Programming Languages (CS 329) | **Lab 3**
Computer Science and Engineering | **Out: 2000-10-27**
Indian Institute of Technology Bombay | **Due: 2000-11-15**

1. Test out various `typedef` declarations in C/C++. Are arrays genuine types? Are `struct`s order-sensitive? Are `struct`s passed by value or reference? Can they be returned from functions?

2. Implement the MGU algorithm in Scheme. You can assume the syntax has been suitably massaged to a list form from the Prolog function-call style. For example, your rule base may look like:

```
(member X (cons X L))
(:- (member X (cons Y L)) (member X L))
```

3. Write a Prolog-style inference engine on top of the MGU subroutine. You need not implement the *cut* operator.

4. Test out list-membership, list length, list append, and factorial on your Prolog engine.