The University of Manchester

Job Description

Job Title:	Research IT Software Engineer (Grade 5)
Grade:	5
Reports to:	Research IT Software Engineering Manager
Responsible for:	N/A.
Office:	ITS
Date:	September 2014

Overall Purpose of the Job

Working with individual researchers or research groups the role will assist with the specification, design or modification of systems to meet defined research needs. The identification of concepts and their translation into implementable design. The design or selection of components. The retention of compatibility with current architectures, and the adherence to appropriate standards within constraints of cost, security and sustainability.

The design, creation, testing and documenting of new and amended programs in accordance with agreed standards.

The role will be responsible for undertaking assignments across project and/or service functions as required.

Key Responsibilities, Accountabilities and Duties

Dependent upon assignment:

- Working alone on systems and modifications to existing systems, or with colleagues on more complex systems, specifies user/system interfaces, including for example: menus, screen dialogues, inputs, wireframes, boned rigs, visual characters, reports, validation and error correction procedures, and processing rules.
- Translates logical designs into physical designs taking account of target environment, performance requirements and existing systems. Produces detailed designs including for example: physical data flows, class diagrams, file layouts, common routines and utilities, program specifications or prototypes, and backup, recovery and restart procedures.
- Produces logical system designs showing for example: processes, objects, data flows, inputs, stored data and outputs. Identifies common processes.

- Working with data analysis colleagues where appropriate, produces or updates system object/data models and correlates these with corporate models.
- Working with database design or database administration colleagues where appropriate, translates object and data models into appropriate DB schemas within design constraints.
- Constructs, interprets and executes test plans to verify correct operation of completed systems.
- Designs programs and program modifications from supplied specifications, using agreed standards and tools, to achieve a well engineered result.
- Documents all work in accordance with agreed standards.
- Takes part in reviews of own work. Takes part in reviews of the work of colleagues.
- Maintains an awareness of current developments in the technical specialism.
- Identifying and deploying suitable methods and techniques for the development of research solutions. Includes identifying and testing suitable third party software from diverse sources including open source research code and commercial libraries.
- Post holders are required to familiarise themselves with the University's Equality and Diversity policies and to actively support these wherever possible.
- Demonstrate a commitment to the IT Services Values of: One IT Team, Enabling Others and Customer First. Display the appropriate behaviours to ensure the identified values are at the core of everything that is done.
- Be aware of and work within the constraints of the University Health and Safety, Data Protection, and Confidentiality policies, bringing to the attention of management any issues arising.
- Actively work to ensure knowledge sharing amongst colleagues to avoid single point of failure.
- To undertake such other duties as may be required from time to time commensurate with the level of responsibility of the role.

Person Specification

Essential Knowledge, skills and experience

Qualifications and Experience

- Previous relevant work experience and/ or holds a recognised relevant degree/professional qualification.

Skills and Competencies

- Programming Languages: A set of codes and syntax (supported by software tools) which enable the unambiguous translation of specified functionality into "source code" for the creation of computer programs.
- Application Development Methods, Techniques and Standards: Organised and documented sets of techniques, intended to facilitate the structured development of applications.
- Information Capture Techniques: The selection and application of information gathering methods, tools and techniques which are appropriate to the information required and the sources available.
- Technology Knowledge: Knowledge and practical understanding of specific technologies relevant to the role.
- Time Management Techniques: Methods and techniques for making effective use of own time.
- Software Testing: Testing techniques used to plan and execute software tests of all application components (functional and non-functional) to verify that the software satisfies specified requirements and to detect errors.
- Analytical Thinking: Acquiring a proper understanding of a problem or situation by breaking it down systematically into its component parts and identifying the relationships between these parts, selecting the appropriate method/tool to resolve the problem and reflecting on the result, such that learning is identified and absorbed.
- Attention to Detail: Applying quality standards to all tasks undertaken and ensuring that nothing is overlooked.
- Numeracy: Acquiring understanding of the metrics associated with a problem or situation, their significance and relationship, and being able to manipulate these as necessary to identify solutions.
- Persistence: Meeting targets and fulfilling agreements even when adverse circumstances prevail.
- Flexibility: Taking account of new information or changed circumstances and modifying understanding of a problem or situation accordingly.
- Teamwork: Working co-operatively (rather than competitively) with others to achieve a common goal.

Desirable Knowledge and Skills

Skills and Competencies

- Operational/Service Architecture: Knowledge of the IT infrastructure (hardware, databases, operating systems, local area networks etc) and the IT applications and service processes used within own organisation.
- Proof of Concept and prototyping: Performing a proof of concept or prototyping exercise to demonstrate or evaluate the feasibility and potential benefits of applying a particular technology, product or toolset to meet a business need.
- Information Acquisition: Identifying gaps in the available information required to understand a problem or situation and devising means of remedying such gaps.