How to Fail a Programming Assignment

Carol Edmondson
School of Computing
Faculty of Science, Engineering & Technology
University of Tasmania
Hobart Campus, Centenary Building
Private Bag 100 Hobart TAS Australia 7001
Carol.Edmondson@utas.edu.au

Abstract
Computer programming courses at university usually require students to undertake assignments which involve the submission of a working program by a particular date. Each semester, for a variety of reasons, some students fail these programming assignments. This paper uses humour to illuminate some of the unsuccessful approaches to programming assignments taken by some of the computing students whom the author has taught.

Keywords: computing education, humour, programming assignment

1. Introduction

Programming assignments at university usually require students to submit, by a particular date, a working program which meets a provided specification. Each semester, some students fail these programming assignments. After many years of tertiary teaching, I have concluded that some students are failing their programming assignments on purpose. I have decided that these students have a rich eccentric uncle who promised to leave them a fortune if they fail a programming assignment at university.

For the benefit of these fortune-seeking students, this paper evaluates several approaches towards failing a programming assignment. Students who do not have rich eccentric uncles, and who therefore need to pass their programming assignments, might also find this paper useful. If you belong to the latter category, please remember NOT to take any of the approaches outlined below.

2. Some Tried and True Approaches to Failing a Programming Assignment

Each of the following approaches to failing a programming assignment has been taken by at least one of my students over the last quarter of a century, regardless of the programming language being used for the course.

2.1 Do Not Submit the Assignment

This approach is guaranteed to yield a failing mark. As a bonus, it often results in your failing the entire course.

However, some people do not consider this to be a genuine failure. These people believe that you cannot be said to have failed something which you did not do. Please check with your rich eccentric uncle before adopting this approach.

2.2 Submit Your Assignment After the Due Date

For this approach to be truly effective, you should wait and submit your assignment after the assignment solution notes have been posted.

If you submit your assignment just a few days late, most academics will apply some piddling late penalty which is not nearly enough to cause you to fail the assignment. Also, academics have been known to waive these late penalties if a student produces a medical certificate, or a letter from an employer, or some other official documentation explaining that the student had a valid reason for missing the assignment deadline. You may begin to suspect that academics are determined to prevent you from claiming your fortune.

2.3 Submit the Same Assignment as Your Friend

If you are lucky, this approach will result in your receiving a mark of zero for the assignment. If you are unlucky, the course coordinator will insist that your friend and you each receive half of the marks which the tutor gave the assignment submission when s/he marked it. Either way, this approach almost always results in a failing mark.

A possible bonus is that your friend and you might get to meet the Head of Department, or even the Faculty Dean.

2.4 Submit Some Programming Assignment Solution Notes That You Found on the Web

This approach is usually successful in producing a failing mark. However, you should check that the programming assignment specification has been changed since last year. To be really sure of failing, check that these solution notes are for a different programming assignment, preferably for a different course at a different university.

2.5 Post the Assignment Specification to Various Newsgroups (Having Carefully Removed All Indications That It Is a University Programming Assignment) and Ask People in Cyberspace to Write the Program for You

If you are lucky, the program from cyberspace will be written by someone who is not very good at programming, or by someone who does not follow the assignment specification. Either way, you will probably receive a failing mark for the assignment.

If you are very lucky, the program from cyberspace will be written by someone with a sense of humour who includes an interesting virus which wreaks havoc in your university's computing environment. Your course coordinator will probably decide that you have broken some rule or another and will fail you on the assignment. A possible bonus is that you might get to meet your university's computing security staff.

2.6 Collect Various Fragments of Code from Various Sources, Place These Fragments in a File, and Submit This File

This approach is not entirely fool-proof. On occasions, these fragments of code will transmogrify themselves into a working program simply because they are in the same file.

2.7 Submit a Program that Does Not Compile

This approach is not always as successful as it deserves to be. Some academics will actually edit your file and terminate that leading comment you added at the last moment, or add a missing semi-colon to your query, or change your class name so that it matches your file name.

One way to counteract this interference by academics is to compile the program yourself just before you submit it and to make sure that there are a lot of compile-time errors, none of which can be fixed easily.

2.8 Submit a Program That Produces Run-Time Errors

For this approach to be truly successful, you need to be very obvious about it. Not initialising some variables may cause your program to hang. By creating an out-by-one error when processing an array may cause your program to fall over. However, these types of error are not really obvious enough because they may not occur every time that your program is run.

Infinite loops are usually easy to generate and are therefore popular with fortune-seeking students. To make sure that your program produces sufficient run-time errors for you to receive a failing mark, you first need to create a program which compiles. Then you need to run your compiled program several times using different sets of test data and checking that at least one run-time error occurs every time that you test the program.

2.9 If You Are Given Some Test Data and Some Expected Output for That Test Data. Write a Program Consisting of Print Statements to Produce the Expected Output

It is difficult to see how you could possibly fail a programming assignment using this approach. You are sure to get enough marks to pass when your program is run against the test data which you were given. After all, the tutor will look at the output, not at your code.

However, you can be reasonably confident that your program will also be run against some other test data that the course coordinator has kept hidden from you. Tutors, for reasons best known only to them, expect programs to produce different output when processing different input data. Therefore, your tutor will probably give you a failing mark for your assignment when your program produces exactly the same output every single time that it is tested.

2.10 Submit a Program That Does Not Meet the Assignment Specification

This approach requires a great deal of hard work. If you take the easy option of simply ignoring the assignment specification, serendipity will cause you to write and submit a passing program. In order to ensure that you fail, you need to write a program which in no way meets the assignment specification. This means that you have to go to the effort of reading and understanding the assignment specification. You have to ask your course coordinator for clarification of anything that you do not understand on the specification. You have to test your program thoroughly to make sure that it fails all possible tests.

As well as hard work, there is another danger lurking in this approach. Once you start programming, you might find that you like it, even that you are good at it. You may begin to wonder how rich your eccentric uncle really is.

3. Conclusion

Academics are people who managed to pass their programming assignments when they were students. (Obviously, they did not have rich eccentric uncles.) Because of this, academics mistakenly believe that all students want to pass their programming assignments and they keep thinking of ways of helping students to do this. They provide websites and discussion groups. They have student consultation times. They provide sample test data.