**Theory-Practice Correspondence Document**

**Project - Orsus**

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| **Key Concepts** | **Relevance** | **Real World Contexts** | **Interdisciplinary Connections** | **Critique** | **Technology, Tools and Test Cases** | **Project Management** | **Project Sketch** |
| **Introduction to Software Development Life Cycle** | Important to know about each stages of project . | LifeCycle should be followed by all the developers . | This can be used for any project as all the projects go through a life cycle that needs to be met at the various stages. This helps in keeping track of the progress of the project. | Analysing the requirements and path of project .. | GitHub, Google Drive, PyCharm,  Visual Studio Code, Python Text in Django, Notepad ++, unit test , unit test mock ,unit test 2 , doctest . | Planned to follow the life cycle by 20th August,2016 | Project completed by 26th November, 2016 |
| **Various Software Development Methodologies** | * **Waterfall Model:** As the requirements changed, so waterfall is not the required model. * **Prototype Model:** No prototype was built for the customer , rather a clear idea is taken from the customer. * **Spiral Model: This model is not choosen because** coustmer interaction is not performed after every single progress . * **Incremental Model:** This model is .After completion of work on one part , the second system is handled and in this way the project progresses. * **RAD Mode**l: No sufficient human resource. | Incremental Model is used in shrink-wrap large applications and systems which have built-in small phases, segments or variances.  Shrink Wrap Applications like Food pertainings. | The iterative procedure, the client involvement , the suggested requirements, the number of developers working and the time availability for the deployment are the various factors which made us choose Incremental Model for our project. | Few disadvantages of this methodology:   * Requires considerably heavy documentation· * Follows a defined set of processes· * Defines increments based on function and feature dependencies· * Requires more customer involvement than the linear approaches· * Partitioning the functions and features might be problematic, cumbersome and altogether unviable. * Integration between iteration can be an issue if this is not considered during the development. | Self-Analysis | * The project w-as finalized and * The members were decided from the very begining. * The requirements were specified and some were not clear * And some requirements were thought of , as and when the project’s progress became considerable * Hence the project model was decided in the August before the SRS document was made. | * The customer contacted and , * The project was finalized and * The specifications like customized design , easy interface etc. were specified and * As some aspects were undecided so the work was proceeded as the requirements were proposed by the customer. So Incremental model was decided to be the Software Development Methodology. |
| **Software Requirement Specification**  -Problem Analysis**:**  -Requirement Specification: | * Our project mainly focuses creating an ERP system for an organic Dairy Farming. It aims at providing our customer with an overall solution to help him in managing all the day to day task of the farm. * Simple UI, Portability, Custom design, Saving Design, Printing and Design Optimization | * Problem Analysis is very much important in real world as to complete a task we need to have all the objectives and aim clear in mind .Completing task will be much easy if the objectives will be clear. * The Requirement specification is done basically in every development based company and is very useful for knowing customer’s opinion. | * First we meet the customer and understand the problem, than the project team discuss and analyze it. * After the problem analysis, the requirements are decided by the agreement of the customer and tools, software’s are decided. | * In this it is analyzed that if the problem solving techniques are proper or not and examined why the alternatives were not selected. * In this it is checked if all the requirements are fulfilled and if any more requirements are there and if any changes are required. | * Self-Analysis, Word, Google Doc etc. * Self-Analysis,   Word, Google  Doc etc. | * The team decided its aims and requirements and hence developed the whole SRS on 26 August 2016. | * The members were decided and * the customer was contacted. * The requirements and the purpose , * And the scope of the project was written * Hence SRS was documented. |
| **System Design**  **-**Abstraction  -Modularity  -Coupling  -Cohesion  -Top-Down Design | -Abstraction is an important design tool as it extracts only the relevant information and ignores the rest.  Design remains uncertain to the user. In our project different screens will show only require information and rest will be hidden.  -Modularizing a design helps to plan the development in more effective manner. certain Different features are added as a separate function in our project.  -It shows the inter-dependability of modules. Few applications in our software are inter dependent .  -Cohesion is helpful to measure the level of intra-dependability within elements of module.  -In our project it was easy to implement as compared to bottom-up design. | -It is necessary for developers for hiding irrelevant details so that one can focus on important things at a time. Users don’t need unnecessary detailings.  -It is necessary as it helps in testing and debugging effectively.  -It is necessary as it tells how many modules and at what level they depend on each other .  -It is necessary as it decides how well modules fit together.  -It is necessary as we know our requirements beforehand. | -It allows controlling the complexity of design process by proceeding from abstract design model to concrete design model.  -It allows the easy maintenance without affecting the functionality of the software.  -If we need only one field of record then there is no need to pass all the records.  -Thorough knowledge of the functionality of every component is required.  -Requirements should be clear to the developer then only one can proceed. | -Can use it without knowing how it is implemented. Some important components can be left out. Left out basicly from user’s view.  -Greater the number of modules, greater will be the effort to integrate them.  -Less no. of coupling should be there . For better software .  -Higher cohesion will lead to better program.  -It is usually more effective for smaller programs. | Argo UML, Star UML, Creatly,  Visual Studio Code.  -Self Analysis  -Self Analysis  -Self Analysis  -Self Analysis | -Brainstorming and a series of discussions were done to decide what to show and what to hide.  -Project was divided into different modules.  -Figures dependency of modules .  -Figured out the dependency within modules.  -After observing the model design was decided. | -Meetings were done and all these concepts were applied.  -Meetings were done and all these concepts were applied.  -Meetings were done and all these concepts were applied.  -Meetings were done and all these concepts were applied.  -Meetings were done and all these concepts were applied. |
| **Coding**  **-**Top-Down Programming  -Structured Programming  -Information Hiding | -Modules at the top level perform general tasks and proceed to other modules to perform particular task.  -We chose this as it is helpful when we need some repetitive tasks in our program. It helped in some of our features like adding text boxes etc.  -It is used to minimize the complexities among different modules of software. | -Program is broken into smaller modules so it is easy to trace a particular segment of code in software program.  -It helps in reducing statements, multiple exit and entry points from the program.  -It focuses on hiding non-essential details of function in a program so that they are inaccessible to other components of the software. | -It makes the functions and procedures globally visible.  -It makes the software code easy to modify when required.  -After using information hiding, modules are connected with a specific section of program and not the whole program. | -There is a risk of implementing data structures as modules are dependent on each other.  -It is restricted to top-down approach of coding.  -Modules created without using information hiding  Affect other modules. | Visual Studio Code, GitHub  -Self Analysis  -Self Analysis | -We knew the requirements beforehand so we chose top-down programming.  -Decided the possibility of repetitive functions.  -Relevant data was decided according to different screens. | -Started coding after all the design documentation part was done.  . |
| **Testing**  -Level of Testing |  | The Testing is required in majorly every project as we need to identify if the software or the module is working properly or not. If it is efficient enough or not and giving out precise outputs or not. | Testing requires a process which needs to be followed | Its few disadvantages are that:   * it might be draining our resources. * it might take a lot of time to implement the test cases. |  |  |  |
| **Software Project Management**  -Cost Estimation  -Project Scheduling  -Staffing  -Software configuration management  -Risk management  -Quality assurance | -Cost estimation is an important aspect as any project cannot be made without it being financially feasible.  - It is necessary to come up with a feasible schedule for all the members.  -Hiring efficient and right people for the project is necessary for staffing. | -All professional companies chart out the financial feasibility of a project before proceeding with it, hence, this is a very important step.  -A schedule has to be made to complete the project efficiently with optimum use of resources. | -Understanding of current business scenario, economics and finances is a must. It helps in also estimating costs for other real life projects.  -It helps in designing schedule for other projects as well. | -HR members and project team members should be well versed in finances to use resources optimally. | -Self Analysis | -Since we are using all our own resources and open source we have not spent money on the project, so the only thing that needed management was time. | -Zero cost project. |