

American International University-Bangladesh (AIUB)  
**Department of Computer Science  
Faculty of Science & Technology (FST)**

**Writer your PROJECT TITLE here**

A Software Requirement Engineering Project Submitted

By

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester: Spring\_22\_23** | | **Section:** | **Group Number:** | |
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The project will be Evaluated for the following Course Outcomes

|  |  |  |
| --- | --- | --- |
| Evaluation Criteria | Total Marks (50) | |
|  | |
| Revision History, Test Plan Identifier, Reference Materials, Problem Background, Solutions | [10 Marks] |  |
| Requirements Specification (System feature, Quality Attributes, System Interface, Project Requirements) | [10 Marks] |  |
| Item Not to be tested, Testing approach (Testing levels, tools, meetings), Test cases | [10 Marks] |  |
| Item pass/fail criteria, Test deliverables, Staffing and Training, Responsibilities, Scheduling, Risk | [10 Marks] |  |
| Approval, Format, Submission, and Defense | [10 Marks] |  |

Software Test Plan

for

Child Care

Version 1.0 approved

Prepared by Arif Hossen, Uday Kumar Sarker Pranto, Md.Jahid Hasan & A.S.M Sayem

American International University – Bangladesh (AIUB)

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# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Revision | Date | Updated by | Update Comments |
| 0.1 | 2023.03.16 | Uday | First Draft |
| 0.2 | 2023.03.19 | Jahid | Second Draft |
| 0.3 | 2023.03.23 | Rimon | Third Draft |
| 0.4 | 2023.04.01 | Sayem | Fourth Draft |
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# TEST PLAN IDENTIFIER: pc-1

# REFERENCE

# Child Monitoring Mobile Android Application Project – SRS Document

# INTRODUCTION

## 3.1 Background to the Problem

* The main focus of the project is to build a software that will keep track of children’s usage of devices (electronic) as children are too much into devices now-a-days.
* The ease of access of an electronic device is the root cause of this problem. This problem is important to consider, so that a child doesn’t get addicted to devices & adultery.
* The main focus of the project is to build a software that provide parents with the ability to set up custom parental controls that can be tailored to their child's specific needs.
* Allow parents to remotely access and control their child's device, even when they are not physically present with their child.
* An emergency contact feature that allows children to call for help in case of an emergency.

## 3.2 Solution to the Problem

* The project’s main objective is to focus on a child’s security (i.e mainly their emotional security).  
  The software will keep a track on for how long a child has been using the device. It will also have a timing set which will automatically make the child out from the application he/she is using and it will also keep a track on what the child is watching in the device and adult contents will automatically made disabled when the child enters the device.
* The above proposal is an appropriate solution in our opinion.

Because a child won’t be able to use the device for an excessive amount of time and adult content will be away from their sight.

And it also feasible to meet the business objective.

* The basic functionality of the application is to work as a tracker and spy for the children of our house. As excessive usage of devices is leading to depression, dehumanization effect and even suicidal tendency sometimes and children are unable to use their brain properly and hold their innocence. The application will help for reducing these problems in an enormous amount.
* The target group of users are the children and their parents. The parents will be able to be lot more active and stay away from adultery and parents are not be aware of for how long their child is using device and what they are watching.
* Scientific results state that children nowadays get totally addicted to electronic devices which may lead the dehumanization effects, suicidal tendency, depression and excessive usage tends to fatigue the brain.
* Excessive use of electronic gadgets: health effects could be one of the literature reviews which clearly states the health problems people face while using electronic gadgets excessively.
* Some studies such as “impact of technology use on children” and “youth screen time and behavioral health problems” are some of existing studies presented in the problematic area. Some existing software such as Qustodio, Bark, Mobicip, Norton Family, Net Nanny and Famisafe are trying to solve the above-mentioned problem.

Qustudio: It has filter control, monitory activity, track calls & SMS and also set time limits.

Bark: It manages screen time; alert issue works and filter which sites children can visit.

Mobicip: Mobicip allows you to seamlessly manage your child's screen time using daily screen time allowance, blocking specific apps, blocking specific websites, blocking texts, and creating daily screen time schedules that fit your child's routine

Norton Family: t allows unlimited devices and comes with essential features like location tracking, time limits, app filtering, and web filtering, which not even top VPNs can circumvent.

NetNanny: Net Nanny is the most effective and best website blocker available for families. With Net Nanny's website blocking software.

Famisafe: FamiSafe's screen time controls allow you to instantly block every app on your kid's device, set screen time limits on app categories or specific apps, schedule downtime, and more. The controls work really well on iOS and Android.

* The purposed solution will be more user friendly, monetarily safe and added with more suitable features.

# REQUEIREMNT SPECIFICATION

## System Features

1. **Registration:**
   1. Go to registration
   2. Enter the name, e-mail, phone number, and all the necessary details.
   3. Verification of users
   4. Set the confirmation password
   5. If the registration is successful, the login page will be displayed
   6. If the registration isn’t successful, the system will provide a message on where changes are a must.

*Priority level:* High

*Precondition:* The user must be a parent of a child of age between 2-18 years old.

*Cross-references:* 1.3, 1.2

1. **Home Page:**

**3.1** The system will take the user to their homepage

**3.2** The homepage will have several sections like profile, notification bar, and child registration option. Selecting any section will directly lead to that section.

*Priority level:* High

*Precondition:* Successfully completing a registration and also logging in successfully

*Cross-references:* 2

1. **Profile:**

**4.1** Here all the information of the user shall be showcased and viewed.

**4.2** Also, there will also be options that will allow us to update any changes on our account, delete the account or create a new account.

*Priority level:* Medium

*Precondition:* Completing the registration

*Cross-references:* N/A

1. **Notification Bar:**

**5.1** This section will just keep users updated.

*Priority level:* Low

*Precondition:* Child registration is completed.

*Cross-references:* N/A

1. **Child Registration:**

**6.1** A User has to fill up the basic details asked by the system.

**6.2** The system shall ask for the number of the child the registration should be carried out.

**6.3** For each child their birth certificates should be given

**6.4** The system shall be given the fingerprints of each hand of the child by the user.

**6.5** The screen timing should be asked for and specified.

**6.6** The applications that users don’t want their children to view should be named and listed in the system.

*Priority level:* High

*Precondition:* Child must be 2-18 years old

*Cross-references:* 1

1. **Agreement:**

**7.1** All the prerequisites and conditions of the system shall be stated which by clicking agreed, the user must agree to.

*Priority level:* High

*Precondition:* A User must know the rules for following the app.

*Cross-references:* N/A

1. **Logout:**

**8.1** Logging out of the system.

*Priority level:* High

*Precondition:* User must have logged in.

*Cross-references:* 2

## System Quality Attributes

**Non-Functional Requirements:**

* **QA1-Usability:** A user shall be able to completely finish the registration process within a maximum of 2-3 minutes.

*Priority level:* Medium

*Precondition:*  A User must have a good internet connection.

*Cross-references:* N/A

* **QA2-Performance:** A user can easily within few seconds access the upcoming interfaces right after providing the information.

*Priority level:* High

*Precondition:* Choosing the best algorithm for coding.

*Cross-references:* N/A

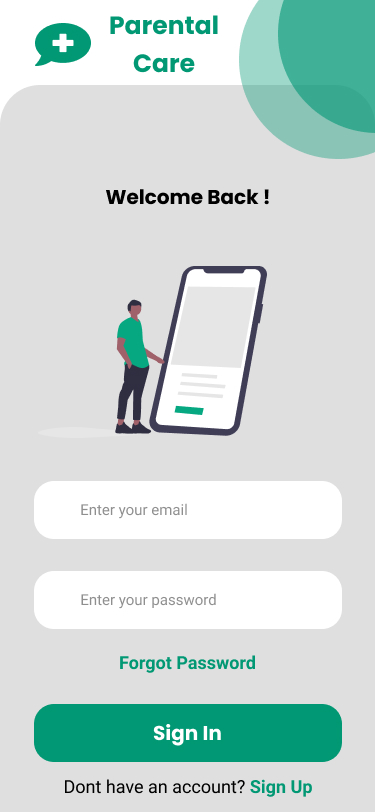
* **QA3-Integrity:** A user can safely provide their personal information, as the system ensures that the data are completely protected from intruders.

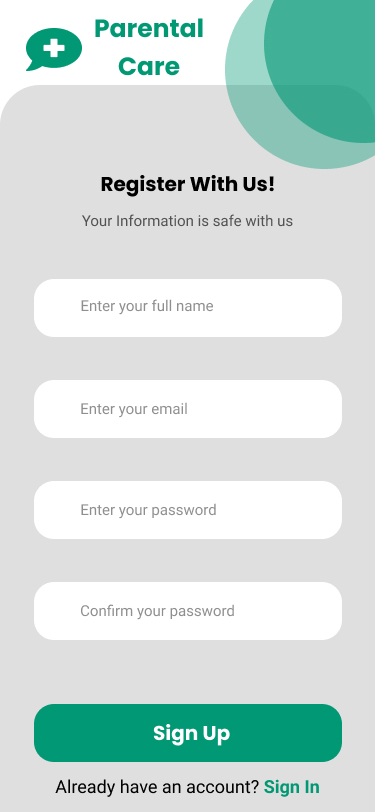
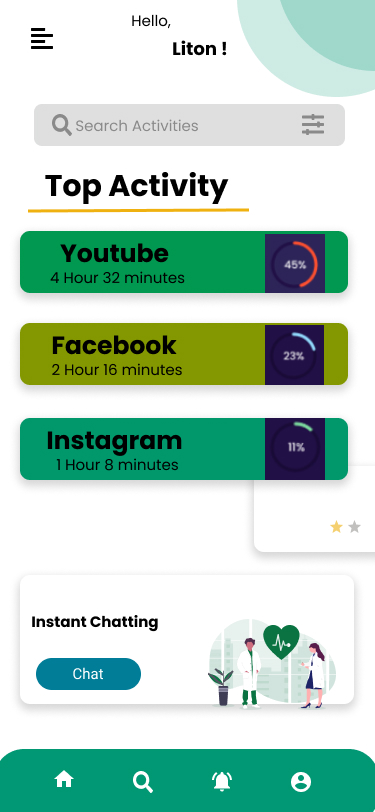
*Priority level:* High

*Precondition:* Data must be encrypted during coding

*Cross-references:* N/A

## System Interface

.



## Project Requirements

* **Device:** Our software is only applicable for Android-based Mobile & Tablets.
* **Budget:**  As the project is a short system, hence the total cost will be around Tk 1,90,000.
* **Tools:** Here we will be using applications such as PENCIL, Visual Studio, SQL Server, Excel, and google (for brainstorming).
* **Time:** 20 weeks

# FEATURES NOT TO BE TESTED

The areas that won't be specifically tested are listed below.

* Portability across Android and iOS platforms.
* The ability to log out of numerous devices.
* Device identification and verification for future password-free logins.

# TESTING APPROACH

## Testing Levels

Project Test Planning

* **Black-Box Test:** In our project we want to do Black-Box testing. Because in functional testing one does not have access to the internal details of a program and the program is treated as a black box. It is mostly done by software testers. A test engineer is concerned only with the part that is accessible outside the program, that is, just the input and the externally visible outcome. A test engineer applies input to a program, observes the externally visible outcome of the program, and determines whether or not the program outcome is the expected outcome. Inputs are selected from the program’s requirements specification and properties of the program’s input and output domains. A test engineer is concerned only with the functionality and the features found in the program’s specification.
* **System test:** System testing is a black-box testing. System Testing means testing the system as a whole. All the modules/components are integrated in order to verify if the system works as expected or not. System Testing is done after Integration Testing. This plays an important role in delivering a high-quality product.
* **Load test:** Load Testing is a non-functional software testing process in which the performance of software application is tested under a specific expected load. It determines how the software application behaves while being accessed by multiple users simultaneously. The goal of Load Testing is to improve performance bottlenecks and to ensure stability and smooth functioning of software application before deployment.
* **Beta test:** Beta Testing is performed by "real users" of the software application in "real environment" and it can be considered as a form of external User Acceptance Testing. It is the final test before shipping a product to the customers. Direct feedback from customers is a major advantage of Beta Testing. This testing helps to test products in customer's environment. Beta version of the software is released to a limited number of end-users of the product to obtain feedback on the product quality. Beta testing reduces product failure risks and provides increased quality of the product through customer validation.

## Test Tools

The system can be tested using IBM's iSeries, a midrange server series originally known as AS/400:

This testing service is assessing:

* Testing metrics analysis and decision making
* Tracking
* Communicates
* Quality compliance
* Analyzing defects

It can be combined with Testbench software for test data management and certified IBM iSeries, AS/400 solution.

## Meetings

The test team will meet once a week to assess work to date and to identify trends and issues with errors as soon as feasible. Every two weeks, the project manager and the head of the test team will also meet. The dates for these two meetings will be separate weeks. In the event of an emergency, extra meetings may be called.

# TEST CASES/TEST ITEMS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Project Name: Parental Care | | Test Designed by: Uday Kumar Sarker | | |
| Test Case ID: TC\_1 | | Test Designed date: 4 April, 2023 | | |
| Test Priority (Low, Medium, High): Medium | | Test Executed by: | | |
| Module Name: **Registration** | | Test Execution date: | | |
| Test Title: verify registration with valid information | | | | |
| Description: Test website registration page | | | | |
| Precondition (If any): User must have valid information | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Download the app 2. Enter full name 3. Enter username 4. Enter email 5. Enter mobile no 6. Enter gender 7. Enter age 8. Enter address 9. Enter nationality 10. Enter password 11. Enter confirm password 12. Click submit | Full name: Uday Kumar Sarker  Username: Uday 123  Password: 1232@4  Email: prantouday05@gmail.com  Mobile no.: 012887787  Gender: Male  Age: 22  Address: Kuratoli, Dhaka  Nationality: Bangladeshi | Users should register for the application |  |  |
| Post Condition: User will be validated with database and successfully register to the software. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Parental Care | | | Test Designed by: Jahid Hasan | | |
| Test Case ID: TC\_4 | | | Test Designed date: 6-april-23 | | |
| Test Priority (Low, Medium, High): High | | | Test Executed by: | | |
| Module Name: **Home Page** | | | Test Execution date: | | |
| Test Title: go to home page after a successful login | | | | | |
| Description: successful login will push a user in home page for using homepage sections | | | | | |
| Precondition (If any): if the user information is correct then login successful and get access homepage | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Enter valid username 2. Enter valid password 3. Click submit button 4. Login successful 5. Go to the homepage 6. Homepage has three sections. Profile, Notification & Child Registration 7. Click profile to see profile details 8. Click notification bar and see all notification 9. Child Registration by giving child information with fingerprint | Username: jhd12  Email: jahid@gmail.com  Password: 39098987y | User should successfully login into the application and go to the home page perfectly | |  |  |
| Post Condition: User is valid through validated information with the database and successfully login to go to the home page. | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Parental Care | | | Test Designed by: Arif Hosen | | |
| Test Case ID: FR\_1 | | | Test Designed date: 8 April 2023 | | |
| Test Priority (Low, Medium, High): Medium | | | Test Executed by: | | |
| Module Name: **Profile** | | | Test Execution date: | | |
| Test Title: Verify Profile Information | | |  | | |
| Description: Test website login page | | |  | | |
| Precondition (If any): User must have valid username and password | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. View profile section from home page 2. Ensure That the Users Information Are Viewed Properly. 3. Update Profile 4. Delete Profile | Full name: Arif Hossen  Username: arif 234  Mobile no: 0172  Gender: Male  Age: 25  Address: Dhaka | All the information of the User Must Be Shown. | |  |  |
| Post Condition: Functions in Profile Works Properly. | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project Name: Parental Care | | | Test Designed by: A S M Sayem | | |
| Test Case ID: TC\_6 | | | Test Designed date: 9 April -23 | | |
| Test Priority (Low, Medium, High): High | | | Test Executed by: | | |
| Module Name: **Child Registration** | | | Test Execution date: | | |
| Test Title: Verify child registration system | | | | | |
| Description: Test application child registration system. | | | | | |
| Precondition (If any): Child must be 2-18 years old. | | | | | |
| Test Steps | Test Data | Expected Results | | Actual Results | Status (Pass/Fail) |
| 1. Go to Home Page. 2. Click the child registration section. 3. Select number of children that must be registered. 4. Fill up the basic details. 5. Scan the birth certificate and fingerprints. 6. Screen timing and restricted applications setup. 7. Click submission for the child registration. | Number of children: 1  Name: Maimona  Age: 10  School: XYZ  Class: 3  Birth certificate: scanned  Fingerprints: setup | A child should be registered properly | |  |  |
| Post Condition: Child successfully registered. | | | | | |

# ITEM PASS/FAIL CRITERIA

A process will determine whether a test case item passes or fails:

After all test cases have been successfully completed, recommendations will be made. These choices will be made by the team leader in light of the trial's outcomes. The software framework cannot be removed until all bugs have been found in it. There will always be some bugs in the system when the final program is issued. The decision regarding whether to release the program and which test numbers will pass will therefore be made by the test leader and project manager. The test lead and project manager are solely responsible for it. If 98% of the test cases are successfully completed during the test session, we will in this instance remove the device.

**Evaluation team:** Each item's condition will be monitored by the evaluation team. The participants will be checking the things in this section:

* A Development Team
* User Acceptance Testing Manager
* UAT Analyst
* BAT Analyst
* Project Manager

**Evaluation Process:**

**Evaluate Business Scenarios:** Each open incident is traced back to the business scenarios, as well as any closed incidents that are acknowledged to be acceptable. The technological effect is evaluated, as well as whether they can supply the functionality that the company requires.

**Estimate Business Impact:** The impact of each open incident on the company is then assessed. The impact, the frequency of business impact, and remedies like schedule fixes and workarounds are all studied and recorded.

**Make an Acceptance Decision:** The analyses are then assessed to determine whether or not they should be accepted.

**Acceptance in its whole:** The system will be accepted in its entirety. Any unresolved incidents will be addressed.

# TEST DELIVERABLES

* **Acceptance test plan:** Acceptance testing criteria, test cases, objectives, scope, approach, resources, and schedule are documented.
* **System/Integration test plan:** System/Integration testing criteria, test cases, objectives, scope, approach, resources, and schedule are documented.
* **Screen prototypes:** The layout and the design of the testing approach are documented.
* **Transmittal Reports for Test Items:** Developers' handover report.
* **Test Logs:** These are the outcomes of the tests.
* **Incident Reports**: Unexpected outcomes are documented.
* **Investigation Report Logs:** Incident Report Summary.
* **Test Summary Report:** A report that summarizes the testing.

# STAFFING AND TRAINING NEEDS

**Time Estimation:**

For creating prototype hours needed:80 hours.

For Developing Hours needed: 860 hours.

For revision hours needed: 60 hours

For testing & debugging hours needed:200 hours Total working hour :1200 hours

Daily working hour: 8 hours

Total days need:1200/8=150 days or 5 months or 20 weeks.

**Resources:**

3 app developers, 3 software testers, 5 Custom Built PCs, 6 Android mobile smartphones, 2 LAN Connection.

It is advised that this project have at least one full inspector due to the structure and stages of project distribution. For the assessment, the person will need to be given some time at the beginning of the project, and then, roughly six months later, they will need to be provided full-time. The project/test manager will take over if a different tester is not available. To include a thorough and pertinent study, the following preparation-related topics should be considered. The personnel for this project have long been planned. The majority of the group will participate in particular research tasks, which are covered in greater depth in the section on responsibilities.

* The developers and testers will need to be taught Java, C++, Dart, Flutter, and MySQL.
* Automation tester should gain the proper knowledge and also have the experience to operate the tools.

# RESPONSIBILITIES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | TM | PM | Dev Team | Test Team | Client |
| Acceptance test Documentation & Execution | Done | Done | Pending | Pending | Pending |
| System /Integration test Documentation & Execution | Done | Done | Done | Done | Pending |
| Unit test Documentation & Execution | Done | Done | Done | Done | Pending |
| System Design Reviews | Done | Done | Done | Done | Pending |
| Detail Design Reviews | Done | Done | Done | Done | Pending |
| Test procedure and rules | Done | Done | Done | Done | Pending |
| Screen & Report prototype reviews | Done | Done | Done | Done | Pending |
| Change Control and regression testing | Done | Done | Done | Done | Pending |

# TESTING SCHEDULE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test/Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Documentation |  |  |  |  |  |  |  |  |
| Design |  |  |  |  |  |  |  |  |
| Test Plan |  |  |  |  |  |  |  |  |
| Unit Testing |  |  |  |  |  |  |  |  |
| Integration Testing |  |  |  |  |  |  |  |  |
| System Testing |  |  |  |  |  |  |  |  |
| Acceptance Testing |  |  |  |  |  |  |  |  |
| Project Completion |  |  |  |  |  |  |  |  |
| Feedback |  |  |  |  |  |  |  |  |

# PLANNING RISKS AND CONTINGENCIES

**Project Estimation**

COCOMO (CONSTRUCTIVE COST MODEL)

As our project type is Organic,

So, Effort = PM= Coefficient<Effort Factor>\*(SLOC/1000) ^P

= 2.4\*(7000/1000) ^1.05

= 18.52 working hours.

Development time = DM = 2.50\*(PM)^T

= 2.5\*(18.52) ^ 0.38

= 7.58 weeks days

Required number of people = ST = PM/DM

= 18.52/ 7.58

= 2.44

= 3 persons

**Risks Planning**

Technical, programmatic, and process risks are identified and categorized as part of software risk management, which then forms the basis of a plan that connects each to a mitigation approach. Throughout the project, the project manager keeps an eye on risk. If any do, a particular owner takes a mitigating step.

* Lack of encrypted data: Keep an eye on security and back up the data with highly encryption.
* Attempt unauthorized access: Consecutively three failed login attempts in an hour, the user will be restricted.
* Error in Functionalities: Regularly test the application and make a daily backup.

# APROVALS

|  |  |
| --- | --- |
| Project Sponsor – Steve Sponsor |  |
| Development Management – Ron Manager |  |
| EDI Project Manager – Peggy Project |  |
| RS Test Manager – Dale Tester |  |
| RS Development Team Manager – Dale Tester |  |
| Reassigned Sales – Cathy Sales |  |
| Order Entry EDI Team Manager – Julie Order |  |

**Text Format**

* Style: Times New Roman
* Size: 12
* Line and Paragraph Spacing: 1.00
* Alignment: Justify