|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Application domain | Complex problem identified | Justification |
| 1. | Business/ Entrepreneurship | Starting a startup company | Opening a startup involves startup multiple challenges, such as securing funding, building a business mode, navigating legal requirements and understanding market dynamics. It also includes risks related to competition and product market fit. |
| 2. | Civil engineering | Building a dam | Constructing a dam is a complex problem due to environmental, financial and engineering constraints. It requires extensive geological studies, water management strategies, displacement of local population, environmental impact assessments and the challenge of maintaining structural integrity under variable loads. |
| 3. | Educational Technology | Developing an AI powered learning platform | Creating an AI- based platform for personalised education requires integrating adaptive learning algorithms, handling diverse educational content, and providing a seamless user managing vast data set to track student performance and customizing learning paths are also complex tasks. |
| 4. | Agriculture | Developing a smart irrigation system | Designing a smart irrigation system that uses a lot and AI to optimize water usage based on crops needs and weather patterns involves irrigating sensors real-time data processing, and predictive modelling. Additionally, it needs to be cost – effective and scalable for different types of farms. |
| 5 | Urban planning | Designing a smart city | Developing a smart city includes integrating advance technologies like a lot AI, and sustainable energy solutions into the Citys infrastructure. Managing real- time data for traffic, utilities and public services, while ensuring environmental sustainability, is a significant challenge. |