Job description

Service Area   Digital, Data and Technology

Job Title   Principal Developer

Band   8a

Location(s)
- Newcastle upon Tyne
- Bolton

Job purpose

The NHSBSA Digital, Data and Technology (DDaT) department operates in a matrix management structure:

- Project issues are managed by Delivery Managers
- Pastoral issues are managed by Team Managers
- Professional issues are managed by Professional Leads

A Principal Developer provides professional leadership to the Developer profession, which covers:

- Defining and socialising development standards across a set of technical specialisms
- Identifying programme level risks within Software Development and managing initiatives to mitigate
- Overseeing and assuring development practices across a set of projects
- Organising the Developer Community of Practice
- Recruiting, supporting career pathways and professional development

As a Principal Developer, you will be highly technical and hands-on capable, able to demonstrate a range of leadership skills, building and leading a culture of continuous delivery and improvement. You will manage and support a range of activities required in the NHSBSA's journey to become a multi-sourcing digital business. You will be expert in a specific set of technical systems, coding languages and frameworks, and non-functional areas such as security or accessibility.

You will be an active member of the DDaT directorate, requiring regular travel to our head office near Newcastle upon Tyne, and occasional visits to other locations. You will work under general direction and use your own discretion to identify and respond to complex issues and assignments. You will be expected to work with Team Managers to ensure the best use of professional resources and to provide peer support and undertake development and mentoring for staff in your community of practice. You will make and support decisions that will impact the allocation of resources and the delivery of work packages to meet priority objectives and delivery timeframes.

You will need excellent communication skills, influencing across multiple groups of people including customers, suppliers and partners. You will form a deep understanding of wider customer and organisational needs, participating in both internal and external activities in line with your specialism to keep your skills up to date. With a clear ability to rationalise complex technical information, you will transform this information, making it understandable for others to work with.

You will engage with stakeholders, facilitate and foster collaborative approaches, prioritise requirements and optimise resource utilisation. You should demonstrate a creative and innovative approach and advise on standards, methods, tools and applications, so that the optimum approaches, standards and solutions are delivered to meet organisational objectives.

You will report to the Head of Software Engineering, alongside other Principal Developers and the Professional Lead for Test.

In this role, you are accountable for

Software development leadership

1. Provide in-depth expertise, for consultation across all areas of DDaT, in designated technical specialisms, and software development practices.
   See appendix I for details.

2. Support multiple development teams across a set of services to achieve efficient delivery of quality outcomes.

3. Define, document and socialise NHSBSA software development standards, design patterns, methods and tools. Ensure they are applied effectively and are iterated to provide continuous improvement.

4. Review specifications and solution designs, to ensure consistency, selection of appropriate technology, efficient use of resources and integration with multiple systems and technologies. Provide feedback on functional and non-functional requirements to ensure the overall needs of the business are met within software delivery.

5. Act as an escalation point for technical issues arising across the project delivery lifecycle. Apply experience and collaboration skills to find appropriate solutions, coordinating with professionals from within and outside of the project team as necessary.

6. Identify programme level risks within software development across multiple services and raise through appropriate channels.

7. Identify, prioritise and lead the strategic implementation of risk mitigations, improvements and efficiencies, ensuring that the organisation derives maximum value across multiple services.

8. Manage the assurance of software development activities across a range of project including internally developed, 3rd party partnerships and fully outsourced. Develop appropriate measures and processes to provide sufficient insight into project delivery

health. Identify trends and anomalies, reporting at agreed frequency on development needs and deviations from standards.

9. Lead the Developer Community of Practice, being accountable for developers aligned to your designated technical specialisms.

Knowledge management

10. Take an active, lead role in your professional development. Keep up to date with the latest technologies and software development standards and best practice, through self-directed and NHSBSA organised learning activities.

11. Identify, investigate and champion the application of emerging technologies and approaches within software development.

12. Create workable prototypes using a variety of methods and tools to meet business and user needs.

13. Identify and support opportunities for teams to develop their skills to meet the changing needs of the business. Take ownership for decision making within your area, seeking support and feedback to develop well thought out solutions, processes and work as required, and in conjunction with agreed procedures.

Relationship management

14. Foster relationships and partnership, to identify and deliver value to the organisation.

15. Collaborate across multiple disciplines to achieve strategic aims, ensuring consistent approaches, methods, standards, and patterns are holistically applied:

    a. User Centred Design

    b. Architecture

    c. Security

    d. Data

    e. Test

    f. Platform

    g. Support

    h. Commercials

    i. Finance

16. Work with Team Managers to identify, implement and support team and individual development, career progression, performance management, providing mentorship and guidance for other software developers.

17. Consult with wider UK Government departments and agencies, and industry to define and achieve strategic aims.

18. Deputise for the Head of Software Engineering as required.

Information management

19. Maintain the confidentiality, integrity and availability of information systems through compliance with relevant legislation and regulations and that controls and management strategies are designed and implemented to support this.

Delivery management

20. Manage workload complete to a high quality and within agreed timelines. Deliver continuous improvements to enhance own and business areas; co-ordinate delivery of work across multiple strands such as continuous improvement, project related work, and operational tasks, escalating issues at appropriate times.

21. Prepare plans to enable the delivery and management of projects and programmes undertaken by the professional leadership team. Provide strategic and operational direction in the preparation of plans to deliver systems and services across DDaT and the organisation.

22. Manage and implement approaches strategies, standards, practices and policies across the software development profession, ensuring and monitoring the timely delivery of business objectives within budget.

23. Proactively identify warning signs of significant delivery challenges and provide a decisive response.

24. Contribute to and lead procurement processes for hardware, software and outsourced capability. Review functional and non-functional requirements to ensure the overall needs of the business are met from a DDaT perspective.

Financial management

25. Contribute to budget management processes in accordance with NHSBSA's policies, standing orders, financial regulations and legislative requirements.

26. Contribute to and prepare proposals for change, including producing necessary estimates, mandates and business cases.

27. Monitor budget spend and resource estimates against projects and change initiatives.

Staff management

28. The general management of activities and standards of staff within professional disciplines across multidisciplinary teams.

29. Enable the performance of others, including objectives setting fully aligned to departmental and organisational objectives and goals, and the development and motivation of staff to achieve them.

30. Mentor staff and advise on career paths to encourage pro-active development of skills and capabilities.

31. Conduct meaningful appraisals and 1-1s, identifying and meeting development needs, implementing, monitoring, evaluating and reporting on the impact and success of training plans.

32. Receive and act upon and where possible resolve a range of escalations including staffing, disciplinary procedures, resourcing business and technical, to secure satisfactory outcomes. Where unable to resolve, provide sufficient detail, escalate to the appropriate levels within the organisations, within agreed policies, procedures and processes to ensure appropriate resolution.

33. Undertake recruitment and selection in line with organisational processes. Participate in the implementation and delivery of initiatives to secure suitable resources, increase skill levels and develop talent pools to meet the changing needs of the business landscape.

34. Provide feedback to support and encourage teams and individuals to develop thinking and independently work through issues, to reach solutions-based outcomes. Lead by example by seeking, providing and implementing individual feedback to improve ways of working and own performance.

In addition to the above accountabilities, as post holder you are expected to

1. Undertake additional duties and responsibilities in line with the overall purpose of your role and as agreed by your line manager.

2. Demonstrate NHSBSA values and core capabilities in all aspects of your work.

3. Foster an environment where your own and colleagues' safety and well-being is promoted.

4. Contribute to a culture which values diversity and inclusion.

5. Comply with NHSBSA policies, procedures, and protocols as they apply to your role.

Working relationships

Responsible to   Head of Software Engineering

Responsible for
- Lead Developers
- Developers
- Junior Developers
- Apprentice Developers

Key relationships and connections

1. Heads of Profession
   a. Software Engineering

b. Architecture

   c. User Centred Design

2. Professional Leadership

   a. Principal Developers

   b. Professional Lead for Test

   c. Professional Lead for Design

   d. Professional Lead for User Research

3. Team Managers

4. Delivery Managers

5. Architecture (Enterprise, Data, Solution, Technical)

6. Security (Information Security, Information Governance, Cyber Security)

7. Platform Engineering

8. Live Support & Operations

9. IT Service Management

10. Governance, Risk & Compliance

11. Commercials

12. Finance

Person specification

Service area   Digital, Data and Technology

Job title   Principal Developer

Qualifications

Essential criteria

1. Level 6 equivalent qualification in IT (e.g. BSc Computing)
   OR
2. Relevant experience of the subject matter

Desirable criteria

3. Level 7 equivalent qualification in IT (e.g. MSc Computing)

Demonstrated by

- Application form
- Approval body certification

Experience

Essential criteria

4. Ongoing Continuous Professional Development.
5. Leadership of a technical community of practice.
6. Development lead of large-scale, cloud hosted, web-based solutions.
7. Work in agile development teams, with experience of scrum lifecycle, ceremonies and concepts such as user stories.
8. Open source and cloud technologies.
9. Use a strategic approach to optimise software development practices.
10. Identify functional and non-functional requirements and ensure they are analysed and implemented as part of a project.
11. Author of software development standards, policies and supporting guidance.
12. Stakeholder engagement across a wide range of professions and business functions, building relationships to support delivery of user and business needs.
13. Present to large audiences with effective communication techniques.

14. Oversight of development activities across multiple delivery teams.

15. Applying technical knowledge and experience to create or design workable prototypes.

16. Creating and implementing a quality assurance process across the software development discipline.

17. Mentoring and leading a community of practice of developers.

Desirable criteria

18. Applying Government and/or NHS Service Standards to deliver solutions to meet user needs, with particular emphasis on:

    a. protecting users' confidentiality and privacy,

    b. choosing the right tools and technology,

    c. coding in the open,

    d. using/contributing to open standards, common components and patterns,

    e. operating a reliable service,

    f. ensuring clinical safety,

    g. focus on interoperability.

19. Business change, rationalisation and transformation

20. System administration and configuration management skills.

21. Interaction with a range of external, third-party suppliers.

22. Use of common agile supportive tooling such as Jira, Confluence, Miro.

Demonstrated by

- Application form
- Interview

Personal Qualities, Knowledge and Skills[1]

Essential criteria

23. Expert in writing clean and maintainable, tested, production ready code in one of the NHSBSA core languages and frameworks (see Appendix I)

24. Expert in developing for at least one architectural tier (see Appendix I)

25. Expert in at least one key NHSBSA non-functional requirement (see Appendix I)

26. Expert in at least one NHSBSA cloud platform (see Appendix I)

27. Expert in version control (Git), CI/CD build and release strategies.

28. Expert in 3rd line application support covering problem diagnosis within complex systems, and appraising remediation options and determining the most appropriate action.

29. Practitioner in Agile software delivery.

30. Working knowledge of change management.

31. Working knowledge of requirements capture and analysis.

Desirable criteria

32. Practitioner in assurance of software development projects.

33. Practitioner in risk management covering identify, define, assess and treat stages.

34. Working knowledge of requirements capture and product selection.

35. Awareness of commercial procurement processes and frameworks

Demonstrated by

- Application form
- Interview

Relevant professional framework

36. Principal Developer as defined by the UK Government DDaT Professional Capability Framework[2]

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[1] Qualities, Knowledge and Skills are expressed as 'levels', following the definition in the DDaT Capability Framework - https://ddat-capability-framework.service.gov.uk/

[2] https://ddat-capability-framework.service.gov.uk/software-developer.html#principal-developer

Appendix I – Technical Specialisms

Principal Developers are responsible for providing in-depth expertise in designated technical specialisms.

Languages and frameworks

The NHSBSA develops solutions using two key languages, and associated frameworks. A Principal Developer must demonstrate in-depth technical expertise in at least one of them:

- **Java and Spring Boot**
  The majority of our in-house web-applications and web-services use Java and Spring Boot as the core language and framework.
  Java projects are built using Maven.

- **Node.js and Javascript/Typescript**
  Most newly developed front-end web-applications use Node.js as this aligns to the NHS and UK Government, Nunjucks based Frontend toolkits.
  Most cloud based function as a service (FaaS) solutions use Node.js/Javascript.
  Node.js projects are built using NPM and Gulp

We also develop no-code/low-code solutions using Microsoft Dynamics and Power Platform, and Robotic Process Automation (RPA) using Blue Prism. In depth knowledge of the Microsoft platform or Blue Prism is desirable but not essential.

Tier

Principal Developers must demonstrate expertise in at least one of the classical 'tiers' in software architecture:

- **Frontend**
  With a focus on user interface design, your frontend expertise will cover semantic HTML, search engine optimisation, CSS, module bundlers, authentication and web security.

- **Backend**
  Backend expertise will cover RESTful API design including OpenAPI v3, Database relational schema design, SQL, NoSQL, Transactions and Asynchronous components such as queues.

Non-Functional Requirements (NFR)

These are considered high priority NFRs for which technical leadership is required:

- **Quality**
  Quality control within the Software Development Life Cycle (SDLC) is a key concern across all our delivery teams. You must have expert knowledge of what constitutes quality software and how to deliver it, with practices and concepts including clean code, code smells and refactoring, design patterns, development principles, test driven development, traceability and peer review.

- **Security**
  Secure development and operations (DevSecOps) is far reaching specialism. You will need in depth knowledge of key OWASP projects, including top ten risks, top ten proactive controls, application security verification standard. You will lead on ensuring tools such as SCA, Secrets Detection, SAST, SBOM, container scanning are embedded into every project team's SDLC.

- **Accessibility**
  As well as being a legal requirement for public sector organisations to be compliant to the most current WCAG standard (Level AA), accessibility is fundamental to meeting NHS service standard 5: Make sure everyone can use the service. Accessible HTML, use of ARIA markup, use of screen readers and voice control are all skills required to support our services and ensure standards are met.

Platform

The NHSBSA delivers solutions on two key platforms:

- **AWS**
  AWS is our core platform for service delivery. We have chosen to adopt cloud native, and so a thorough understanding of the AWS services is imperative for all Principal Developers.

- **Microsoft Azure**
  Azure is our cloud platform for business products, such as office and collaboration tools. We use Dynamics for case management and customer relations management, and Power Platform for low-code/no-code internal applications. We use Azure Active Directory for internal authentication and authorisation.