PROGRAMS, PRODUCTS & SYSTEMS

Introduction

Program

- A program
- Complete in itself
- Ready to run, by the author, for the planned inputs
- On the system on which it was developed
- Used for estimating productivity - individual

Program becomes a Programming Product!!

Program that can be run, tested & repaired

- ✓Extended by anybody
- ✓Usable in many operating environments – using different data sets
- ✓Thoroughly tested
- ✓Thorough documentation
- ✓**Becomes a generally usable programming product**

Program becomes Programming System

- ✓Collection of interacting programs
- ✓program must also be designed so that it uses only a prescribed budget of resources i.e.
  - ✓memory space
  - ✓input-output devices
- ✓must be tested with other system components – in all possible scenarios

Program becomes Programming System Product

- ✓intended product of most system programming efforts
- ✓Truly useful product

Joys of the Craft

- ***Why is programming fun?***
  - Sheer joy of making things
    - As the child delights in his mud pie, so the adult enjoys building things
  - Pleasure in making things useful for others
  - Fascination of working with complex puzzle-like objects of interlocking moving parts
  - Joy of always learning
  - Build castles in air – imagination leads to innovative ideas

Woes of the Craft

- ✓Not all is delight
- ✓Expects one to perform perfectly;
  - ✓Human beings are not accustomed to being perfect
- ✓Sometimes one's authority doesn't match with responsibility
- ✓Depend on others' programs – which could be poorly designed, incomplete etc.
- ✓Creative activities come with long hours of hard work
- ✓As soon as one freezes design, it becomes obsolete in terms of its concepts
- ✓As product matures, bugs are hard to find

References

- Frederick P. Brooks, Jr. – The Mythical Man Month, 2nd Edition – Chapter 1 & 16