Homework 3

- 1. What should the architecture of a network application under Unix be that processes potentially hostile data?
- 2. How can you exploit the fact that every night root has a cron job that deletes the files in /tmp? (Hint: cron-attack)
- 3. How does a buffer-overflow attack work? (Hint: What happens on the stack.)
- 4. Why is it crucial for a buffer overflow attack that the stack grows from higher addresses to lower ones?
- 5. If the attacker uses a buffer overflow attack in order to inject code, why can this code not contain any zero bytes?
- 6. How does a stack canary help with preventing a buffer-overflow attack?
- 7. Why does randomising the address where programs are run help defending against buffer overflow attacks?
- 8. Assume format string attacks allow you to read out the stack. What can you do with this information? (Hint: Consider what is stored in the stack.)
- 9. Assume you can crash a program remotely. Why is this a problem?
- 10. How can the choice of a programming language help with buffer overflow attacks? (Hint: Why are C-programs prone to such attacks, but not Java programs.)