#	ACTIONS	ACTIVITIES	PREPARED BY	PEER REVIEW	Timeline
1	**Proposal Preparation**	**1.** Prepare a presentation outlining **project ideas** with the expected scope of work for each, and emphasizing feasibility and relevance to **project goals**.			1 (2 Weeks) — OCT
2	**Researching Related Works and Applications**	**2.** Build a strong scientific background by **reading** papers, **summarizing** them, and **explaining** them to each other.			2 (4 Weeks) — NOV
		3. Search about reliable and credible **open-sources** that we can **use** in our project.			3 (2 Weeks) — NOV
		4. Re-iterate the **comparisons** between related work while trying to add **more extensions** to the current work and **finalizing the project scope**.			4 (2 Weeks) — NOV; 4 (3 Weeks) — DEC
		5. Research the possibility of using **ML** in BitAuction.			5 (1 Week) — DEC
		6. Identify and document functional and non-functional **requirements** for the BitAuction system.			6 (3 Weeks) — DEC
3	**Learning**	**7.** Learn about **Hyperledger frameworks** (Fabric, Composer, Raft), **Smart contracts** (Chaincode), and **Off-chain** storage (Database, IPFS).			7 (1 Weeks) — DEC; 7 (8 Weeks) — FEB/MAR; 7 (3 Weeks) — APR
		8. Learn about **Docker, Kubernetes**, cache tools like **Redis**, and **Apache Flink/ Spark** for data streams processing			8 (1 Week) — DEC; 8 (8 Weeks) — FEB/MAR; 8 (3 Weeks) — APR
5	**Implementation**	**9.** Design the **architecture** of the system: **9.1.** Plan **integration points** for blockchain and off-chain components. **9.2.** Define the **technology stack** for frontend, backend, and blockchain.	@Michael @Joseph @Amr @Fareeda	@Tammam @Mohamed	9 (3 Weeks) — FEB
		10. Develop the **Blockchain Smart Contracts** (chaincode on Hyperledger): **10.1.** Implement **core auction logic** for **Open-Cry** as smart contract. **10.2.** Define **auction-specific rules**, including bidding timeframes, reserve prices, and dispute resolution. **10.3.** Design an efficient **transaction ordering system**. **10.4.** Test smart contracts for **security** and **correctness**.	@Tammam @Mohamed @Michael	@Fareeda @Amr	10 (2 Weeks) — FEB/MAR
		11. Build the **Backend** services: **11.1.** Develop **APIs** for auction operations. **11.2.** Implement user **authentication**, **authorization**, and **role management**. **11.3.** Integrate blockchain with **off-chain** components. **11.4.** Use **off-chain** data storage like **IPFS**. **11.5.** Improve **scalability** by using **multichain** solutions.	@Joseph @Fareeda @Amr @Mohamed	@Michael @Tammam	11 (4 Weeks) — MAR; 11 (3 Weeks) — APR
		12. Develop **User friendly interface** (Web or Mobile Application) **12.1.** Support dynamic **live** auction interface ensuring **low latency** and **real-time updates**. **12.2.** Design a **clean**, **intuitive**, and **easy-to-navigate** user interface.	@Tammam @Michael @Fareeda @Amr @Mohamed	@Joseph	12 (3 Weeks) — MAR; 12 (5 Weeks) — APR/MAY
		13. Conduct **testing** and **evaluation** of the system **13.1.** Conduct an evaluation for the **blockchain** and the **application**.	@Amr @Fareeda @Michael @Tammam @Joseph	@Mohamed	13 (3 Weeks) — MAY

Timeline markers: **MIDTERM** (late NOV/early DEC), **FINAL** (JAN), **MIDTERM AND EIDELFTR** (MAR/APR).

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				OCT				NOV				DEC					JAN				FEB				MAR				APR				MAY			
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