

Informatics 111 / CSE 121: Software Tools and Methods
Summer Quarter 2009

Homework 1

Due Thursday, June 25, at 11:00pm

Part 1. Software Tools and Technology (20 points)

1.1) What is the difference between software tool, workbench, and environment? Give an example of each? (5 points)

1.2) Imagine that you are employed to maintain and extend a self-check out system of a grocery store implemented in Java.

a) Give two (2) examples of types of software tools, method, or technology that could improve your productivity. What activities are supported by the tool, method, or technology support? Explain why the support is important. (6 points)

b) Consider that the maintenance and extension of the self-check out system has to be done by a team of programmers. Give one example of tools that can support team activities and explain why it is important. (5 points)

c) Give 2 examples of important factors that hinder tool adoption. (4 points)

Part 2. No Silver Bullet (40 points)

2.1 What is the difference between essential difficulties and accidental difficulties? (10 points)

2.2 What are the four irreducible sources of essential difficulties? For each one,

i) give a brief explanation, and

ii) discuss whether you believe it is addressed by current software technology; if it is, give an example; if it is not, discuss why not. (15 points)

2.3 Brooks identified four promising attacks on the conceptual essence of software development. What are these four? Give a brief explanation of each. Why none of these promising attacks are tools? (15 points)

Handing In Your Homework

Please put your name, student number, and date at the top of the first page of the assignment.

Your assignment must be submitted electronically to checkmate.ics.uci.edu. (CSE 121 students, please send in your assignment through Informatics 111.) You will submit one file in either Word or PDF format, i.e. in a file with a `.doc` or `.pdf` extension.