The Wizzo project has two phases. Each phase consists of three main tasks: analysis, coding and test, which must be performed sequentially. Analysis for phase two can begin immediately on the completion of analysis for phase one, but coding for phase two must await satisfactory testing of the phase one code. **Analysis is expected to take 3 weeks for phase one, and 4 weeks for phase two,** while **coding is expected to take 2 weeks for phase** one and **3 weeks for phase two.** Testing is expected to take 1 week for both phases.



**(a) Draw the GANTT chart for the Wizzo project, and define the critical path.**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Weeks** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** |
| P1 Analysis | **X** | **X** | **X** |  |  |  |  |  |  |  |  |
| P1 Coding |  |  |  | **X** | **X** |  |  |  |  |  |  |
| P1 Testing |  |  |  |  |  | **X** |  |  |  |  |  |
| P2 Analysis |  |  |  | **X** | **X** | **X** | **X** |  |  |  |  |
| P2 Coding |  |  |  |  |  |  | **X** | **X** | **X** |  |  |
| P2 Testing |  |  |  |  |  |  |  |  |  | **X** |  |

**Critical path:** P1 Analysis → P1 Coding → P1 Testing → P2 Coding → P2 Testing

= 3 + 2 + 1 + 3 + 1 = 10 weeks

**(b) During testing of phase one, a serious bug is found resulting in 2 weeks of extra work being required in that phase. How will this affect the overall timescale the project?**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Weeks** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| P1 Analysis | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |
| P1 Coding |  |  |  | **X** | **X** |  |  |  |  |  |  |  |
| P1 Testing |  |  |  |  |  | **X** | **X** | **X** |  |  |  |  |
| P2 Analysis |  |  |  | **X** | **X** | **X** | **X** |  |  |  |  |  |
| P2 Coding |  |  |  |  |  |  |  |  | **X** | **X** | X |  |
| P2 Testing |  |  |  |  |  |  |  |  |  |  |  | **X** |

We would add 2 more weeks to the original schedule of 10, making new schedule to last 12 weeks until completion.

**(c) An extra programmer is assigned to the project in week 6, potentially increasing code productivity by 50%, but first requiring 1 week's training by the project analyst. Will this allow the project to finish early, with or without the event described in (b) above?**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Weeks** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** |
| P1 Analysis | **X** | **X** | **X** |  |  |  |  |  |  |  |  |
| P1 Coding |  |  |  | **X** | **X** |  |  |  |  |  |  |
| P1 Testing |  |  |  |  |  | **X**  **+ new dev** |  |  |  |  |  |
| P2 Analysis |  |  |  | **X** | **X** | **X** | **X** |  |  |  |  |
| P2 Coding |  |  |  |  |  |  | **X** | **X** |  |  |  |
| P2 Testing |  |  |  |  |  |  |  |  | **X** |  |  |

**(d) What other tasks would you expect to be under the control of the Wizzo project manager and be included in a typical software project?**

I’d add the following extra responsibilities:

* Resource allocation
* Planning and Monitoring
* Communication / Status reporting
* Quality Assurance