University of Edinburgh
Job Description

1. Job Details
Job title: Senior Software Engineer
Planning Unit: EDINA
Unit (if applicable): Research and Geo-data Services
Line manager: Head of Research and Geo-data Service Delivery

2. Job Purpose
- Lead development, operation and maintenance of shared services, common software components underpinning the efficient and effective delivery of national services and enabling interoperability.
- Lead development, operation and maintenance of national services delivered via the Internet, specifically logging and auditing to meet contractual legal obligations, giving access to geo-spatial data.
- Provide a technical lead for externally-funded and internally determined project activity through technical investigations and development of demonstrators in the geospatial arena.

3. Main Responsibilities

1. Ensuring the day to day operation of the key national services with special respect to the user management, service statistics area, ensuring that contractual obligations of logging usage are satisfied. Helping to ensure the defined Service Level Agreements are met by identifying and performing necessary maintenance and data updates, analysing service faults, and providing technical support to helpdesk staff. Provide operational cover for these services.

2. Participate throughout the full project development cycle, from contribution to tender responses, implementation planning and scheduling, design, development and testing of components, production of technical documentation and external reports. Ensure conformance to appropriate technical specifications and standards.

3. Continued enhancement of services by contributing to and implementing changes to the service or demonstrators to an agreed specification; co-ordinating management of versions.

5. Participate in the installation/implementation/configuration (consult, specify, design and create) and maintenance of internal EDINA support systems, such as shared geo-spatial software infrastructures.

6. Liaise with external organisations, such as public sector organisations and private companies in the UK and Europe, regarding projects, data and new uses of services and demonstrators.

4. Planning and Organising
Work generated by events, such as fault finding, may be urgent and require immediate action. The post-holder is expected to prioritise event driven service alerts and technical support queries without consultation.

The post-holder is expected to take a technical lead in the database/data server aspects of a full service or project. On future planning there is often considerable technical investigation over many months or sometimes years with consultations with other EDINA colleagues and wider afield with staff in other organisations providing or advising on national infrastructure. A large degree of initiative and planning is required in order to meet agreed service and project milestones and deliverables.
5. Problem Solving

A high level of ability in analysis and support skills appropriate to delivery of data services via web-based technologies. Typically, problems arise through complex interaction between software components, services provided by other organisations, interpretation and use of data and metadata, and subscribers accessing and using services in novel ways. The challenge being to identify where the problem actually lies and to initiate an appropriate response, either through escalation to those with direct responsibility or by investigating and identifying scalable solutions. Many problems require considerable experience and expertise to be applied.

6. Decision Making

The development and maintenance of services requires decisions in respect of changes which will affect all users of these services, or decisions on technology deployment that will have resource and/or skill implications. The post-holder would be expected to be able to assess risks, the timing of changes, consider resource constraints (both staff and financial) and provide recommendations to managers.

The majority of the day to day decisions, for example fault fixing, do not require upward reference, but are expected to be open to scrutiny and justification. The post-holder will take many decisions unaided and will be trusted to implement their recommendations for service enhancement after appropriate consultation.

7. Key Contacts/Relationships

EDINA staff in other technical teams and the User Support & Helpdesk team. Project and service collaborators in other HE or FE institutions, MIMAS (a further JISC designated Data Centre), public sector organisations and private companies.

8. Knowledge, Skills and Experience Needed for the Job

The job is of a very technical nature and requires a good honours degree in computing science (or related subject) and a minimum of five years relevant work experience. A high level of knowledge and hands on skill in: Object/Relational Database design, development, administration, tuning and maintenance skills with Database Management systems such as Ingres, Oracle/Oracle Spatial, PostgreSQL, MsAccess; C++, Perl and Java; UNIX and Unix shell scripts; XML and related technologies; UML or similar Object Oriented Design techniques; Standard protocols such as SOAP, HTTP, ISO 19100 series. The ability to solve problems in a timely and effective manner, often under pressure, is essential. The individual in this post also needs to have knowledge of mathematical techniques as they apply to the implementation of spatial algorithms.

9. Dimensions

There are national and international dimensions, through engagement with formal partners or collaboration with other organisations. Several of the EDINA national services, such as Digimap, are core resources for subscribing institutions.

EDINA services are available, usually through institutional subscription, to all UK HE and FE institutions; some are freely accessible. They are formally measured by service level agreements, available 24/7, with uptake by staff, students and researchers from over 165 university institutions and 242 colleges.

Some services are managed on behalf of external bodies where the reputation of EDINA and ultimately the University is at stake.

10. Job Context and any other relevant information

The activities of EDINA and its performance have high profile, nationally and internationally.

The post requires a wide ranging knowledge across a number of core topics technically complex and challenging, as each service is unique and issues have been experienced before. Web standards, usable technologies, and use of technologies are all constantly evolving and significant effort is required to maintain and apply relevant, up to date knowledge.