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| Your project (300h) | |
| Academic/Technologies/Theories/Report | Practical/Product/Features /Software |
| 1. MVC Model 2. Responsiveness web design (bootstrap) 3. Interaction Design 4. eCommerce + online payment systems (tutorial about Ngân Lượng, paypal) 5. Cloud Computing (GAE + Ms. Azure) 6. RAD, RUP, VModel… 7. Enterprise Architecture Framework (TOGAF) 8. Software Production Line 9. MongoDB + NodeJS, etc. 10. Distributed Information Systems 11. Data Mining/Machine Learning | Shopping cart |
| 1. Interaction design for mobile applications 2. Game design 3. Mobile Application Design 4. Game frameworks 5. Game physics engine 6. Artificial Intelligence for Games (MiniMax, Decision Tree) | Games/Mobile Apps |
| 1. Hadoop and related projects (Spark, Hive, …) | Big data (kaggle.com, or https://cloud.google.com/public-datasets) |
| 1. Face recognition 2. Image filter 3. Machine Learning 4. Image processing | Heart rate from video, self driving car, etc… |
| Project Title (Topic) | |
| An investigation about [tech] and its application in developing… | …[your product]. |
| One technology:  E.g., An investigation about MongoDB and its application in developing Online Shopping Cart.  Two technologies:  E.g., An investigation about MongoDB and Online Payment Systems and their applications in developing Online Shopping Cart.  More than two technologies:  E.g., An investigation about emerging technologies in web development and their applications in developing Online Shopping Cart. | |
| Requirement specifications | |
| - Read books/journals/papers | - Evaluate similar products  - Requirements from company  - Interviews  - Questionnaires |
| Software Development Methodologies | |
| - RAD  - RUP  - Agile (Scrum, extreme programming, TDT,…)  - Waterfall  - V-model  - TOGAF… | Applied in developing this product e.g.,  - Analysis  - Design  - Implement  - Test |
| Project Proposal | |
| Aims | |
| To understand about [tech] and to be able to apply it in developing… | [product] |
| E.g., To understand about MongoDB and to be able to apply it in developing Online Shopping Cart. | |
| Objectives + activities + deliverables | |
| Academic/Technologies  [Cloud computing] | Product/Features  [Shopping cart] |
| Objective 1. To understand about Cloud Computing  Activities  1. Research about cloud computing  2. Research about cloud computing providers (e.g., Ms. Azure, Google App Engine, Saleforces, etc.)  3. Select an appropriate cloud computing provider  Deliverables:  1. A report (1000 words) about cloud computing  2. A report (500 words) about CC providers  3. A detail report (1000 words) about select CC provider  Objective 2. To select a Software Development methodology for this project  Activities:  1. Research about software development methodologies (RAD, RUP, Agile, Waterfall, etc…)  2. Select an appropriate software development methodology for this project  Deliverables:  1. A report (500 words) about SDMs  2. A report (500 words) about selected SDM  Objective 3. To gather requirements for the system  Activities:  1. Read books/journals/papers about the [product] |  |
|  | *2. Evaluate similar products*  3. Interview  4. Questionnaires  5. Focus Group (JAD)  6. Work shadowing  7. etc.  Deliverables  1. Requirement specification documentation  Objective 4. To analyze the system  Activities:  1. Create Context diagram  2. Create Use case diagrams  3. Describe the use cases (use case narratives, activity diagrams)  Deliverables:  1. Context diagram  2. Set of use case diagrams  3. Set of use case descriptions  Objective 5. To design the system  Activities:  1. To research about design principles (modularization, cohesive, decoupling)  2. To create informational design (DB Design - ERD)  3. To create functional design (Class diagrams)  4. To do algorithm design (pseudo codes, flow-charts)  5. Interaction Design (or just GUI Design)  Deliverables:  1. A report about design principles  2. ERD  3. Set of class diagrams  4. Set of pseudo codes/flowcharts for the algorithms used  5. GUIs  Objective 6. To implement the system  Activities:  1. Select an appropriate programming language  2. Select an appropriate DBMS  3. Select an appropriate IDE  4. Code  Deliverables:  1. A report about selected programming language  2. A report about selected DBMS  3. A report about IDE  4. The software  Objective 7. Testing  Activities:  1. Select test strategy, Black box, White box, Mixed (optional)  2. Write test cases  3. Do test  4. Write test result evaluations  Deliverables  1. A report about selected test strategy (optional)  2. Set of test cases  3. Set of test results  4. Test result evaluations |
|  | Objective 8. Evaluations  Activities  1. Describe about the product built (screenshots + guide steps -> user manual) |
| 2. Analyze Strengths/Weaknesses of the products  3. Analyze Strengths/Weaknesses of the selected technologies in this case  4. Analyze Strengths/Weaknesses of the selected software development methodology in this case  Deliverables:  1. A report about product built  2. A report about Strengths/Weaknesses of the products  3. A report about Strengths/Weaknesses of the selected technologies in this case  4. A report about Strengths/Weaknesses of the selected software development methodology in this case  Objective 9. Conclusion and future works  Activities:  1. Write the conclusion  2. Write the future work  Deliverables:  1. A report about the conclusion  2. A report about the future work  Objective 10. To write the final report  Activities:  1. Write the first draft  2. Proof read the first draft  3. Complete the final report  Deliverables:  1. The first draft  2. The complete/final report |  |
| Identifying a topic | |
| Google search -> read simple tutorial about the topic, get the ideas. DON’T use this as main source of references for your report -> only use to quickly grab the ideas about what to do. | |
| Researching | |
| Books and journals  Books are good source to get the “rounded” knowledge about the topic. Recommended at Bachelor level.  Journals are advanced and specialized in some specific topics.  Sources for books:  FPT  - Local library  - <http://library.books24x7.com> -> use your [email@fpt.edu.vn](mailto:email@fpt.edu.vn) to register, and you need to use FPT University network to read  UoG  - <http://portal.gre.ac.uk> -> use your Greenwich account. | |