1 Session 1

1.1 Data Types in C++

Type	Size (bytes)	Range (Approx)
bool	1	`true` / `false`
char	1	`-128` to `127`
unsigned char	1	`0` to `255`
short	2	`-32,768` to `32,767`
unsigned short	2	`0` to `65,535`
int	4	`-2,147,483,648` to `2,147,483,647`
unsigned int	4	`0` to `4,294,967,295`
long	8	`-9.22e18` to `9.22e18`
unsigned long	8	`0` to `1.84e19`
long long	8	`-9.22e18` to `9.22e18`
unsigned long long	8	`0` to `1.84e19`
float	4	~±3.4e38 (7 digits precision)
double	8	~±1.7e308 (15 digits precision)
long double	16	~±1.2e4932 (18–19 digits precision)

1.2 Other notes

- Review the first 20 minutes of the session again
- ^ is used for bitwise XOR, not exponentiation.
- Use `std::pow(base, exponent)` for exponentiation, but you need to include the `<cmath>` library.
- single quotes (`' '`) are used for `char` literals, while double quotes (`" "`) are used for `string` literals.
- What is namespace std?
  - The `std` namespace is a collection of classes and functions in the C++ Standard Library. It includes features like input/output streams, string manipulation, and mathematical functions. Using `std::` before these features indicates that they belong to this namespace.
- review 3 or 4 slides before slide number 115
- `#include <bits/stdc++.h>` is a non-standard header file that includes most of the standard C++ libraries. It's commonly used in competitive programming for convenience, but it's not recommended for production code due to portability and compilation time issues.
- Error types:
  - Syntax Errors: Typing Errors
  - Semantic Errors: Logic or Meaning Errors
  - Run-time Errors: Exceptions
- Bricks Problem
- Review how to use vjudge part of the session or watch a video on youtube on how to use vjudge