

Test Plan

introduction.

The object of testing is a cross-platform mobile application for iOS and Android devices - 3D modeling: Design my model.

The application specializes in 3D modeling of objects of varying complexity, volume and size and is intended for specialized specialists in the field of modeling and design, as well as users who are interested in modeling.

Statistics and observation: the application has a large number of downloads on various platforms of Android and iOS devices, has high user ratings and positive reviews. For about 3 years, the application has been actively expanding its user audience and improving the quality of the product.

Application business goals.

- Provide an opportunity for users of specialized specialties or users who are interested in modeling, using mobile devices and tablets on common platforms and operating systems, to create, edit and share modeling objects of varying complexity.
- The convenience of modeling objects is due to the mobility of the platforms used, extensive functionality and convenient management using the capabilities of mobile devices.
- The main part of the financial profit is a premium subscription that provides the user with advanced application functionality for a fee and advertisements.

The main functions of the application (considering interface and navigation elements).

1. Navigation of the workspace, management of modeling objects.
 - a. Camera control.
 - b. Zooming in and out of the camera.
 - c. Moving the simulation object.
 - d. Group selection.
 - e. Resizing an object.
 - f. Resizing an object along 1 axis.
 - g. Object rotation.
 - h. Selection of vertices, edges, faces of objects.
 - i. Changing the position of an object using the panel for entering coordinates.
2. Modeling.
 - a. Models:
 - i. Create modeling objects using detailed templates.
 - b. Create:
 - i. Create modeling objects using geometric templates.
 - ii. Creating an object in front of the camera.
 - iii. The size of the object, taking into account the perspective of the camera.
 - iv. Changing the number of segments.

- c. Objects:
 - i. Deleting
 - ii. Cloning
 - iii. Smoothing
 - iv. Dividing
 - v. Separating
 - vi. Combining
 - vii. Softing Normal
 - viii. Mirroring of modeling objects.
- d. More:
 - i. Merge close vertices.
 - ii. Lock.
 - iii. Repair.
 - iv. Displays the length of the edge.
- e. Face:
 - i. Face drawing.
 - ii. Detach.
 - iii. Extrude.
 - iv. Select shell
 - v. Clone
 - vi. Delete
 - vii. More: Reverse, Collapse.
- f. Edge:
 - i. Select loop
 - ii. Draw cut
 - iii. Cut loop
 - iv. Extrude
 - v. Bevel
 - vi. Delete
 - vii. More: Select ring, Split, Create face by border, Collapse.
- g. Vertex:
 - i. Target merge
 - ii. Merge
 - iii. Create face by vertices
 - iv. Connect
- 3. Sculpting.
 - a. Changing the shape of objects:
 - i. Smooth
 - ii. Pull
 - iii. Push
 - iv. Move
 - v. Screen
 - b. Change parameters:
 - i. Strength.
 - ii. Size.
 - c. Additional features:
 - i. Divide
 - ii. Smoothing.

- iii. Choice of axis fixation mode: Along axis, Sculpt mirrored.
- 4. Texture painting.
 - a. Applying paint to modeling objects.
 - b. Additional settings:
 - i. Color palette
 - ii. Brush size
 - iii. Opacity
 - iv. Smoothing.
 - c. Texture tools:
 - i. Display painted/hidden
 - ii. Ortho camera.
 - iii. Save texture to gallery
 - iv. Load texture
 - v. Take color
 - vi. Delete
 - vii. New texture
 - viii. New texture options: 1024, 512, Smooth pixels, Fill new texture with main color.
- 5. Vertex painting.
 - a. Applying paint to the object of modeling:
 - i. Fill.
 - ii. Paint.
 - b. Additional features:
 - i. Color picker.
 - ii. Apply paint.
 - iii. Brush size.
 - iv. Selection of objects (vertex, edge, object, faces).
- 6. UV editor.
 - a. Selection elements and parts of the object.
 - b. Planar and packaging.
 - c. Auto uv.
 - d. UV functions:
 - i. Display selected elements.
 - ii. Ortho camera.
 - iii. Switching object modes.
 - iv. 90 degree alignment.
 - v. UV removal.
- 7. Materials.
 - a. Applying a material to a modeling object.
 - b. The choice of material.
 - c. Apply material.
 - d. Normal smoothing.
- 8. The main functions of the mode Modeling, Sculpting, Painting vertices, Materials.
 - a. Grow or convert selection (vertex, edge, face, object).
 - b. Working with images.
 - c. Removal of selections.
 - d. Resetting the axis of an object.
 - e. Display selected items.

- f. Ortho camera.
 - g. Transparency.
 - h. Free movement.
 - i. Binding options.
9. Additional features:
- a. File:
 - i. Save
 - ii. Open
 - iii. Create a new file
 - iv. Save in different formats
 - v. Import from .obj.
 - vi. Share.
 - b. Undo actions.
 - c. Automatic saving.
 - d. Monetization: PRO mode, subscription options, trial period, restriction and access to certain features, purchase recovery, advertising.
 - e. User training: initial training, training during use.
 - f. User navigation in the application, main menu and additional menus of operating modes.
 - g. Change interface settings.
 - h. Change basic settings.
 - i. Warning and limiting the user from high CPU usage.
 - j. Warn users of the required time to complete a task.

Testing restrictions.

1. Limited time for testing.
2. Lack of necessary documentation describing the behavior of the system (specifications, requirements, project plan, test artifacts, etc.).
3. Lack of detailed information about business goals, target audience, business domain, software development life cycle model, product and project risks, company policy, standards.

Time constraints, lack of documentation and additional information do not allow using the entire scope of the necessary testing techniques.

To effectively perform testing, the experience of the tester, statistical data, best practices for developing such applications and specialized literature will be used.

Environment.

Device: Redmi Note 6 Pro.

Operating system and version: Android 9 PKQ1.180904.001

Application and version: 3D Modeling App 1.15.11

Testing purposes.

1. Search and find failures, defects in the application.
2. Analysis of the root causes of defects, prevention of the occurrence of similar defects in the future.
3. Confirmation that the product meets user expectations.
4. Building confidence in the level of product quality.
5. Obtaining up-to-date information about the quality level of the application to provide to different stakeholders.
6. Give suggestions for improving the software.

Criteria for starting and ending testing.

The main criterion for starting testing is the readiness of the application and its functionality, the availability of the test environment and tools for testing.

The criterion for the end of testing is the end of time for testing.

Product risks.

1. The interface and functionality of the application can be inconvenient, incomprehensible and repulsive to users.
2. The application will need a large amount of time to perform certain tasks. Typical manifestations will be: long execution time of functions, freezes and performance-related defects.
3. The application may not perform the necessary functions to solve user problems, may not meet the needs and expectations of users and stakeholders.

Considering the statistics, usability and performance issues are the most negative for users. These non-functional quality criteria will be emphasized during testing.

Types, types and methods of testing.

Main type of testing:

1. Functional testing (completeness, correctness, appropriateness of application functions).

Additional types of testing:

1. Testing compatibility with device hardware.
 - a. function testing .
 - b. testing different ways of data entry.
 - c. screen orientation change testing.
 - d. testing typical interrupts.
 - e. testing access rights to device functions.
 - f. power and condition testing.
2. Testing the interaction of the application with the device software.
 - a. notification testing.

- b. testing user settings provided by the OS.
- 3. Testing different network connection methods.
- 4. Non-functional types of testing.
 - a. performance testing.
 - b. usability testing.
 - c. accessibility testing.
 - d. localization testing.
- 5. Additional levels of testing.
 - a. testing during use.

Tours for mobile application testing.

- Gesture tour. Interaction with the software with various gestures on each of the screens.
- Orientation tour. Use of portrait and landscape orientation on each of the screens.
- Change your mind tour. Trying to undo actions under different conditions.
- Accessories tour. Connecting various accessories to the device, such as headphones, charger, bluetooth headset, etc.
- Motion tour. The movement of the device in space can activate various sensors and lead to errors.
- Light tour. Testing the application under different lighting conditions such as night light, daylight, dim light, bright light, etc.
- Consistency tour. The consistency of software execution of the same functions in different parts of the application is checked.
- User tour. Use of the application by different users, such as an advanced user, an inexperienced user, a child, a teenager, etc.
- Lounge tour. Using the software in a comfortable environment, lying down, sitting, on the bed, etc.
- Low battery tour. Using the application with a small device charge.

Test estimate.

Basic type of testing: 3 days.

Additional types of testing, mobile tours: up to 7 days.

