**ỦY BAN NHÂN DÂN THÀNH PHỐ HỒ CHÍ MINH**

**TRƯỜNG ĐẠI HỌC SÀI GÒN**

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**BÀI TẬP 4**

**BÀI TẬP TRẮC NGHIỆM**

**VÀ TEST PLAN CHO DỰ ÁN ABC**

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# **PHÂN CÔNG CÔNG VIỆC**

| Thành viên | Nhiệm vụ chính | Chi tiết công việc | Ghi chú |
| --- | --- | --- | --- |
| Quân | Test Manager | Viết Introduction + Resources + Project Milestones |  |
| Huy | Test Designer | Viết Features to be tested / not to be tested |  |
| Ty | Test Engineer | Viết Test Strategy (Testing types, Tools, Test environment) |  |
| Hương | QA/Analyst | Viết Deliverables + Appendix (Project Tasks, Reporting, Defect tracking) |  |
| Cả nhóm | Trắc nghiệm |  |  |

# **TRẮC NGHIỆM**

***1. Why do you need to have a test plan? (1 score)***

a. Provide the information about the testing process followed in the organization.

b. Collect and organize necessary test information.

c. Give right directions to all members in team as well as have clear responsibilities of members.

d. Have clear schedule and member can work well together

e. All above are correct

f. Just c and d are correct

***Giải thích:***Test plan cung cấp thông tin quy trình test, tập hợp tài liệu cần thiết, định hướng rõ ràng, phân công trách nhiệm, và giúp làm việc nhóm hiệu quả.

***2. When do we need test plan? (1 score)***

a. As soon as possible from beginning of project and we have enough information for project.

b. Nearly end of project to verify everything before delivery product to client.

c. Right after project sign off.

d. Anytime is fine

***Giải thích****:* Test plan cần được chuẩn bị sớm để định hướng và quản lý kiểm thử từ đầu dự án.

***3. Who will create test plan? (1 score)***

a. Developer lead

b. QC lead

c. Project manager

d. All above are correct

e. b and c are correct

***Giải thích:***Thông thường QC/Test lead là người lập test plan, nhưng Project Manager cũng tham gia duyệt và hỗ trợ.

***4. How to baseline Test Plan? (1 score)***

a. Review it with developers and QC team

b. Review it with whole team including client and get approval from PM and Client.

c. Review it with QC team only and announce to Client for approval.

d. Review it with Project manager and ask him to approve.

***Giải thích:*** Cần xem xét với toàn bộ team, kể cả client để đảm bảo thống nhất và chính thức baseline.

***5. During testing life cycle, Test plan can be (1score)***

a. Updated if there is anything changed with approval.

b. Not be updated as it is really base lined.

c. Cancelled and created new one if we find out other good template.

d. None of above is correct.

***Giải thích***: Test plan là tài liệu sống, có thể chỉnh sửa khi có thay đổi nhưng phải được phê duyệt.

***6. With features that will not be tested (1 score)***

a. Does not need to list them out, the list of features will be tested is enough.

b. Just list them out without explanation as Client already has awareness of them.

c. List them out with explanations for sure that we (Test team and Client) are on the same page.

d. None of above is correct.

***Giải thích:*** Liệt kê và giải thích rõ để tránh hiểu nhầm giữa client và team test.

***7. Reviewing schedule in test plan will (1 score)***

a. Help each members understand his/her tasks

b. Help all team on the same page, and also help leader assigns tasks to each

members accurately

c. Help to understand where we are in project and so have appropriately actions

need in cases there are many issues.

d. All above.

***Giải thích:*** Giúp hiểu nhiệm vụ, đồng bộ team, phân công chính xác và theo dõi tiến độ.

***8. Build note from developer side to QC side, what is it? (1 score)***

a. Document describes what features had been implemented and ready for test.

b. All work around solutions needed to test the current build

c. A warning document to QC side so that developer can skip some features

d. All above

e. Just a and b

***Giải thích:*** Build note mô tả tính năng đã implement, kèm work-around để QC biết test chính xác.

***9. Test environment section will not be necessary because (1 score)***

a. When join to company, each member had been setup specified OS and will not

be changed. So s/he only uses it for the testing.

b. The environment is already listed out in the schedule for testing.

c. Just leader/ Project managers need it and it is mentioned in other document

d. None of above is correct.

***Giải thích***: Mục Test environment luôn cần thiết để đảm bảo môi trường test thống nhất và có thể tái hiện kết quả.

***10. Acceptance criteria is (1 score)***

a. Set of conditions that the UAT build had been satisfied before accepting by client

b. Set of conditions that the UAT build had been satisfied before accepting by QC team

c. None of above is correct.

***Giải thích***: Acceptance criteria là điều kiện để client chấp nhận sản phẩm, không phải chỉ team QC.

**ABC project**

**Test Plan**

**Version 1.4**

**Revision History**

| **Date** | **Version** | **Description** | **Author** |
| --- | --- | --- | --- |
| 05 Aug 10 | 1.0 | Initial edition | Alexandre Stelmakh |
| 30 Sep 2025 | 1.1 | Adapted Test Plan for ABC Project – Introduction, Scope, References | Đỗ Minh Quân |
| 30 Sep 2025 | 1.2 | Added Features to be tested / not tested | Trần Vĩnh Huy |
| 01 Oct 2025 | 1.3 | Updated Test Strategy, Tools, Resources | Lê Thị Mỹ Hương |
| 01 Oct 2025 | 1.4 | Finalized Deliverables, Milestones, Appendix | Trần Bùi Ty Ty |

**Test Plan**

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to define the Test Strategy and QA process for the **ABC Project**. It establishes the System Test Plan, including test scope, approach, resources, and deliverables, to ensure the ABC application is tested effectively. This will help all stakeholders coordinate efforts and achieve a high-quality release on schedule.

## 1.2 Background

The current **ABC Project** is an instant messenger for the Palm platform, designed to support the **ICQ instant messaging service**, therefore the protocol used by ICQ must be fully supported. The system is targeted for the Palm application market and is positioned as a standalone product.

The main objective of this Test Plan is to define the methodology to test the ABC application to check and ensure that:

* The new system preserves all of its current messaging functionalities.
* The enhancements have been implemented correctly in the new system.
* The newer enhancements do not adversely affect the existing functionalities.
* The system has the flexibility and capacity to deal with complex communication requirements and potential future changes.

## 1.3 Scope

### 1.3.1 Scope

The following table lists the various phases of **ABC Project** application testing and the team responsible for it.

| **Phases** | **Team Responsible** |
| --- | --- |
| Unit Testing | Development Team |
| Integration Testing | Testing team |
| System Testing | Testing team |
| User Acceptance Testing | ABC Project User Representatives |

### 1.3.2 Testing Type

International-kids.com application will undergo the following types of testing. All types of testing are explained in detail under Test Strategy section

| **Activity** | **Team Responsible** |
| --- | --- |
| Functionality Testing | Performed by testing team during Integration/System testing phase to meet agreed upon functional requirements of **ABC Project** application.  Following Functional areas will be put to test: (1) Application Submission (2) Peer Review. All the features put under test are mentioned in brief under “Features to be tested” section in this plan.  All the features put under test will be described in detail in Test Scenario documents and Test case documents. On completion of every single functional area, test scenario and test case documents will be delivered. Please refer to Deliverables section mentioned below. |
| Database Testing | Performed by testing team during Integration/System testing phase to qualify database which houses the content that the **ABC Project** application manages, run queries and fulfill user requests for data storage  Database migration testing will be taken care by DBA’s |
| Security Testing | Performed by testing team during Integration/System testing phase to meet agreed upon Security requirements of **ABC Project** application |
| GUI and Usability Testing | Performed by testing team during Integration/System testing phase |
| Performance and  Load /Volume Testing | Performed by testing team during System Testing phase.  Automation testing will be performed to carry out these types of testing.  **<Tool name to be decided/updated>** tool will be used to perform these tests.  Various Reports that are part of **ABC Project** Application will be one of the main areas while performing load/volume testing  **Performance test methodology**. |
| Code Testing | Performed by development team during Unit Testing phase at every method level. |
| Smoke Testing | Performed by development team during Unit Testing phase for qualifying the build for releasing it to Testing team.  Performed by Testing team during Integration/System phase for qualifying the build for further tests. |
| Regression Testing | Performed by testing team during Integration/System testing phase for re-testing an entire or partial system after a modification has been made to ensure that no unwanted changes were introduced to the system. |
| Defect fix verification testing/Defect validation testing) | Performed by testing team during Integration/System testing phase for verifying the defect fixes |
| Compatibility Testing | Performed by testing team during Integration/System testing phase to test the compatibility with respect to base configuration  (a) Browser (IE 6.0), O.S. (Win XP)  (b) Mozilla fire fox( ), O.S (Win XP)  (c) Opera ( ), O.S (Win XP)  Certification testing will be performed on following combinations :  Browser (IE 7.0), O.S (Win XP) |
| Interface Testing   * Sign on | Performed by Development team during Unit testing phase  Performed by testing team during Integration/System testing phase and  Performed by International-kids.com team during UAT phase in order to have a complete test.  PA testing team will be responsible for testing this functionality by accessing **ABC Project** -QA environment |
| Adhoc Testing | Performed by Testing team during Integration/System testing phase to test the (1) Navigations that are unusual and (2) Negative scenarios within and across the components. |

## *1.4 Project Identification*

The table below identifies the documentation and availability used for developing the *Test Plan*:

| **Document**  **(and version /date)** | **Created or Available** | **Received or Reviewed** | **Author or**  **Resource** | **Notes** |
| --- | --- | --- | --- | --- |
| Requirements Specification | **** Yes  No | **** Yes  No |  |  |
| Functional Specification | **** Yes  No | **** Yes  No |  |  |
| Use-Case Reports | **** Yes  No | **** Yes  No |  |  |
| Project Plan | **** Yes  No | **** Yes  No |  |  |
| Design Specifications | **** Yes  No | **** Yes  No |  |  |
| Prototype |  Yes  No |  Yes  No |  |  |
| User’s Manuals |  Yes  No |  Yes  No |  |  |
| Business Model or Flow |  Yes  No |  Yes  No |  |  |
| Data Model or Flow |  Yes  No |  Yes  No |  |  |
| Business Functions and Rules | **** Yes  No | **** Yes  No |  |  |
| Project or Business Risk  Assessment |  Yes  No |  Yes  No |  |  |

## *1.5 References*

The following table contains references to external documents.

| **No.** | **Document** | **Description** |
| --- | --- | --- |
| 1 | ABC project Software Requirements Specification, Version 1.0.3.3, Monday, 25/Aug/10 | The **SRS** fully describes the external behavior of the application or subsystem identified. It also describes non-functional requirements, design constraints, and other factors necessary to provide a complete and comprehensive description of the software requirements. |
| 2 | ABC project Software Development Plan, Version 1.0.5, 05/Sep/10 | The purpose of Software Development Plan is to define tasks of ABC project (hereinafter referred to as IM or the project) to be developed. It focuses on the capabilities sought after by stakeholders, the target users in particular, and the reasons for this search. |

# 2. Feature to be tested

The listing below identifies those items − use cases, functional requirements, and non-functional requirements − that have been identified as targets for testing. This list represents what is to be tested.

| 1. General requirements | * 2.2.20 Display support * 2.2.21 Maximum message length |
| --- | --- |
| 2. Roles | * 2.2.1 Setup a user account * 2.2.2 Remove user account * 2.2.11 Change current account |
| 3. Site entry / exit | * 2.2.3 Connect and disconnect to ICQ service * 2.2.16 Automatic logon on application startup * 2.2.19 Internet connection management |
| 4. Contact List Management | * 2.2.4 Download contact list from server * 2.2.5 Upload contact list to server * 2.2.6 Add new contact to contact list * 2.2.7 Delete contact from contact list |
| 5. UI/UX Enhancements | * 2.2.15 Fonts support |
| 6. General Administration | * 2.2.10 Change connection status * 2.2.12 Change user status into idle * 2.2.14 Sessions support |
| 7. Email Functions | * 2.2.8 Create new message * 2.2.9 Receive new message * 2.2.13 Message history * 2.2.17 Audible and flashing alerts * 2.2.18 Graphical emoticons |

## *2.1 Functionality*

### **2.1.1** Setup a user account

* **Description**: User can set up and configure an account.
* **Pre-condition**: ICQ service is available.
* **Test Scenarios**:

1. Verify automatic contact list download upon login.
2. Verify option to disable automatic download.
3. Verify manual download when requested.

* **Expected Results**: Account setup works and contact list is synchronized as configured.
* **Effort**: Design TC: 5, Execution: 5.

### **2.1.2** Remove user account

* **Description**: User can delete their account.
* **Pre-condition**: Account exists in the system.
* **Test Scenarios**:

1. Verify account deletion for valid account.
2. Verify error when deleting non-existing account.
3. Verify related data is handled properly after deletion.

* **Expected Results**: Account is removed successfully or an appropriate error is shown.
* **Effort**: Design TC: 5, Execution: 5.

### **2.1.3** Connect and disconnect to ICQ service

* **Description**: User can connect and disconnect from ICQ service.
* **Pre-condition**: Internet connection is available.
* **Test Scenarios**:

1. Verify successful connection with valid credentials.
2. Verify error handling with invalid credentials.
3. Verify proper disconnection.

* **Expected Results**: Connection status is updated correctly.
* **Effort**: Design TC: 3, Execution: 5.

### **2.1.4** Download contact list from server

* **Description**: System downloads contact list from server.
* **Pre-condition**: User is logged in.
* **Test Scenarios**:

1. Verify automatic download after login.
2. Verify disabling automatic download.
3. Verify manual download when requested.

* **Expected Results**: Contact list is synchronized properly.
* **Effort**: Design TC: 8, Execution: 8.

### **2.1.**6Add new contact to contact list

* **Description**: Add a new contact into the list.
* **Pre-condition**: User logged in.
* **Test Scenarios**:

1. Verify adding a valid new contact.
2. Verify duplicate contact is not allowed.
3. Verify proper validation of contact info.

* **Expected Results**: Contact is added successfully.
* **Effort**: Design TC: 10, Execution: 10.

### 2.1.7 Delete contact from contact list

* **Description**: Remove a contact from the list.
* **Pre-condition**: Contact exists.
* **Test Scenarios**:

1. Verify deletion of an existing contact.
2. Verify error handling for non-existing contact.

* **Expected Results**: Contact is removed correctly.
* **Effort**: Design: 10, Execution: 10.

### 2.1.8 Create new message

* **Description**: Compose and send a new message.
* **Pre-condition**: User logged in.
* **Test Scenarios**:

1. Verify sending a valid message.
2. Verify error handling when sending an empty message.

* **Expected Results**: Message is created and sent successfully.
* **Effort**: Design TC: 6, Execution: 3.

### 2.1.9 Receive new message

* **Description**: Receive incoming messages.
* **Pre-condition**: User logged in, network connected.
* **Test Scenarios**:

1. Verify receiving a valid incoming message.
2. Verify notification is shown for new message.

* **Expected Results**: Messages are displayed fully and correctly.
* **Effort**: Design: 6, Execution: 3.

### 2.1.10 Change connection status

* **Description**: User changes connection status (online/offline).
* **Pre-condition**: User logged in.
* **Test Scenarios**:

1. Verify switching from online to offline.
2. Verify switching from offline to online.

* **Expected Results**: Status updates correctly.
* **Effort**: Design: 6, Execution: 6.

### 2.1.11 Change current account

* **Description**: Switch between multiple user accounts.
* **Pre-condition**: At least two accounts exist.
* **Test Scenarios**:

1. Verify switching account successfully.
2. Verify the previous session is closed correctly.
3. Verify correct data for the new account is displayed.

* **Expected Results**:The active account is changed properly.
* **Effort:** Design: 6, Execution: 6.

### 2.1.12 Change user status into idle

* **Description**: System automatically sets status to idle after inactivity.
* **Pre-condition**: User logged in but inactive.
* **Test Scenarios**:

1. Verify auto-idle after configured time.
2. Verify returning to active upon user action.

* **Expected Results**: Idle function works correctly.
* **Effort:** Design: 6, Execution: 3.

### 2.1.13 Message history

* **Description**: Store and display message history.
* **Pre-condition**: Previous messages exist.
* **Test Scenarios**:

1. Verify conversation history is saved correctly.
2. Verify messages are shown in chronological order.

* **Expected Results**: History is complete and accurate.
* **Effort:** Design: 4, Execution: 2.

### 2.1.14 Sessions support

* **Description**: Support multiple sessions in the system.
* **Pre-condition**: Multiple sessions are open.
* **Test Scenarios**:

1. Verify multiple sessions can run simultaneously.
2. Verify logging out from one session does not affect others.

* **Expected Results**: Sessions work independently.
* **Effort:** Design: 4, Execution: 6.

### 2.1.15 Fonts support

* **Description**: Support changing fonts for display.
* **Pre-condition**: User logged in.
* **Test Scenarios**:

1. Verify changing font successfully.
2. Verify correct rendering after font change.

* **Expected Results**: Fonts display properly without issues.
* **Effort:** Design: 2, Execution: 1.

### 2.1.16 Automatic logon on application startup

* **Description**: The system should log in automatically if enabled.
* **Pre-condition**: Auto-login option is enabled.
* **Test Scenarios**:

1. Verify automatic login when enabled.
2. Verify no auto-login when disabled.
3. Verify handling when saved credentials are invalid.

* **Expected Results**: Auto-login works as configured.
* **Effort:** Design: 2, Execution: 2.

### 2.1.17 Audible and flashing alerts

* **Description**: Alerts with sound and flashing icons for new messages.
* **Pre-condition**: Incoming message is received.
* **Test Scenarios**:

1. Verify sound alert for new message.
2. Verify flashing icon is displayed.
3. Verify user can disable alerts.

* **Expected Results**: Alerts function properly with toggle option.
* **Effort:** Design: 2, Execution: 4.

### 2.1.18 Graphical emoticons

* **Description**: Support emoticons in messages.
* **Pre-condition**: User composes/sends a message.
* **Test Scenarios**:

1. Verify sending emoticons successfully.
2. Verify emoticons render correctly on receiver’s side.

* **Expected Results**: Emoticons are displayed properly.
* **Effort:** Design: 2, Execution: 2.

### 2.1.19 Internet connect management

* **Description**: User can connect and disconnect from ICQ service.
* **Pre-condition**: Internet connection is available.
* **Test Scenarios**:

1. Verify successful connection with valid credentials.
2. Verify error handling with invalid credentials.
3. Verify proper disconnection.

* **Expected Results**: Connection status is updated correctly.
* **Effort:** Design: 2, Execution: 3.

### 2.1.20 Display support

* **Description**: The system should display correctly on different resolutions and devices.
* **Pre-condition**: The application is installed.
* **Test Scenarios**:

1. Verify correct display on large and small screens.
2. Verify no UI distortion when resizing the window.
3. Verify correct rendering of fonts and colors.

* **Expected Results**: The interface is displayed correctly without visual errors.
* **Effort:** Design: 2, Execution: 3.

### 2.1.21 Maximum message length

* **Description**: The system should enforce a maximum message length.
* **Pre-condition**: User is logged in.
* **Test Scenarios**:

1. Verify sending a message within the character limit.
2. Verify failure when exceeding the limit.
3. Verify appropriate error message.

* **Expected Results**: Messages are restricted correctly, with proper error handling.
* **Effort:** Design: 1, Execution: 1.

## *2.2 Usability*

### 2.2.1 Sessions support

* **Description**: Verify that session handling is user-friendly and does not disrupt the user experience.
* **Pre-condition**: User is logged into the system.
* **Test Scenarios**:

1. Verify that session timeout gives a clear warning before logout.
2. Verify that the user can easily re-login without losing important work.
3. Verify that multiple sessions are managed consistently without confusion.

* **Expected Results**:
  + Clear notification before session expiry.
  + Smooth re-login experience.
  + No unexpected loss of data during session timeout.

### 2.2.2 Fonts support

* **Description**: Verify that fonts are readable, clear, and consistent across the application.
* **Pre-condition**: User opens the application interface.
* **Test Scenarios**:

1. Verify default font size and style are readable.
2. Verify users can change font settings without breaking layout.
3. Verify font rendering is consistent across different devices and resolutions.

* **Expected Results**:
  + Text is easy to read.
  + Font changes apply smoothly.
  + No overlapping, clipping, or misaligned text.

### 2.2.3 Graphical emoticons

* **Description**: Verify that graphical emoticons are intuitive, easy to insert, and display correctly.
* **Pre-condition**: User is in an active chat session.
* **Test Scenarios**:

1. Verify emoticons are easy to find and select.
2. Verify selected emoticon displays correctly in the chat window.
3. Verify emoticons render properly on both sender and receiver sides.

* **Expected Results**:
  + Emoticons are visually clear and recognizable.
  + Inserting emoticons is intuitive.
  + No distortion or misalignment in chat display.

### 2.2.4 Internet connection management.

* **Description**: Verify that internet connection handling is clear and user-friendly.
* **Pre-condition**: User has a network connection.
* **Test Scenarios**:

1. Verify that the system provides a clear status when connection is lost.
2. Verify that reconnection attempts are automatically handled or easily initiated by the user.
3. Verify user receives clear feedback during slow or unstable connections.

* **Expected Results**:
  + Connection status is clearly indicated.
  + User can reconnect without confusion.
  + System gracefully handles unstable connections.

### 2.2.5 Display support

* **Description**: Verify that display settings provide a clear, consistent, and user-friendly interface.
* **Pre-condition**: User accesses the application on different screen sizes.
* **Test Scenarios**:

1. Verify the interface adapts to different screen resolutions.
2. Verify UI elements (buttons, text, icons) are properly aligned.
3. Verify contrast and color scheme make content easily visible.

* **Expected Results**:
  + Application layout is consistent and clean.
  + No overlapping or misplaced UI elements.
  + Content is visible and accessible to users.

## *2.3 Design Constraints*

### 2.3.1 Maximum message length

* **Description:** Each user message must not exceed 255 characters.
* **Test relevance:** Testers need to create boundary test cases:
  + Input < 255 characters → system accepts.
  + Input = 255 characters → system accepts.
  + Input > 255 characters → system rejects or truncates.

### 2.3.2 Test environment

* **Description:** The system must be tested under predefined environments.
* **Examples:**
  + Operating Systems: Windows 11, Ubuntu 22.04.
  + Browsers: Chrome (v120+), Edge (v118+).
  + Devices: PC, Mobile (Android 12, iOS 16).
* **Test relevance:** Ensures that test cases are executed in the specified environments to avoid false results due to environment differences.

### 2.3.3 Characters

* **Description:** The system must only support English characters (A–Z, a–z), numbers (0–9), and standard punctuation.
* **Test relevance:**
  + Input valid English letters and numbers → system accepts.
  + Input special characters such as ! ? , . ; : → system accepts.
  + Input non-English characters (e.g., Vietnamese accents, Chinese, Japanese, emoji) → system rejects or displays error message.
  + Verify consistent behavior across browsers and devices.

## *2.4 Interfaces*

### 2.4.1 User Interfaces

* **Description:** The system should provide a consistent and user-friendly interface that allows users to easily navigate, interact, and access all functionalities. The user interface must comply with the design specifications and usability guidelines.
* **Pre-condition:** The application is installed and running on the supported environment.
* **Test Scenarios:**
  + Verify that all menus, buttons, and icons are displayed according to the design.
  + Verify that the user interface is consistent across different screens.
  + Verify that fonts, colors, and layouts meet usability requirements.
  + Verify that the interface adapts correctly to different resolutions or display sizes.
  + Verify that all input fields, forms, and dialogues are functional and user-friendly.
* **Expected Results:**
  + The user interface is intuitive, consistent, and complies with the design specifications.
  + All UI elements function as expected.
  + No major usability issues are observed.

# 3. Feature not to be tested

## *3.1. Voice and video communication*

* The ABC system only supports instant messaging (ICQ) and does not support voice or video call features → not tested.

## *3.2. Integration with other protocols and platforms*

* Only ICQ protocol is supported; MSN, Yahoo Messenger, or other instant messaging services are not tested.
* No testing on other platforms such as iOS, Android, Windows.
* Runs only on Palm OS 3.5 – 5.0, Palm Emulator, Palm OS 5 Simulator

***3.3. Advanced security features***

* No testing for advanced encryption or multi-factor authentication (MFA).
* Only basic login/password authentication will be tested.

***3.4. Performance and stress testing beyond scope***

* No load or stress testing with thousands of concurrent users due to Palm platform limitations.
* Only individual or small-scale user testing will be performed.

# 4. Test Strategy

## *4.1 Testing Types*

The overall test strategy for the ABC Project is to perform functional and usability testing on the instant messaging application developed for Palm OS. The testing approach will focus on verifying that all specified features are implemented correctly and that the application is stable and usable on supported environments.

### **4.1.1 Function and Usability Testing**

| Test Objective: | To ensure proper target-of-test functionality, including navigation, data entry, processing, and retrieval. |
| --- | --- |
| Technique: | Execute each use case, use-case flow, or function, using valid and invalid  data, to verify the following:  • The expected results occur when valid data are used.  • The appropriate error or alert messages are displayed when invalid data  are used. |
| Completion Criteria: | • All planned tests have been executed.  • All identified defects have been fixed. |
| Special Considerations: | Test execution may be affected by the availability and stability of Palm OS Emulator/Simulator and ICQ server connection. |

### **4.1.2 User Interface Testing**

| Test Objective: | To verify that the user interface is consistent, usable, and correctly displayed across Palm OS 3.5 – 5.0, Emulator, and Simulator environments. |
| --- | --- |
| Technique: | • Check screen layout, fonts, graphical emoticons, and message display.  • Verify that audible and flashing alerts are triggered correctly.  • Validate that the application is easy to navigate and responsive to user input. |
| Completion Criteria: | • No major UI-related defects remain unresolved.  • User interface complies with design specifications and provides acceptable usability. |
| Special Considerations: | Differences in Palm OS versions (3.5 to 5.0) and device display limitations may impact test results. |

### 4.1.3 Regression Testing

| Test Objective: | To ensure that recent changes (bug fixes, enhancements) have not negatively impacted existing functionality of the ABC Project instant messaging application. |
| --- | --- |
| Technique: | • Re-execute previously passed test cases after code changes.  • Focus on critical functionalities: login, messaging, contact list operations.  • Automate repetitive regression test cases where possible. |
| Completion Criteria: | • All regression test suites have been executed.  • No critical defects introduced by recent changes remain unresolved. |
| Special Considerations: | Regression scope depends on the release build and defect areas. Limited by Palm OS emulator performance and test time window. |

### 4.1.4 Compatibility Testing

| Test Objective: | To verify that the ABC Project application functions correctly across supported Palm OS versions, emulators, and selected browsers. |
| --- | --- |
| Technique: | • Execute functional test cases on multiple Palm OS versions (3.5 – 5.0).  • Validate UI consistency on Palm Emulator and Simulator.  • Test compatibility with supported browsers (IE 6/7, Mozilla Firefox, Opera on Windows XP). |
| Completion Criteria: | • Application behaves consistently across supported platforms.  • No major functional or UI issues specific to one environment remain open. |
| Special Considerations: | Some Palm devices/emulators may have hardware limitations (screen size, memory). Browser testing scope is limited to specified versions. |

### 4.1.5 Smoke / Sanity Testing

| Test Objective: | To quickly verify that the main functionalities of the ABC Project build are stable enough for further testing. |
| --- | --- |
| Technique: | • Run a small set of high-level test cases covering login, contact list synchronization, and message sending/receiving.  • Verify build installation and basic connectivity to ICQ service. |
| Completion Criteria: | • All critical smoke test cases have passed.  • Build is declared stable for full functional/regression testing. |
| Special Considerations: | Smoke testing is mandatory for every new build before starting full test execution. Failures in smoke test may block further testing until resolved. |

## *4.2 Tools*

The following tools are employed in this project:

| **Tool** | **Vendor/In-house** | **Version/Notes** |
| --- | --- | --- |
| Bug Tracking | Mantis (Open Source) | N/A |
| Project Management | Microsoft MS Project | N/A |
| Test Case Management | TestLink (Open Source) hoặc Excel Template | N/A |
| Automation Testing | Selenium (Web UI) / Appium (Mobile) | N/A |
| Performance/Load Testing | Apache JMeter (Open Source) | For load testing messaging & connection |
| Unit Testing (Dev team) | JUnit / NUnit | For code-level unit tests |
| Version Control | Git / SVN | To manage code & test scripts |

# 5. Resources

## *5.1 Roles*

This table shows the staff required for the project.

| **Human Resources** | | |
| --- | --- | --- |
| Employee | Minimum Resources Recommended  (number of full-time roles allocated) | Specific Responsibilities/Job Description |
| Test Developer |  | Identifies, sets priorities for, and implements test cases.  Responsibilities:  • generates test plan  • evaluates effectiveness of test effort |
| Tester |  | Executes tests.  Responsibilities:  • develops test case specifications  • develops test cases  • executes tests  • logs results  • monitors bug fixing  • requests for documentation to be changes |

# 6. Project Milestones

Test activities and milestones are very much dependent upon the development iterations. The Construction Phase is split into 3 builds, release candidate and release version. Each build contains a full test cycle of test planning,design, development, execution, and evaluation.

The following table shows Test Milestones. effort, start date, and end date.

| **Milestone Task** | **Effort** | **Start Date** | **End Date** |
| --- | --- | --- | --- |
| Build 1  Plan Test  Design Test  Execute Test  Evaluate Test | 123.7 | 07/Sep/2010 | 07/Sep/2010 |
| Build 2  Plan Test  Design Test  Execute Test  Evaluate Test | 140.5 | 15/Sep/2010 | 22/Sep/2010 |
| Build 3  Plan Test  Design Test  Execute Test  Evaluate Test | 150.0 | 23/Sep/2010 | 30/Sep/2010 |
| Release Candidate (RC)  Regression Test  Compatibility Test  Evaluate Readiness | 80.0 | 01/Oct/2010 | 04/Oct/2010 |
| Final Release  UAT Support  Acceptance Testing  Final Evaluation & Sign-off | 60.0 | 05/Oct/2010 | 07/Oct/2010 |

# 7. Deliverables

## *7.1 Test Model*

Test Model defines all test cases, and references, test procedures and test scripts which are associated with each test case.

## *7.2 Test Logs*

Microsoft Word is used to record and report test results.

## *7.3 Bug Reports*

Mantis bug tracker is used for logging and tracking individual malfunctions.

## *7.4 Test Plan Document*

Outlines the overall test strategy, objectives, scope, schedule, resources, and risks.

## *7.5 Test Data*

Prepared datasets required for executing test cases, including valid, invalid, and boundary value data.

## *7.6 Test Summary Report*

A consolidated report summarizing executed test cases, pass/fail status, defect statistics, coverage, and quality evaluation.

## *7.7 Automation Test Scripts (if applicable)*

Automation scripts developed with tools such as Selenium, JUnit, or TestNG, to support regression and repeatable testing.

## *7.8 Test Summary Report*

A consolidated report summarizing executed test cases, pass/fail status, defect statistics, coverage, and quality evaluation.

# Appendix A Project Tasks

Test-related tasks are given below:

• Test Planning

- identify requirements for testing

- assess risks

- develop test strategy

- identify test resources

- create schedule

- generate Test Plan

• Test Design

- prepare workload analysis

- identify and describe test cases

• Test Execution

- execute test procedures

- verify results

- investigate unexpected results

- log bugs

• Evaluate Test

- evaluate test-case coverage

- evaluate code coverage

- analyze defects

- determine whether Test Completion Criteria and Success Criteria have been achieved