

**NATIONAL UNIVERSITY OF SINGAPORE
SCHOOL OF COMPUTING**

Practical Examination 1 (PE1) for AY2017/8 Semester 1
CS1010 Programming Methodology

22 September 2017

Time Allowed: 1 hour 30 minutes

INSTRUCTION TO CANDIDATES

1. Please leave your student card on your desk throughout the PE.
2. You are only allowed to read this cover page and the last page before the start of the PE. Do **not** flip the pages to read the questions inside until you are told to do so.
3. This paper consists of **2** tasks on 6 pages.
4. This is an open-book exam. You may bring in any printed material, but **not** electronic devices, including but not limited to laptop, thumb-drive, electronic dictionary and calculator. You are to switch off/silence your mobile phone and keep it out of view.
5. You may turn to the last page (page 6) to read some advice.
6. You will be logged into a special Windows account at the beginning of the PE. Do not log off until the end of the PE. Do not use your own NUSNET account.
7. A plab account slip will be issued to you at the beginning of the PE.
8. You are to write your program in the given **plab account**. The host name is **pe10** (not sunfire!). No activity should be done outside this plab account.
9. You are not allowed to type your programs in the first ten minutes of the PE.
10. You **do not** need to submit your programs to CodeCrunch. We will retrieve your programs and submit them to CodeCrunch after the PE.
11. Skeleton programs and some test data files are already residing in your plab account. Please leave your programs in the home directory, and use the same program names as specified in the paper. Do **not** create subdirectory to put your programs there, and do **not** name your programs differently from what are given, otherwise we will not be able to find them!
12. **Only your source codes (.c programs)** from your plab account will be collected after the PE. Hence, how you name your executable files is not important.
13. Please read carefully and follow all instructions in the question. If in doubt, please ask. Raise your hand and the invigilator will attend to you.
14. Any form of communication with other students or the use of unauthorised materials is considered cheating and you are liable to disciplinary action.
15. Please save your programs regularly during the PE.
16. When you are told to stop, please do so **immediately**, or you will be penalised.
17. At the end of the PE, please **log out from your plab account**.
18. Please check and take your belongings (especially your student card) before you leave.
19. We will make arrangement for you to retrieve your programs after we have finished grading. Grading may take a week or more.

ALL THE BEST!

CS1010 AY2017/8 Semester 1 Practical Exam 1 (PE1)

Advice – Please read!

- In the first 10 minutes of the PE, you are not allowed to type your programs. Use that time to read the task statements, ask questions and design your algorithms.
- Your program must be compilable! Or you will receive zero mark for correctness.
- You are **not** allowed to use recursion, arrays or string functions from string.h. Heavy penalty will be given (see below) if you use any of them. If in doubt, please ask.
- Any variable used must be declared within some function. You are **not** allowed to use global variables (variables that are declared outside all the functions). Heavy penalty will be given (see below) if you use any global variable.
- If you write a function, you must have a function prototype, and you should put the function definition after the main() function.
- You may write additional function(s) not mentioned in the task statement if you think it is necessary.
- You may assume that all inputs are valid, that is, you do not need to perform input validity check.
- Manage your time well! Do not spend excessive time on any task.
- Be careful in naming your executable code. Do **not** overwrite your source code with your executable code, especially if you are using the -o option in gcc!

Rough Marking Scheme

1. Style: 5 marks
 - Are your name, student number, plab-id, DG and description filled at the top of the program?
 - Is there a description written at the top of every function (apart from the main() function)?
 - Are there proper indentation and naming of variables?
 - Are variables unnecessarily initialized, or not initialized when they are supposed to be?
 - Are there appropriate comments wherever necessary?
2. Design: 5 marks
 - Is the program modular?
 - Are function prototypes present?
 - Are the functions correctly defined and called?
 - Is function cohesion abided by?
 - Is algorithm not unnecessarily complicated?
3. Correctness: 20 marks for Task 1, 60 marks for Task 2. **Zero mark if cannot be compiled.**
4. Deductions (not restricted to the following):
 - Program cannot be compiled – Zero mark for correctness
 - Compiler issues warning with -Wall: Deduct 5 marks.
 - Use of recursion, array, built-in string functions from string.h: Deduct 10 marks
 - Use of global variables: Deduct 10 marks

--- END OF PAPER ---