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| **S.No** | **Application Domain** | **Complex Problem Domain** | **Justification** |
| **1.** | Healthcare | Patient Data Integration | Integrating diverse patient data from electronic health records (EHRs), wearable devices, and genomic data is complex due to varying formats, standards, and privacy regulations.The challenge is compounded by the need for real-time data processing and interoperability among systems |
| **2.** | Environmental Science | Climate Change Modeling | Climate change modeling involves numerous variables, including atmospheric conditions, ocean currents, and human activities, making it a complex adaptive system. The interactions between these variables are non-linear and often unpredictable, requiring sophisticated computational models and simulations. |
| **3.** | Urban Planning | Smart City Development | Developing smart cities involves integrating technology, infrastructure, and social systems to improve urban living. This complexity arises from the need to balance economic, environmental, and social factors while ensuring stakeholder engagement and addressing issues like data privacy and security. |