The University of Manchester

Job Description

Job Title:	Research IT Software Engineer (Grade 6)
Grade:	6
Reports to:	Research IT Software Engineering or Research IT Applications Manager (as appropriate)
Responsible for:	N/A.
Office:	ITS
Date:	September 2014

Overall Purpose of the Job

Working with individual researchers or research groups the role is responsible for the specification, design or modification of software systems to meet defined research needs. The identification of concepts and their translation into implementable design.

The role includes providing consultancy and advice, service development, software development (short and long-term), solving users' problems, developing documentation, community building, installing and configuring software and ensuring licence compliance. The retention of compatibility with current architectures, and the adherence to appropriate standards within constraints of cost, security and sustainability.

The role will also be involved in the training of researchers in one or more aspects of research applications, programming, visualization and computationally intensive research systems and languages.

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

Key Responsibilities, Accountabilities and Duties

Dependent upon assignment:

- Collaborates with, and facilitates stakeholder groups, as part of formal or informal consultancy agreements. Facilitates groups to optimise time, effort and success for fact finding and agreement of a solution.
- Carries out assignments, alone or as part of a team, applying knowledge, skills, and experience. Demonstrates an understanding of the issues of interest to the client organisation and proposes viable solutions within the scope of own expertise, taking into account the needs of those affected.
- Working alone on moderately complex systems and modifications to existing systems, or with colleagues on larger or more complex systems, specifies

user/system interfaces, including for example: menus, screen dialogues, inputs, reports, validation and error correction procedures, processing rules, access, security and audit controls, recovery routines and contingency procedures.

- 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.
- Documents all work using required standards, methods and tools, including prototyping tools where appropriate.
- Teaches, instructs and/or trains students in relevant knowledge, techniques and skills using appropriate methods, equipment and materials. The students are likely to be of differing levels of ability and to have some understanding of the application of IT.
- Promotes transfer of knowledge and awareness of the technical specialism to those in closely-related areas, such as IT staff, clients/users and development teams.
- Creates, amends and keeps track of programs in accordance with the design.
- Plans, designs and conducts tests of programs; corrects errors and re-tests to achieve an error-free result.
- Takes part in evaluations and reviews of programming methods, tools and standards.
- Identifies opportunities to apply the technical specialism within employing organisation and closely associated organisations, such as customers, suppliers and partners, and advises those responsible.
- Maintains an awareness of current developments in the technical specialism.
- Initiates, designs and writes new course materials within own area of technical specialisation(s) in response to changing demands and within any existing technical or policy framework. Responds to feedback by revising, editing, altering or modifying the training materials.
- 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.
- Demonstrates and leads a commitment to the IT Services Values of: One IT Team, Enabling Others and Customer First. Proactively working to ensure the

appropriate behaviours are embedded and maintained in support of the identified values.

- 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 a degree/professional qualification or substantial experience in a similar role.

Skills and Competencies

- Academic Knowledge: Knowledge and practical understanding of academic subject areas for example, statistics, numerics, finite element modelling, visualization etc.
- Consultancy or Technical Specialism: Specialist knowledge and skills in one or more functions, technologies or industries.
- Application Development Tools: Software tools which automate or assist part of the development process.
- Technology Knowledge: Knowledge and practical understanding of specific technologies relevant to the role.
- Business Environment: The business environment relating to own sphere of work (own organisation and/or closely associated organisations, such as customers, suppliers, partners), in particular those aspects of the business which the specialism is to support (i.e. localised organisational awareness from a technical perspective).
- Information Acquisition: Identifying gaps in the available information required to understand a problem or situation and devising means of remedying such gaps.
- 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.Application Systems: The application of automated systems to the support of specific business functions or processes.

- 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.
- 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.
- 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.
- IT Environment: The IT environment relating to own sphere of work (own organisation and/or closely associated organisations, such as customers, suppliers, partners), in particular own organisation's technical platforms and those which interface to them through the specialism, including those in closely-related organisations.
- Attention to Detail: Applying quality standards to all tasks undertaken and ensuring that nothing is overlooked.
- Flexibility: Taking account of new information or changed circumstances and modifying understanding of a problem or situation accordingly.
- Organisational Awareness: Understanding the hierarchy and culture of own, customer and supplier organisations and being able to identify the decision makers and influencers.
- Interacting with People: Establishing relationships and maintaining contacts with people from a variety of backgrounds. Effective and sensitive communicator in different societies and cultures.

Desirable Knowledge and Skills

Skills and Competencies

- Project Planning and Control Techniques: Methods and techniques associated with planning and monitoring progress of projects.
- Structured Reviews: Methods and techniques for structured reviews, including reviews of technical diagrams, test plans, business cases and any other key deliverables.