while (p < n) {
      if (stanTurn) {
        p *= 9;        // Stan chooses the maximum multiplier (2..9) to play optimally
      } else {
        p *= 2;        // Ollie chooses the minimum multiplier to slow Stan down
      }
      stanTurn = !stanTurn;  // switch turns
    }
```

```cpp
    // After the loop, the player who just moved reached p >= n
    cout << "Output:" << endl;
    if (!stanTurn) {
        // We flipped turn after the winning move, so stanTurn==false means Stan just
played
        cout << "Stan wins." << endl;
    } else {
        cout << "Ollie wins." << endl;
    }

    // Separate results if there are multiple inputs
    cout << endl;
    }

    return 0;
}
```

**Output :**