Introduction to Programming 2000

Week 1 tutor’s kit

A kit like this will be produced for each week of the semester. It will include reading materials, learning activities, the time they should run as well as the themes for this period and comments on things that seem likely to happen.

1. Preparations

Checklist for preparation for this week’s first class:

- get a copy of the COMP1001/1901 Resource Book (Kay) - from Josie Spongberg in the department office or from your section leader;
- get the Blue resources book (Kolling);
- and the Kingston textbook;
- collect from the office (from Josephine Spongberg - josie):
  - the passwords for students in your group,
  - registration forms,
  - Dept Handbooks.
  - whiteboard pens to take to workshops.
- Prereading you need to do for week 1
  - Read carefully Section 3 in COMP1001/1901 Resource Book (Kay). This describes Problem 1 and its marking scheme. You need to be on top of this. Read it early enough so you can discuss difficulties with your Section leader.
  - Skim Chapters 1 and 2 of COMP1001/1901 Resource Book (Kay). These give the overall organisation of things. Students will be counting on you to know these things. You will also be able to refer them to these notes when that is appropriate.
  - Note page 12 of COMP1001/1901 Resource Book (Kay) shows the themes for this week.
  - Read this tutor’s kit (most weeks will be a lot shorter than this first one).

1.1 Things to be aware of this week

This week is likely to be characterised by students joining the class (having not formerly enrolled). In addition, there will be people on class lists who do not appear. In previous years about 5-10% of the class drops out of CS in the first few weeks. Follow up interviews indicate a range of reasons, most with little to do with our running of the course, but rather things like parents having pushed them to enrol in CS when they really wanted to do French or whatever. A corresponding number moves into CS for similar reasons. As a tutor, be aware that making tough decisions is stressful for these students and affects their behaviour in class. Be supportive and encouraging to all students.

Since freshers do not have clear expectations for university as a whole or this course in particular, they tend to be rather anxious and this makes them less effective learners, less well organised and more fragile. On the other hand, it also makes them open to new ways of seeing things.

So it is very important that these first classes set a very positive tone and make the most fundamental
messages very clear. You need make it clear that you and the department are supportive and encouraging and very keen to see every student succeed. At the same time, we demand that they learn lots and work towards becoming independent learners, with tutors as facilitators.

Books for this course are available and required as follows:

- COMP1001/1901 Resource Book (Kay) is needed for the tutorial and for the lab this week. For week 1 of semester, it will be available from the Help Desk 12-2 each day. (Also, during actual classes, small numbers can be sold through the office.) After week 1, it will be available only at the Co-op. The reason for this odd arrangement is to ensure that students can have these books for their classes this week, without needing to queue for long periods at the Co-op.

- Blue Reference Resources (Kolling) is needed for the lab class this week and can be bought through the Co-op.

- Textbook (Kingston) available from the Co-op.

### 1.2 Tutorial activities

The very first tutorial activity helps students meet each other. If you have the lab class first you need to do Activities 1 and 2 in that.

Here is the script for the 2 hour class - you will need to be very careful to keep to time - it would be very easy to let any of these activities drift on for a long time - each is supposed to be quite short.

<table>
<thead>
<tr>
<th>Activity 1</th>
<th>time for it total time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introducing yourself and session:</strong></td>
<td>minutes minutes</td>
</tr>
<tr>
<td>Introduce yourself: your name, contact details, current CS activities, why you are teaching this course and try to share some of the their excitement for this course. Give overview of the 5 activities in this session and explain the motivation for each. This is important: it enables students to start thinking about what they will be aiming to achieve in this class. Put important information like your name, login id and the five activity headings on the board.</td>
<td>5 5</td>
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</tbody>
</table>

(Postcondition: they know your name, login, activities)

<table>
<thead>
<tr>
<th>Activity 2</th>
<th>time for it total time</th>
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</thead>
<tbody>
<tr>
<td><strong>Introductions activity</strong></td>
<td>minutes minutes</td>
</tr>
<tr>
<td>2.1 Introduce activity and explain purpose: To help people get to know each other. This is important as fellow students are important for their learning. This is not a correspondence course. Suggest that they tell things like: their name, background, goals relating to computing, degree....</td>
<td>5 10</td>
</tr>
</tbody>
</table>

2.2 Ask students to form groups | 10 20 |

Let students know these groups are for this activity only. The ideal group size is 5. So a typical class of 20-25 students should be in 4 groups or at most 5 groups.
Suppose we name the people in the group A, B, C, D.
Each introduces themself.

They tell a bit about themself and then swap.
eg (A to B and B to A)
at same time as
(C to D and D to C)

Then pairs introduce others (in the above example, A would introduce B to C and D, and so on)

In all these sorts of activities where the students are working in groups, make your way around the class, perhaps joining one group for this activity and another groups for the next ... (as we did in the staff development sessions). Make sure you take a class roll so you know who is in your class - you can do this while you are with each group.

(Postcondition: each student know the names of at least three other people and a little about each)

<table>
<thead>
<tr>
<th>Activity 3 - Contracting</th>
<th>time for it minutes</th>
<th>total time minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Contracting and defining expectations</td>
<td>10</td>
<td>30</td>
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</tbody>
</table>

Continuing in the same groups, students formulate 2 lists: duties of students and of tutors.

| 3.2 Summary of discussion | 10 | 40 |

As in activity 3, tutor summarises discussion on the board.
In this summary the tutor MUST comment since the process should produce a contract.
(Post: They should come up with them being responsible for preparing for classes, for keeping up to date in work, reading set materials, working steadily, meeting deadlines, letting the tutor know if they have problems....

You have responsibility to help them learn, be competent and helpful, be positive and encouraging....

All should be punctual to class, polite...

Someone (preferably a student volunteer) should write a summary statement of duties.

<table>
<thead>
<tr>
<th>Activity 4</th>
<th>time for it minutes</th>
<th>total time minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pause gymnastics</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

These are at the back of the COMP1001/1901 Resource Book (Kay).
Please take these seriously.
They are important for student's well-being.
They also give their minds a break.
Activity 5

<table>
<thead>
<tr>
<th>Brainstorming</th>
<th>time for it minutes</th>
<th>total time minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Introduce brainstorming</td>
<td>10</td>
<td>60</td>
</tr>
</tbody>
</table>

See page 37 of COMP1001/1901 Resource Book (Kay)
If there is 1 book between 2 students, proceed with 5.2.
Else send some to the department office to buy it.

Allow time for students to read this silently.

5.2 Brainstorming activity - for planning coming week
The groups brainstorm for ideas.
You spend a little time with each group.
Look at the ideas they have written.
If need be, try to prompt some of the things listed below.
Also, suggest they look at the contents of the COMP1001/1901 Resource Book.
Skimming it should help them see the week 4 deadline for Problem 1.

5.3 Consolidated list of major goals for this week for each student?
30 110

Bring the class together (as we did in the staff development sessions).
Ask each group in turn to volunteer their suggestions.
Write these on the board.

Some things that had better come up include:
• Start work on Problem 1 by finding out what it is
• write a tiny program (they know this is a programming course - it’s called
  ‘Introduction to Programming’)
• Get Blue text (Kingston),
• Blue reference resources (Kolling)and
• COMP1001/1901 Resource Book (Kay).
• Skim through these finding parts that seem relevant now and to get an
  overview.
• Arrange to meet each other during the week to discuss and work on Problem 1.
• Start a personal plan for the coming week - if need be, tell them about pp
  33-6 and get them to start filling in the planning sheet on page 35.

Note: Each group must show you their plan
This should show what each person will need to bring to the week 2 class,
things they will have done by then.
Ask the group to give you a copy.
Make it clear you will ask to see progress on these next week.
(Mention that for problem 2, planning will count towards the assessment.)

• Make sure they have plans for their 6 hours of private study.
• And for the next 3-hr workshop - so it will make use of the time,
  access to a computer, the opportunity to work with peers, access to a
  tutor

Postcondition: Students have some ideas of what to do to start
Problem 1, where to look to find out more and they can use
brainstorming as group problem solving activity.

Note for new tutors: This class will be quite odd and unsettling for the students and you. Have faith that
they will get the idea, so long as you give them support and encouragement, and if needed, assistance.


2. 3-hr Workshop

If you have this workshop before the tute, do activity 1 of the tute in the lab and then go on to the rest of the lab activities.

### Activity 1

#### Introduce session

Start with an overview of the main activities. This helps student build mental coat-hooks, ready to attach new things they learn.

The workshop is more loosely structured than the tutorial with students usually working in groups on tasks they have defined. However, for this first week, there is some extra structure.

### Activity 2

#### Forming groups for Problem 1

2.1 Explain that they about to form groups.

Explain that groups should be **diverse**. Ask the class to volunteer things that they can think of to take into account when looking for diversity. Here are some possibilities:

- age
- sex
- ethnic background
- knowledge of computing
- knowledge of programming
- competence in written English
- and spoken English
- confidence about things in this course
- faculty
- other subjects being studied this year
- how much computing they want to study
- how keen they are to work hard

2.2 Each student write a personal profile

This is about a page and should be used in the next stage.

2.3 Groups actually form

Ask them to look at each other's profiles and use this to form diverse groups.

Warn them that this will not be as comfortable initially as homogeneous groups but it will make groups more effective for all members.

You may need to be firm as you go around and see that they have played the game. If you get, say, all the programming experts in one groups, you can very nicely tell them that none of the other groups has any (or as many) programming experts and they should move. You might have to be a interventionist here. Groups should ideally have 5 members.
Activity 3

Administrative matters

Do this in parallel with the activities 4, 5 and 7.

- Hand out departmental handbook.
- Draw up a marksheet and record who is present
- Get each student to complete a registration form
- and, after checking it is completed, hand out the password

Note: You should have the power to fix student's passwords
(Use `passwd` and follow the instructions BUT BEWARE of mistyping
the student login - use the following procedure:

Ask for their student card.
Find their name on it.
grep Student's Name /etc/passwd
eg grep Einstein /etc/passwd
Use the mouse to cut their login name and paste it in the command
`passwd login`

(Postcondition: Students have a department handbook and password)

Activity 4

Initial group planning of this workshop activities

<table>
<thead>
<tr>
<th>time for it</th>
<th>total time</th>
</tr>
</thead>
<tbody>
<tr>
<td>minutes</td>
<td>minutes</td>
</tr>
<tr>
<td>30</td>
<td>60</td>
</tr>
</tbody>
</table>

If your class had the tute first, each student should have done
planning of this 3-hr session - you now you put this on the board, with
your own feedback. For example, suppose students plan to find
resources for problem 1 using the internet (not a good idea). You
could either say outright that this is not critical right now or you could
just write it in small print, low on the board. Similarly, highlight the
good ideas by placing them at the top of board (eg have a look at
example programs for problem 1, use Blue to explore these).

else the workshop is first and you need to allow students to plan their
activities for this 3-hr class (and the tute will be used to plan the
week's work)

Explain that each group should write a plan for the 3-hr class.
Tell them you want to see this before they use the terminals.
(A safe thing if you still have their passwords!!)

The groups should decide what they will do in the lab. They should
go to the COMP1001/1901 web page
http://www.ug.cs.usyd.edu.au/~cs1/COMP1001/ (see also url on cover
of Resource Book) and try using the group planning sheet
Ideally, someone in each group will have found the ‘Getting Started’
tutorial in the COMP1001/1901 Resource Book (Kay). If not, prompt
them, to look for something useful for getting started.
If any group has not found the ‘Getting Started’ after 10 minutes,
stay with them, prodding till they get to it.
(Postcondition: Students have decided to ‘Get Started’)

**Activity 5**

**Getting started, logged in and change password**

Students work in their groups through the getting started.
A group of 5 might split into 2 + 3 and use 2 terminals.
Only one person will be logged in at each terminal.
As both will be working together, it is a good idea for them to plan to spend some of their 6-hrs private study, going over the ‘Getting Started’ materials again, to gain confidence and to have a chance to appreciate better what is happening.

Note: If no-one in a group has the book, you may have to help them log in on one terminal and get to the same material at [http://www.ug.cs.usyd.edu.au/~cs1/1001](http://www.ug.cs.usyd.edu.au/~cs1/1001) to get going on a second terminal. (This is under the section ‘Unix’ in the left frame, and is called ‘Getting started with unix’)

(Postcondition: each student in your class has logged in and changed their password.)

Each group has worked through the getting started tutorial.)

If a student has enrolled recently and no account has been created, annotate their form and explain this as you hand it to Josie in the Department Office.
Make sure such students have a plan for 6-hrs private study involving reading and paper work, if there happen to be problems with their account. Also make sure they know to go to the Help Desk to check the status of their account. And encourage them to meet another group member to work at a terminal during the week.

**Activity 6 - Pause gymnastics**

**Pause gymnastics and break**

Point them to last pages in the COMP1001/1901 Resource Book (Kay) and get the group to decide on exercises to try out for a five minute break.
Note that many students have very long days - you probably have to tell them it is ok to have a break - even leave the lab briefly.

**Activity 7 - Problem 1**

**Continued work exploring Problem 1 example code**

During this time, you can go around and review planning sheets
Note you need to see both individual and group plans.
And they should show what the 6-hrs private work will involve.
Encourage them to meet their group between classes.

Try to unobtrusively check that they have worked out how to contact each other.

**Checklist for end of last contact hour of week 1:**

- Make sure you see each student and speak to them at least briefly in each of the tute and the lab -- to help you do this, place marks against your class list as you see each student - doing this means you need to ask students their names and this helps you learn their names more quickly and, importantly, it helps you make sure you give every student a fair amount of attention.

- in your first class of the week, make sure they know they should get the three books for the course

- in your first class of the week, make sure they plan to read the COMP1001/1901 Resource Book (Kay) Sections 1--3.

- make sure you see a plan for each group and each student

- make sure they are aware of the list of learning outcomes for week 1 listed in the Resource Book (Kay).

Finally, remember to mail feedback and comments to your section leader. Both positive and negative comments are important.

Judy Kay  
2000 PBL Co-ordinator for Comp1001/1901  
February 2000

PS. Note that if people want to change tutes they have to go to the timetable people, best place for this is, you guessed it, the Help Desk in lg44.

You can also expect mail from your section leader this week as things are set up for administrative tasks -- like the markssheet program.