**Software Maintenance Overview:**

It stands for all the modifications and updates done after the delivery of software product.

**Types of Maintenance:**

* **Corrective:** This includes modifications and updates done in order to correct or fix problems, which are either discovered by user or concluded by user error reports.
* **Adaptive:** This includes modifications and updates applied to keep the software product up-to date and tuned to the ever changing world of technology and business environment.
* **Perfective:** This includes modifications and updates done in order to keep the software usable over long period of time. It includes new features, new user requirements for refining the software and improve its reliability and performance.
* **Preventive:** This includes modifications and updates to prevent future problems of the software. It aims to attend problems, which are not significant at this moment but may cause serious issues in future.

**Activities during Maintenance:**

* **Identification and Tracing:** It involves activities pertaining to identification of requirement of modification or maintenance. It is generated by user or system may itself report via logs or error messages.
* **Analysis:** The modification is analyzed for its impact on the system including safety and security implications. If probable impact is severe, alternative solution is looked for. A set of required modifications is then materialized into requirement specifications. The cost of modification/maintenance is analyzed and estimation is concluded.
* **Design:** New modules, which need to be replaced or modified, are designed against requirement specifications set in the previous stage. Test cases are created for validation and verification.
* **Implementation:** The new modules are coded with the help of structured design created in the design step. Every programmer is expected to do unit testing in parallel.
* **System testing:** Integration testing is done among newly created modules. Integration testing is also carried out between new modules and the system. Finally the system is tested as a whole, following regressive testing procedures.
* **Acceptance Testing:** After testing the system internally, it is tested for acceptance with the help of users.
* **Delivery:** After acceptance test, the system is deployed all over the organization either by small update package or fresh installation of the system. The final testing takes place at client end after the software is delivered.

**Difference in Maintenance activities of product developed for open market and a particular client:**

|  |  |
| --- | --- |
| **open-market** | **Particular Client** |
| * Adaptive maintenance is a must during time as along time new technology take over the market so one has to adapt the changes. | * No need to think much about maintenance as we have delivered the product and we were responsible for product working with old technology itself. |
| * Maintenance is not bound to time from some particular individual and software firm don’t have pressure to update the version in short amount of time, it’s a gradual process as users are rotting out of old design. | * If product is for particular client then maintenance time will be according to his will whether s/he can wait for that particular time or not. |
| * Acceptance testing is done by friendly customers. | * Acceptance testing is performed by client or his employees/users. |

**Preferences:**

<https://www.tutorialspoint.com/software_engineering/software_maintenance_overview.htm>