**1.Who have the highest salary in each of the departments?**

SELECT DepartmentID, MAX(Salary)

FROM Employee

GROUP BY DepartmentID

SELECT DepartmentName, MAX(Salary)

FROM Employee e RIGHT JOIN Department d ON e.DepartmentID = d.DepartmentID

GROUP BY DepartmentName

**2. Explain API testing approach**

**What is API?**

API is an acronym for Application Programming Interface. It helps to communicate and exchange data between two separate software systems. That software system contains functions which can be executed by another software system too.  Each time you use an app like Facebook, send an instant message, or check weather on your phone, you are using an API.

**API testing: -**

API Testing mainly concentrates on the business logic layer of the software architecture. In API Testing, we use software to send calls to the API, gets output, and note down the system's response.

API Testing requires an application to interact with API. To test an API, we use Testing Tool (like postman) to drive the API and then write our own code to test the API.

To set-up API Test environment, we are required to setup initial environment that invokes API with required set of parameters and finally examines the test result. The database and server should be configured as per the application requirements. Once the installation is done, API Function should be called to check whether that API is working for web application testing services.

**Following points helps the tester to use API Testing approach:**

* Understanding the functionality of the API program and clearly define the scope of the program.
* Apply testing techniques such as equivalence classes, boundary value analysis and error guessing
* write test cases for the API.
* Input Parameters for the API need to be planned and defined appropriately.
* Execute the test cases and compare expected and actual results.

**3.Explain API testing and Unit Testing**

**API testing:**

* API testing is basically black box testing which is simply concerned with the final output of the system under test.
* API tests are executed only after the build is ready. (an API test can just be a part of unit testing because it is itself a unit of a complete software application.)
* API testing must portray the system as a whole as it is the user interface that an end user will interact with.

**Unit testing:**

* Unit testing aims to verify whether the module delivers the required functionality. The development team monitors unit testing activity and makes necessary changes wherever required. It is also called as component testing.
* Unit test code or test script is written by the developers (automation testing).
* Unit testing is nothing but testing all individual components, classes, subroutines, and sub programs. Means it will test both positive and negative sides of application according to the requirements.
* A major emphasis is on the fact whether each unit or module works perfectly fine in isolation. That is, dependency should be least to ensure a robust module design.

**4. Test plan for Post feature in Facebook**

**Test plan Identifier:**

Facebook\_24

**References:**

This section is to specify all the list of documents.

Use Case Documents, Test Strategy, Project Guidelines etc.,

**Introduction:**

The objective of this document is to test the functionality of the ‘Facebook\_24’

**Test Items:**

Testing should be done on back end and front end of the application on the Windows/Linux environments.

**Features to be Tested:**

The features which are to be tested are post, comment, like, Timeline.

**Features not to be Tested:**

Payment for login users feature is removed from the application. There is no need to test this feature.

**Approach:**

We follow Agile methodology in this project. First go with function testing, after that Regression testing and later sanity testing.

**Pass/Fail Criteria:**

All major functionality of the application should work as intended and the pass percentage of test cases should be more than 95% and there should not be any critical bugs.

**Suspension Criteria:**

If any of the major functionalities are not functional or system experiences posting issues, then testing should suspend.

**Test Deliverables:**

Test cases, Bug report documents need to be delivered at each phase of testing life cycle.

**Testing tasks:**

Test environment should be ready prior to test execution phase. Test summary report needs to be prepared.

**Environmental needs:**

A PC(Computer) with wifi is needed for a test environment.

**Responsibilities:**

Test plan should be prepared by test lead. Preparation and execution of tests should be carried out by testers.

**Staffing and Training Needs:**

Plan training course to improve the skills of resources in the project to achieve the desired goals.

**Schedule:**

Perform test execution -120-man hours, Test reporting-30-man hours.

**Risks and Contingencies:**

Risk-In case of a wrong budget estimation, the cost may overrun.

Contingency plan- Establish the scope before beginning the testing tasks and pay attention in the project planning and also track the budget estimates constantly.

**Approvals:**

Project manager should agree on completion of the project and determine the steps to proceed further.