University of Edinburgh
Job Description

1. Job Details
Job title: Senior Software Engineer
School/Support Department: School of Education, Curriculum Research & Development
Unit (if applicable): Scottish Interactive Technology Centre
Line manager: Director of SITC

2. Job Purpose
Working as part of a small team the job holder will contribute their ability to create elegant, user-friendly and accessible software to standards. Development responsibilities include program design, development, troubleshooting, database administration, and resource monitoring as necessary. As ancillary duties the job holder is responsible for the maintenance and security of SITC web, database and file servers and identifying emerging trends and technologies that might benefit SITC in future projects.

3. Main Responsibilities

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1. Produce code to standards ensuring it is high quality, maintainable and fully tested and that the resulting applications are accessible to those with disabilities.

2. Attend meeting with clients to ascertain the client needs within the project specification, then carry out requirements analysis and system design with full responsibility or as part of the team for estimating feasibility, costs, time, and compatibility with hardware and other programs.

3. Assist in post-implementation continuous improvement efforts to enhance performance and provide increased functionality.

4. Responsible for the administration, operation, and production support of web, file and database servers and applications to ensure system availability.

5. Ensure projects are documented in a manner that will ease future system and code upgrades.

6. Provide technical assistance by responding to inquires from others regarding errors, problems, or questions about applications.

7. Mentor junior members of the development team in order to fast track their professional development so as to enable them to work successfully on tasks delegated to them by the senior members of the team.

8. Research emerging technologies and trends in the technology field that would be beneficial to future projects and the successful day-to-day operation of the office.
4. Planning and Organising
The job holder should be able to organise themselves and others, present work clearly and communicate confidently. They must be able to manage their time and plan work to ensure quality output on time and in budget and have the ability to multi-task and manage several projects at once. Additionally they are required to have a solid understanding and experience in disaster recovery planning and implementation.

5. Problem Solving
The very nature of the job of software engineer means that not only must the job holder possess strong programming skills, but they must also be concerned with developing algorithms and analysing and solving design programming and support problems. Initially there is the first contact with a client and determining with them an optimal design solution to their requirements. In developing the solution the software engineer comes across many programming problems that must be overcome such that the project can progress smoothly within time and budget constraints. In the testing and support phase of a project the job holder must have excellent communication skills and have the ability to troubleshoot problems in person, over the phone, or via e-mail. Throughout the development life cycle the job holder must work to current standards whilst aiming to be forward compatible with next generation of standards that are likely to be required in the near future. Additionally the job holder should be able to monitor server operations and analyse and respond to performance and other maintenance issues.

6. Decision Making
The job holder must be able to use their initiative to ensure the effective planning and implementation of systems for high profile clients. They should have the ability to identify appropriate platforms -- both hardware and software -- to recommend to clients and the Director of SITC in order that the project requirements of the client are met both on time and in budget. Additionally the job holder should display the ability to prioritise project actions in order to meet deadlines. Ultimate responsibility for the development strategy and final design requirements rests with the Director of SITC.

7. Key Contacts/Relationships
Liaise with clients, be they Scottish Executive officers, local authority co-ordinators or NGO officers to implement the requirement, designs and testing of software solutions. Report to the director of SITC to inform him of the current progress of projects under development and, when required, recommend hardware and software solutions for current and future projects. Interact closely with other members of the SITC development and production team on a daily basis.

8. Knowledge, Skills and Experience Needed for the Job
Must have professional experience developing complex, database-driven applications. This is a challenging position and is not suitable for novice or entry-level programmers. Needs strong project management and communication skills, excellent knowledge of web development, usability and accessibility issues and the ability to take the initiative and communicate clearly with a wide range of colleagues and clients. Must have experience with standards based web page design using PHP (Ruby on Rails also beneficial) XHTML, CSS and JavaScript (AJAX experience is desirable).
Must be able to find the optimum way to implement requirements using object-oriented
design and where possible reusable code.
Must have a solid understanding of database administration and experience with SQL
(MySQL experience is desirable) and a good knowledge of client-server architecture and
Mac OS X Server/Unix is required.
Experience administrating Apache web server in a Unix environment would also be
beneficial.
Must be happy working within a small team of capable and enthusiastic developers with
practical processes and to high standards.
Experienced in taking ownership and responsibility for functional sections from conception
through design to implementation and support.
Willingness to handle both large projects and small tasks as needed and must be eager to
learn new technologies.

9. Dimensions
An example of the scope of the projects that the job holder is responsible for can be
demonstrated by the work currently carried out on the National Priorities in Education web
site. The job holder is solely responsible for the correct publication, to a very short deadline,
of all the associated schools and local authority data for this project that accounts for some
2900 schools and all 32 local education authorities.
At any one time the job holder will be required to liaise with between 2 and 5 independent
customers. Additionally they would be expected to provide technical support for previous
customers although this would be an infrequent exercise.
There is no formal line management of other staff but the job holder must provide a
mentoring role for junior members of staff and temporary staff to ensure their skill set is at a
sufficient level to be productive members of the team. This can vary between 2 and 5 full
time staff.
The job holder would be expected to be responsible for a hardware and software budget of
approximately £10k per annum and to be responsible for the operation and maintenance of
equipment totalling approximately £30k.

10. Job Context and any other relevant information
SITC is a non-funded category 2 department within the School of Education and works
without any grant funding. Their clients include the Scottish Executive Education
Department & Social Work Department, Learning Teaching Scotland, various local
authorities, national education departments of foreign governments and other departments
within the School of Education. SITC specialises in ICT based professional development
products to allow self-reflection and collaboration. They use the latest ICT, video, audio and
digital asset management, exploited fully via networked dissemination of learning objects.