

Computer Programming: Skills and Concepts Programming Exam

Instructions

1. **Do not open the *question paper* until the start of the exam is announced.**
2. The exam lasts three hours.
3. Place your student identity card face-up on the desk in front of you. The invigilator may come to check your identity, and in this case you may be asked to allow the invigilator to briefly use your computer. The exam time has been calculated to allow time for such interruptions.
4. You may log into your computer as soon as you are ready to do so.
5. Open a terminal window and issue the command

```
getpapers
```

This will copy the template files for the examination into a directory `cp-pe/templates` in your home directory. You may wish to change into that directory

```
cd cp-pe/templates
```

and work there. If you need fresh copies of the templates, they can be found in `cp-pe/original_templates`

Electronic copies of the exam paper, the C quick reference, and these instructions are in the `cp-pe/papers` directory in your home directory.

If you have any problems with this stage, please call an invigilator.

6. When the start of the exam is announced, you may open the question paper and start work.
7. You may use any tools available under DICE. You are recommended to save your work on a regular basis. Compile, run and debug your programs as usual.

PLEASE TURN OVER

8. In some questions, you are asked to add code to an existing file. The position in the file where you should add your code is clearly marked as follows (this example is for part (a) of a multipart question):

```
/* BEGIN ANSWER (a) -- do not delete this line */  
  
// ADD YOUR CODE HERE  
  
/* END ANSWER (a) -- do not delete this line */
```

Note that some questions may have more than one marked area for a sub-part. The question will explain what is required for each area.

You should not change code outside the marked areas (except for debugging purposes, or where there is a comment explicitly permitting it), and you **must not** delete or change the lines saying 'do not delete this line'. Your code **must not** rely on any change you make outside the marked areas – only the code within the marked areas will be tested.

9. The output from the program should be as required in the question. If you add debugging prints to your program as you write it, turn them off before submitting the program. Alternatively, you can print your debug statements to `stderr` by, for example,
- ```
fprintf(stderr, "x is %d\n", x);
```
- Output to `stderr` will be ignored during marking.
10. Before submitting your answers, make sure that your `.c` files compile correctly. Code which prevents the file from compiling should be made into comments.
11. Submit your answers using the command

```
examsubmit FileName.c
```

where *FileName.c* is the name of the required C source files. You will need to repeat this command for each of the required files. If you get an error, please check carefully that you are using the filenames required in the exam paper and that you are in the same directory as the file. **Remember** that filenames are case-sensitive on Linux.

If you continue to have problems with submission, please contact one of the invigilators.

Repeated submit commands are allowed, and will overwrite previous submissions of the same filename(s). The last file submitted will be the one marked.

System standard documentation is available. You are also provided with a quick reference sheet for the parts of C used in the course, and some useful library functions.

(Note that internet access has been disabled.)

12. When the invigilators announce the end of the exam, you must submit and log out immediately.