BCS, The Chartered Institute for IT
Guidance Notes for Candidates -   Professional Project in IT
February 2024 v1.1

BCS Professional Examinations

Guidance Notes for Candidates - Professional Project in IT

These guidance notes are intended to help candidates who are preparing to undertake the BCS Professional Project, and should be read in conjunction with other guidance, regulations and the syllabus for the BCS Higher Education Qualifications.

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Introduction

The purpose of the Professional Project is to demonstrate an appropriate level of professional competence for a computer-based solution to a problem. To demonstrate this fully, the project must be "real" in the sense that the end product can be used to do a real job for other users. <u>Please note</u>: A development for use by you alone, a collection of course exercises, a literature search, or a descriptive evaluation is not acceptable. If possible, the project should come from your employment workload; although projects undertaken as part of a preparatory course are acceptable.

All Professional Projects will be expected to include evidence, which demonstrates that the work undertaken is of professional quality and value to the customer. If the project contains confidential material, you are invited to contact the HEQ Office for advice. Before submitting your Professional Project, it is mandatory that you submit a project proposal so that the examiners can give feedback on the suitability of the work proposed and give formal approval.

The Professional Project may be undertaken at Diploma in IT level or at Professional Graduate Diploma in IT level, according to the qualification you are aiming for. If you pass the Professional Project at Diploma in IT level you cannot resubmit the same or modified project, at Professional Graduate Diploma in IT level.

<u>Please note</u>: If you submit a project at Professional Graduate Diploma in IT level you may be offered a pass at Diploma in IT level. If you accept the pass at Diploma in IT level it will not then be possible to resubmit the same or modified project, at Professional Graduate Diploma in IT level.

Project Proposal

The purpose of the proposal for the Professional Project, at Diploma and at Professional Graduate Diploma levels, is to set up a framework to enable the project work to be managed, achieved and documented efficiently and successfully. The proposal should be constructed so that the prospective project work may be assessed in advance for fitness, so that advice may be given to enable that fitness to be achieved and maintained.

While the proposal is being constructed, pay close attention to the guidelines for the Professional Project so that you understand the requirements for the final submission. You will need to provide enough information to show how those requirements are to be met. If in any doubt, consult your authenticator for assistance in this aspect.

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The proposal should be approximately 500 words in length, giving a brief summary of the intended Professional Project. Please refer to Section 5 below, Structure of Project. The proposal submission must be compatible with either Microsoft Word, or Adobe PDF Reader.

You must also provide details of your intended Project Authenticator, either with their BCS Membership Number or with their CV as appropriate.

Structure of the project proposal

Your project proposal should convey to the examiners the nature of both the product itself and the process by which it will be produced. The proposal should include:

- Identification - a working title, the level of the submission (Diploma or Professional Graduate Diploma), together with your name and membership number. Similar details should be given for the project's authenticator and for the project supervisor and/or a client, where relevant.

- Background - a **short** overview, with aims of the project, and any external involvement, such as an employer. A **brief** appreciation of why you chose this project work and where the deliverables might be used in the future.

- Objectives – what you expect to attain, which can be measured. Project deliverables/ outputs should be included here.

- Scope and approach – the boundaries of the work, items that are expected to be covered. The approaches to project management, analysis and design, implementation and testing may be described here.

- Fitness for purpose - You must include how the work will be shown to be fit for its intended purpose and satisfy its requirements.

- Groupwork (applies ONLY to Diploma level work) - whether the work is to be an individual submission or the work is to be undertaken as part of a group. If part of a group, the candidate's individual contribution must be explained and tracked.

- Milestones – a brief overview of the expected timescale.

The above list does not imply that a particular method or approach has to be adopted. Any professional approach is acceptable but the proposal should address the above issues. Other aspects, such as likely resources and expected risks, might also form part of the proposal. Remember that the proposal should not exceed 500 words in length: this guideline should be sufficient to enable enough detail to be given without including superfluous material.

Size of Project
Professional Project (Diploma in IT Level)

You will submit a report on the practical implementation of a computer-based project (as defined below).

- The Professional Project should involve the **development of a computer-based solution to a practical problem.** This will normally, but not necessarily, involve the candidate in the production of software.
- Candidates are expected to spend approximately **200** hours on their project.
- The basis for comparison for a Diploma project is a piece of work produced by someone with two-years full-time experience or education in the area of the project. In educational terms, this would correspond to a project completed near the end of an HND or the end of Year 2 of an honours degree course in computing.
- The size of the report should be approximately **5,000 words** excluding appendices and any screenshots, diagrams, tables, etc.
- The Diploma Professional Project may be part of a group project but each candidate must individually satisfy all the requirements, and your report must clearly identify your individual contribution.

Professional Project (Professional Graduate Diploma in IT Level)

You will submit a report on the practical implementation of a computer-based project (as defined below).

- The Professional Project should involve the **development of a computer-based solution to a practical problem.** The report must put the problem in context, include a survey of relevant literature, and provide a list of references.
- Candidates are expected to spend approximately **300** hours on their project.
- The basis for comparison is a piece of work produced by someone with three years' full-time experience or full time education in the area of the project. In educational terms, this would correspond to a project completed near the end of the final year of an honours degree course in computing at Level 6 .
- The size of the report should be approximately **10,000 words** excluding appendices and any screenshots, diagrams, tables, etc.
- The PGD Professional Project should be an **individual piece of work** undertaken by the candidate alone. Group projects are not allowed.

Authentication and Submission

The Professional Project must be authenticated using the forms provided, either by a BCS Professional Member (i.e. MBCS/FBCS) or an IT Professional (e.g. Manager, Supervisor or Tutor) **with a minimum of 5 years managerial/supervisory experience**. Non BCS members must submit a detailed CV to the BCS indicating the candidate(s) for whom they are acting as authenticator. You should choose a person who can perform this authentication role and also provide you with advice about the level and scope of appropriate project work.

Only a computer-readable copy of the project must be submitted, according to BCS regulations. The submission must compatible with either Microsoft Word, or Adobe PDF Reader. BCS reserves the right to scan the project work through anti-plagiarism software.

Structure of Project

Your Professional Project report should convey to the examiners the nature of both the product itself and the process by which the product was produced. The report must contain:

- **Abstract** – a brief summary of the Professional Project, describing its nature and scope.
- **Requirements Analysis and Specification** – how the specification was created, communication with the users/owners, relevant constraints, rationale for choices made, the specification itself, and the initial work schedule.
- **Design** – how the product was designed, including design method, design process and outcome. This should include the rationale for design decisions and trade-offs made, such as selection of algorithms, data structures and implementation environments as appropriate.
- **Implementation** – how the product was constructed, including choice of any packages, tools, development environments and language. The recognition of the importance of relevant documentation.
- **Testing** – evidence of how the product was debugged, tested or evaluated, as appropriate, to demonstrate that the specification has been satisfied.
- **Critical appraisal** – a review of the Professional Project looking back at both the product and the process. This should include an analysis of the major design, implementation and testing decisions, lessons learnt by the candidate during the course of the Professional Project, and an analysis of the strengths and weaknesses of the product and the process.
- **Appendices** – containing any detailed diagrams, tables, examples of test results, as appropriate.

The above list does not imply that a particular method or approach has to be adopted. Any professional approach is acceptable, but the report must address the above issues.

Role of Candidate

It is not expected that all Professional Projects will involve candidates equally in the stages of specification, design, implementation and testing. It is recognised that you might not have been able to implement the end product personally. Nevertheless, you must have played a significant role in the implementation and testing. You are expected to have personal involvement in the demonstration of the product's "fitness for purpose".

It is a requirement for all Professional Projects that they contain aspects of implementation. If your project is centred on hardware development, systems analysis or programming, this requirement can be satisfied by a description of the implementation and testing phases accompanied by the relevant evidence. If your project is centred on "management" matters such as feasibility studies, procurement exercises or computer auditing, the requirement can be satisfied by the prior creation of a set of criteria for acceptance and a set of procedures and tests to determine whether the criteria have been satisfied. As long as you participate in the creation of the criteria and the subsequent acceptance testing, such Professional Projects are in general acceptable.

Avoiding Plagiarism

Plagiarism consists of passing off the work or ideas of others as your own. It is a clear breach of BCS's Code of Conduct. In the context of BCS Higher Education Qualifications, specifically the Professional Project, plagiarism would include, for example: un-attributed quotation or diagram from a public source, including the internet; copying material from other people, e.g. colleagues, without acknowledgement; copying or reuse of designs, programs, or other source material without acknowledgement; submission of work jointly produced with someone else as if it were entirely your own work.

No intellectual endeavour is ever absolutely original. Even the most original minds depend on the thoughts and discoveries of their predecessors. Also, in information systems engineering, teamwork is an essential element of most developments. We have no objection to you using other people's work as part of your project but you must make clear in your project report what is your own work and what is the work of other people.

The following simple guidelines are intended to help you avoid straying from legitimate and desirable cooperation into the area of plagiarism:

- The project must be your own work, AI can be referenced but cannot be used to generate content, any references found via generative AI applications, such as chat GPT must be referenced.

- If your project uses work that has been done by your colleagues, include a section in your report called "Acknowledgments". This explains what is your own work and what is the

work of others. Include a bibliography in your work listing all the sources you have used, including electronic sources and documents such as company standards manuals.

•   Surround all direct quotations with quotation marks and cite the precise source (including page numbers or the URL and the date you accessed it if the source is on the Web) either in a footnote or in parentheses directly after the quotation.

•   Use quotations sparingly and make sure that the bulk of the work is in your own words.

•   If you are reusing code or design information from another source, never remove any annotation that identifies the original author, even when you are modifying the code.

•   Remember that it is your own input that gives a piece of work merit. Whatever sources you have used, the structure and presentation of the argument should be your own. If you are using electronic sources, please do not cut and paste sections into your work. It is advisable that if you are referencing books or papers, put them aside when you write your final submission.

•   BCS works hard to detect cases of plagiarism in project submissions and reserves the right to scan the project work through anti-plagiarism software. We take a very serious view of any cases of plagiarism that we find. The penalties for committing this offence are outlined in the Regulations, under Breach of Regulations.

Chief Project Moderator

December 2017