PAF-Karachi Institute of Economics and Technology

Project Report

Topic: Testing of E-Voting Application

Course Instructor: Sir Syed Affan Ahmed

Members		
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1. Test Plan Identifier

"Master Test Plan of Election Voting Test Plan created on 01-08-2023" (EVTP-01-08-2023)

2. Introduction

The documentation describes the test plan for Election Voting project where user registration, authentication (via OTP), vote casting, vote counting tally accuracy, accessibility across different devices, security measures will be tested. First, user will register their account, making sure all the credentials like CNIC and DOB are matched from NADRA, and other credentials are also valid. Then user will login via CNIC and password. Then user can vote their favorite party only once by selecting one party and submitting OTP. After that, user cannot vote again as all the credentials have been disabled.

3. Test items

3.1 Functionality of the mobile app

3.2 Performance of the mobile app

3.3 Citizen's CNIC, DOB must be verified via NADRA

3.4 Citizen's age must be at least 18 years

3.5 Submission of voting only once

3.6 OTP verification

3.7 Showing real-time accurate results of party votes

4. Features to be tested

4.1 User Registration and Authentication with NADRA

The CNIC of the citizen must be registered with NADRA. Also, the DOB must match in accordance to NADRA. The user is eligible to vote if the age of the citizen is at least 18 years old. Error messages including duplication of CNIC, phone number, age below 18 years, CNIC not registered with NADRA must be tested too if any input by the user violates the conditions.

4.2 Ballot Design and Presentation

Verifying that the ballot is presented correctly, displaying all parties and options accurately. Testing for correct layout and formatting to ensure clarity for voters.

4.3 Vote Casting

Testing the selection of one party. Also, it is needed to ensure that the vote submission process with OTP is done.

4.4 Accessibility and Usability

Testing across different devices like android and iOS.

4.5 Vote Recording and Storage

Validating that votes are accurately recorded and stored in MySQL database, and must be shown in ViewResults Screen.

4.6 Vote Counting

Testing the vote submission and viewing the results on mobile app screen in real-time.

4.7 Security Measures

Testing encryption protocols for vote confidentiality and verifying security mechanisms to prevent hacking and tampering.

4.8 Voter Verification

If the citizen has voted before, then the “You have already voted” screen must be shown all the time. Hence, the “Voting Once” feature is also tested.

4.9 Performance Testing

Testing system performance under various load conditions. It is needed to ensure that the system can handle peak voting periods.

5. Features not to be tested

None

6. Approach

For election voting project we’ll do three types of testing: Black Box (for test cases, and functionality), White box (like unit testing), and Gray Box testing (like system integrations). First developers will do unit testing for each component. After successful completion of unit testing, we’ll do Integration testing. For that, we need to test API integration with mobile app (like REST API and NADRA API).

We have to execute each test case (test cases document attached) and log the test results and test summary report. Also, there is a case where many users might hit to our server. So, for that, automation testing tools like appium (for mobile app) will be used.

API testing using Postman software tool will also be done to ensure the communication between MySQL and Mobile application must be maintained.

We also need to do load testing because many users may vote at the same time. Also, we will do security tests in order the vote to have bogus-free.

Regression testing is to be done when any updation in the code doesn’t affect previous functionalities.

7. Item Pass/Fail Criteria

For this project, the system is considered to be labelled “PASS” if 98% of the test system is executed successfully without any major defects, following that all the required functions must be executed successfully.

8. Test Deliverables

8.1 Test Plan

8.2 Test Cases

8.3 Test Data

8.4 Test Scripts

8.5 Defect Reports

8.6 Test Execution Logs

8.7 Requirement Traceability Matrix

8.8 Test Summary Report

8.9 Test Environment Setup Documentation

9. Test Tasks

9.1 Automation Testing Task

Appium will be used to test automation for mobile apps.

9.2 Test cases execution Task

Execution of test cases will be done by Mehwish Nabi. Test cases excel sheet is attached on the portal.

9.3 Security Testing Task

Security testing will be done by Aahil Alwani. It is necessary because we need to ensure that the vote is bogus-free.

10. Responsibilities

SID	Student Name	Role	Responsibilities
12072	Aahil Alwani	Test lead	He will be responsible for writing and guiding test plan, monitoring control, and security testing
12440	Filza Wasim	Risk Analyst	She is responsible for making Risk Table
11008	Mehwish Nabi	Jr. Tester	He is responsible for making and executing test cases, and report any defects to the Project Manager
12460	Talha Saeed	Test Lead	He will be responsible for writing and guiding test plan, monitoring control

11. Environmental Needs

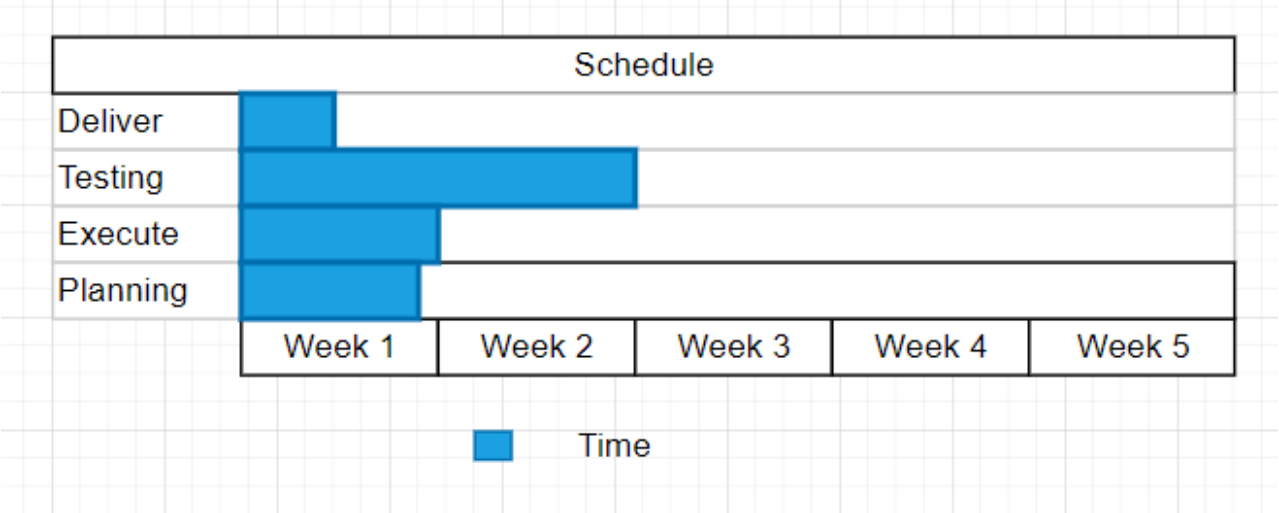
Processor	Any mobile processor
RAM	At least 2 GB
OS	Android + iOS
Android Version	At least 7.0 Nougat
iOS Version	At least iOS 8

12. Staffing and Training Needs

We need to train the testers for Appium automation testing tools for 2 days a week. Also, we need to train Postman API for 1 day a week. The testing training will be done under supervision of trained employees of our organization.

When the product is validated, we will provide training to the client.

13. Schedule



14. Risk and Contingencies

See Risk Table and RMMM Plan attached in excel sheet

15. Approvals

Name	Designation	Date	Sign
Sir Syed Affan Ahmed	Course Instructor	24 August 2023	