UNIVERSITY OF Hull

Rather Useful Seminars

‘What to do if you are stuck’

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Overview

- Getting Stuck
  - "Rabbit in Headlights" feeling when you get a new piece of coursework
  - "Doomed" feeling when you can't get a program to work
- Don't forget
  - Everyone gets stuck from time to time
  - You just have to learn how to deal with it…

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COPING WITH COURSEWORK

What to do when when you are stuck

Why do we make you do these horrible things in coursework?

- Turns out the department is not evil ☺
- We have just found that coursework is a great way to make you properly learn the things we have told you about
- Computing is not just about knowing stuff
- It is about doing stuff
  - And we need to be happy you can do the stuff before we send you out into the big wide world

You need to "own" your problems

- Start by writing them down
- Then plan to do something about them
- Sitting around waiting for inspiration to strike will just mean that you do a lot of sitting around
  - And nothing will happen
  - And your problems will own you

Don't be afraid to ask for help

- Asking for help is not a sign of weakness
- It can short-circuit a lot of effort
- Staff are much happier to help students than set and mark resits
- In a proper job you would be expected to ask questions if you don't understand something

Ask the right question

- Wrong question:
  - "I've no idea what to do. What do I do? Help me. Help me." (then wave hands in despair)
- Right question:
  - "Should I start by designing the data structures or writing the behaviours?"

Manageable chunks are more manageable

- Don't try and solve everything in one lump
  - This is not how things are made
- Break the program down into smaller chunks and attack each one in turn
  - Get help on each chunk if you need it
  - Plan so you can work on a chunk, rest for a while and then move on to the next one

Googling can send you backwards

- It is very tempting to search for answers on the internets
  - There is a lot of good stuff out there
- But not all of it exactly matches the context of the work you have been set
  - This is particularly true if you start cutting and pasting program code

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MENDING BROKEN CODE

What to do when when you are stuck

When your code breaks…

- There are two kinds of broken code
  - Code that won't compile
  - Code that doesn't do what it is supposed to do
- Which ever version you have, it is important to have a "way back"
  - There is nothing worse than taking a your only copy of a working program and making it into a broken one

Making a way back

- You can make a “way back” by using Source Code Control
  - Check out a copy of a working version and if you break it just never check it back in again
- Or you can just make copies of your work before you start another session
  - I did this for years, before source code control was invented…….

Compilation Errors

- Compilation errors are a bit like water leaks
  - Sometimes the source of the problem is not where you think it is
- Just because the compiler found the error at line 250 doesn't mean that is where the mistake is

Code that does wrong stuff

- Before you can debug code that does the wrong thing you need to really know what the code is trying to do
  - You need to understand the problem
  - You need to understand how your program is trying to solve the problem
- You need to "go and live there"

Fiddling with code to make it work

- You would not try to build a house by throwing a number of bricks at the ground
- So don't try and fix a program just by adding stuff and moving it around
- This never works

Tricks

- Explain the problem to somebody else
- Work through the statements like the computer does (or step through using the debugger)
- Walk away from the problem and then come back to it

If you are still stuck..

- Add code that gives you more information about the misbehaviour
- Test every assumption you are making about the inputs, the outputs, and what the program should do
- Write separate “tiny tests” to prove that particular elements are working

Give yourself time to fail

- If you start late you are under pressure from the beginning
- Start on coursework in good time, so that you can factor in time taken to fix the problems that you will hit on the way

..and finally

Don't Panic

- A bit of worry is a good motivator
- Too much can send you backwards