Met Office

Interview Information Pack

Scientific Software Engineer Job Family

Congratulations on being shortlisted for interview at the Met Office. HR will be in touch shortly to organise an interview date. The interview will be held virtually on Microsoft Teams with a panel that will be made up of three staff, drawn from managers and senior staff in the area. If you would prefer an in-person interview at our Exeter HQ, please get in touch and this can be arranged. If you would benefit from any adaptations, such as an audio-only interview or needing extra time to process verbal questions, HR can organise this for you. You should receive a meeting invite a couple of days before your interview, along with descriptions of the different teams who are recruiting (if there are multiple teams in the campaign). To help candidates perform at their best we have prepared the following information about the process.

At interview we request that you speak for ten minutes about how you solved a short technical exercise (details below) with a scientific basis (no specialist scientific knowledge necessary). When you share your solution, you will provide better evidence (and potentially score more highly) if you reflect on your approach, why you did it a particular way and how you might have tackled it differently. Some questions are included (at the end of the exercise section) to help you with this reflection. There are many ways to share information - you may decide to approach it as a code review, use a white board, structure it around a powerpoint, combine multiple approaches or do something completely different! The panel need to see your solution and get your answers to the questions. If you wish to use a presentation (or similar) it should be submitted via email 24 hours in advance. You should be able to share your screen via Teams during the interview.

The interview will last approximately an hour and be in the following format:

- Introductions – we ask everyone to share their preferred name and pronouns, and the panel will include what their normal job role is.
- Technical Exercise Solution Sharing – up to 10 minutes (the panel will let you know when you have 2 minutes remaining), plus 5 minutes Q&A. This will be marked against essential criteria 1-4 (20 marks total, note no E5 – that gets two sections later instead).

- Additional Questions around each of the essential criteria and the Met Office Values (5 marks per section):
    - E1: Technical Insight and Delivery
        - Think of examples of challenging or significant technical projects you have worked on.
    - E2: Requirements and their Context
        - Think of examples of how you have gained a better understanding of a task's requirements and its context.
    - E3: Quality Assurance
        - Think of examples of how your approach to improving the quality of output has changed over time.
        - Note that we are considering quality assurance in a broad context - “Quality Assurance processes, best practice, standards and/or regulations”.
    - E4: Communication
        - Think of examples of how you have communicated new ideas with others.
    - E5: Developing Self
        - Think of examples of how learning something new had an impact on your work.
    - E5: Developing Others
        - Think of examples of how you may have helped someone else learn something (at SSE and Senior level this should be something technical)
- (Unmarked) For multi-post adverts we will ask some further questions to help us figure out which role might best suit you – how the role might align with your job desires, what kind of work your ideal job might involve, etc. These are **not marked** and will not influence your ranking. These are used to help us allocate the top candidates to the roles that we think will best suit them.
- (Unmarked) Discuss practicalities - expectations around job location, availability / notice periods, etc.
- (Optional, unmarked) Any questions from you for the panel.

The questions asked by the panel will also give you an opportunity to evidence the Met Office values (https://www.metoffice.gov.uk/about-us/who/values/our-values) as part of your response. The questions have no one right answer – we are looking for you to give us examples that answer the question rather than for your answer to include specific words or phrases. For this reason, they are all in the style of "Can you think of an example of when …", looking for you to draw on examples that relate to the criteria being assessed.

The panel will be taking notes during the interview, and afterwards the marks will be moderated between the panellists to produce the final score that is used to rank the candidates. The panel will record feedback, and this will be available for you upon request afterwards. The Met Office will offer posts strictly in ranking order – based only on the interview marking (not CV or cover letter).

We will tell you at your interview when we expect to reach a decision on candidates (typically this will be a few working days after the last interview to allow for moderation of scores and HR verification, but this may be delayed if reserve interview slots are needed).

There will be reserve interview dates available should you have circumstances beyond your control that mean you are likely not to perform at your best on your scheduled interview date. Contact HR to request a rescheduled interview slot before your interview date/time. This will not affect your mark and HR won't pass any reason to the interview panel during the recruitment process (they may be anonymised and reviewed periodically to check this clause is promoting equality, diversity and inclusion). If this is last minute, please call HR directly on 0330 135 3000.

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Interview Technical Exercise

A forecaster would like to test the accuracy of historic methods for calculating overnight minimum temperature against our latest modelling. They have the following method from "The Forecaster's Reference Book".

$$T_{min} = 0.316T_{12} + 0.548T_{d12} - 1.24 + K$$

Where:

$$T_{12} = Temperature\ at\ 12{:}00$$

$$T_{d1} = Dew\ Point\ Temperature\ at\ 12{:}00$$

And K is derived from a lookup table based on cloud cover (expressed in Oktas – from 0-8 representing eighths of cloud cover) and the wind speed:

K lookup table

Wind Speed (knots)	**Cloud Cover (oktas)**			
	0-2	**2-4**	**4-6**	**6-8**
0-12	-2.2	-1.7	-0.6	0
13-25	-1.1	0	+0.6	+1.1
26-38	-0.6	0	+0.6	+1.1
39-51	+1.1	+1.7	+2.8	Unknown

The reference book includes an example:

$$T_{12} = 18℃$$

$$T_{d12} = 10℃$$

$$Cloud\ Cover = 3\ oktas$$

$$Wind\ Speed = 30kn$$

$$Therefore\ K = 0$$

$$Resulting\ in\ Tmin = 10℃$$

They have some initial data to trial:

Date	**Location**	**Midday Temperature (℃)**	**Midday Dew Point (℃)**	**Wind (Kn)**	**Cloud (oktas)**
1	A	22.4	10.9	14.56	3.9
1	B	18.6	12.65	3.4	6
2	B	26	8.5	0	0.0
2	C	13.2	9.4	12.5	4.1

Help develop a validated solution to meet the forecasters needs, to be shared at the interview (see Interview Information Pack for more details including timings).

There is no single correct solution to this exercise and different people may emphasize different aspects based on their skills, knowledge, and experience. You may use any appropriate programming language and/or other tools available to you, and we would be interested to hear what alternatives you may have liked to use.

When sharing at the interview please answer the following questions (considering the essential criteria):

- What did you do?
- Why did you do it that way?
- Who should be involved in developing the final solution?

- How has what you don’t know about the problem impacted your solution?
- How might you do it differently in a team or production context?
- What things might you need to consider if this was the start of a larger project?