Mini project-1 description:-

MacroSoft is software Development Company, asked to develop an information system for ***Nike Ltd*** which is a garments company to maintain it's 2500 employees' information. For example- Employee salary, name, Employee-Id, age, gender, joining date, resign date, yearly increment etc. Authority of **Nike Ltd** wants this product within six months and can pay maximum 30 lacks also want to sign a maintenance contract.

Think that you are a Software engineer of **MacroSoft** company. The higher authority of **MacroSoft** Software Company asked you do perform this project to develop a complete information system for **Nike Ltd** garments Company.

Introduction:

As a software engineer of **MacroSoft** Software Company I will choose I will clarify some questions to pick the correct software development model.

- The task is clear.
- The software product has to develop whole then deliver to client.
- The task is simple and big (not very big)
- Time limit six months.
- The propose software can access through online or offline.

So, I will choose Waterfall model to develop this software product. And the steps are:

- Requirement analysis
- System design
- Implementation
- Testing
- Deployment
- Maintenance

1. Requirement analysis

Have to prepare a Project proposal includes the followings-

General requirements:

- (What is being done)The main task of this project is to develop an automation software form the employees of **Nike** to maintain their information and update regular basis.
- (How is it being done) By using waterfall model I will do it.

- (Who is doing it) As a software engineer of Macrosoft Company I am with my team will perform to develop this product.

Users' requirements

Module-1(Employee Information)

- *Unique Employee ID*
- *Name*
- *Age*
- *Gender*
- *Join date*
- *Promotion date*
- *Resign date*
- *Position*
- *address*
- *academic qualifications*

Module-2(Daily attendance)

- *time-in*
- *time-out*

System requirement

Operating System	: Windows Server 3.0.
Programming Languages	: PHP, Java , MySql.
Tools	: XAMPP server.
Data center	: Data center.
No. of Expert	: 10.

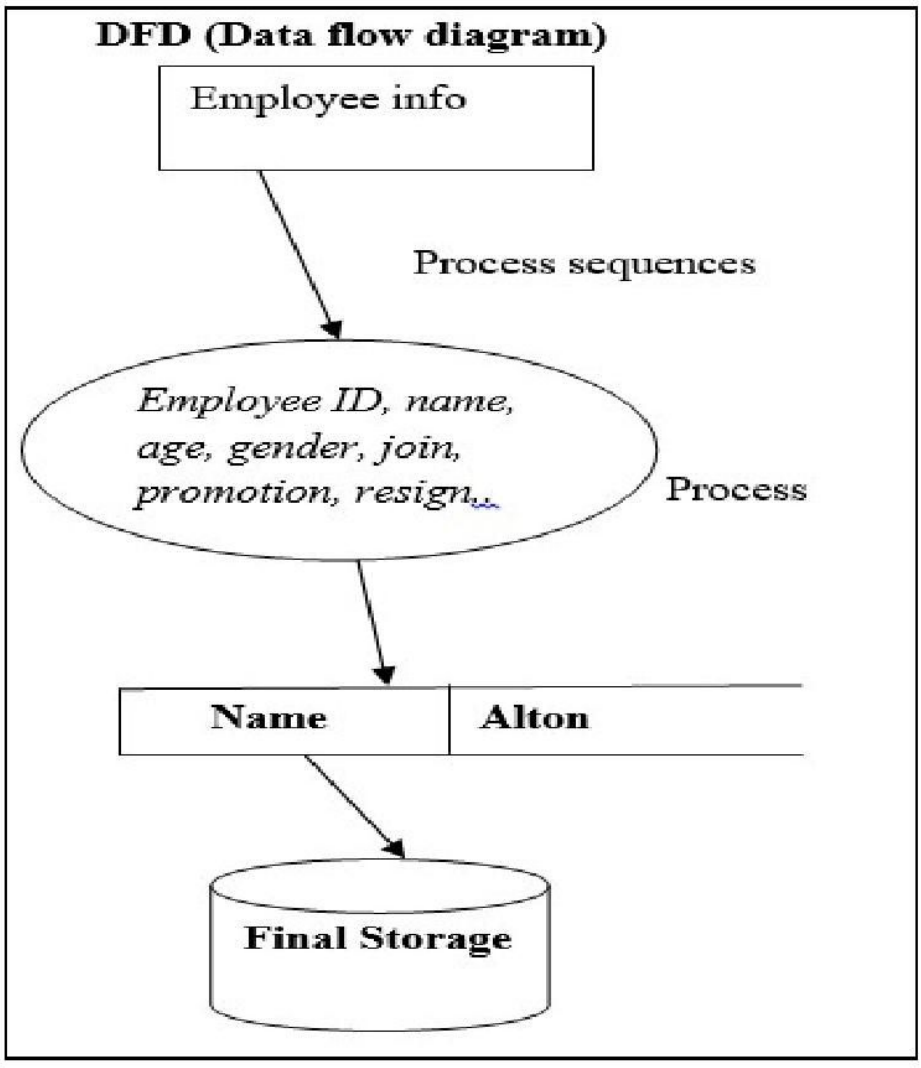
2. System Design

There are several tools and techniques used for describing the system design of the system. I pick the essential tools and techniques from those.

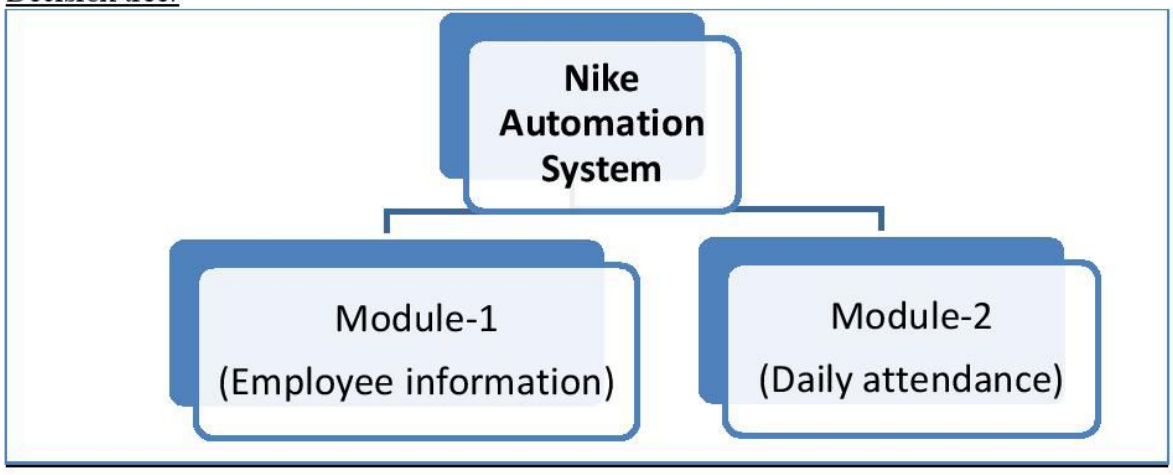
- Structured English.
- Data flow diagram (DFD).
- Decision tree.
- Designing Input/output forms or system input/output.

- Structured English: The whole documentation is in Standard English language format.

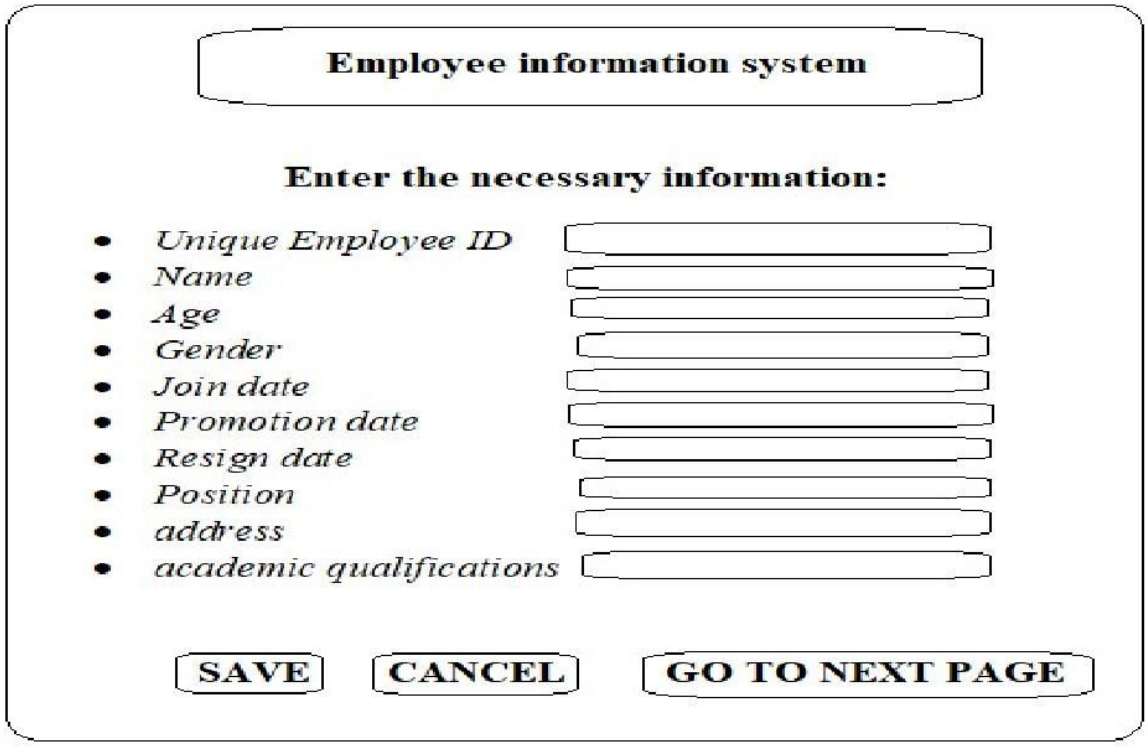
- Data flow diagram (DFD): A data flow diagram for the module-1 mentioned below:



- Decision tree:



- Designing Input/output forms or system input/output.



3. Implementation (Coding)

- As a system analyst I with my team will implement the 'system design phase' to make the system workable.
- So, my team will perform the Implementation/coding using computer programming language.
- The job will be distributed as mentioned below-
  - ✓ Operating System : Windows Server 3.0. = 1 Person + all team member
  - ✓ Programming Languages : PHP = 2 PHP programmer
    Java = 2 Java programmer
    MySql = 2 MySql programmer
  - ✓ Tools : XAMPP server = 1 person + all team member
  - ✓ Data center : Data center = 2 database administrator

So, 10 Personnel for coding.

Program test/Unit Test: When the programs have been coded, compiled and brought to working conditions, they must be individually tested with the prepared test data and when it is error free, then we will go to next phase.

4. Testing (and Integration)

Program Test/Unit Test: Actually we already performed unit testing earlier.

Integration Test: Number of same type code (error free) will be integrated and tested with data again. When no error found will move to System test.

System Test: At this stage the test is done on actual data. The complete system (all programs integrated/merged) is executed on the actual data.

At each stage of the execution, the results or output of the system is analyzed. During the result analysis, it may be found that the outputs are not matching with the expected output of the system. In such case, the errors in the particular programs are identified and are fixed and further tested for the expected output.

When it is ensured that the system is running error-free, the users are called with their own actual data so that the system could be shown running as per their requirements.

5. Deployment

After having the user acceptance of the new system developed, this phase begins. The major steps involved in this phase are:

Acquisition and Installation of Hardware & Software:
The hardware and the relevant software required for running the system must be made fully operational before implementation.

Conversion:
The data from the old system needs to be converted to operate in the new format of the new system. The database needs to be setup with security and recovery procedures fully defined.

User Training: During this phase, all the programs of the system are loaded onto the user's Computer. After loading the system, training of the user starts. Main topics of such type of training are:

- How to execute the package/software
- How to enter the data
- How to process the data (processing details)
- How to take out the reports

Documentation:

- Documentation ensures the continuity of the system.
- Documentation is a complete description of the system from the users point of view detailing how to use or operate the system (User's manual).

6. Maintenance

It has been seen that there are always some errors found in the systems that must be noted and corrected.

Regular contract:
Signed a maintenance contract with the client to check the software twice in every month for next 3 years (extensible) of time period. Each month 10,000/= taka payable.

Contract on call basis: This contract ensures to provide supports twenty-four hours a day for next one year. For each call payable range varies from 20,000 to 40,000 BDT depend on problem issues.

Special Contract: Both the company software company and the client company agreed to sign a special contract for further development (extension) of the product and the payment is negotiable.