



Creating a water-saving mobile application

STEM4inclusive schools
WP2 – Toolbox



Inovatif ve Girişimci Toplum Derneği
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Structure of the activity

A Introduction

about the topic

What is water saving?

Required elements for the mobile application to be developed on this subject.

B Training phase

about the training

Make your own simple water saving mobile app

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A: About the topic

What is water saving?

Required elements for the mobile application to be developed on this subject.

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Definition!



What is water saving?

- Water conservation refers to the careful and efficient use of water to preserve natural resources and ensure future generations have access to this vital resource. Freshwater sources on Earth are limited, and factors such as climate change and population growth are increasing the pressure on these resources. The primary goal of water conservation is to maintain the natural balance by using only the necessary amount of water without wasting it. To achieve this, methods are developed to reduce water consumption, awareness campaigns are organized, and individuals are encouraged to change their daily water usage habits.
- **Water conservation is an approach with many positive effects on both individual and societal levels. For example, taking simple measures at home, such as using faucets less, fixing leaks, or choosing devices that consume less water, can reduce water consumption.**





Let's have a look at this
youtube video!

The climate change Video

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<https://www.youtube.com/watch?v=nTcFXJT0Fsc>



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Water saving and mobile application

- Making a mobile application for water saving allows children to have a device that can be accessed at any time.
- In addition, by designing a mobile application, we bring together the technology of our age and the problems of our age at the same point.



A few simple examples of water saving mobile applications



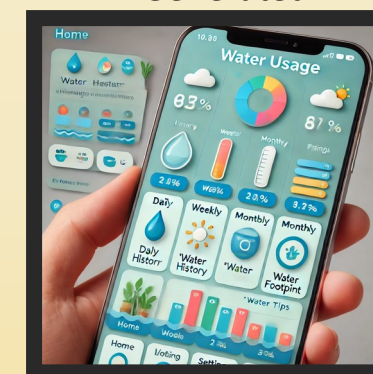
Dropcountr: Analyzes household water usage and provides personalized water-saving suggestions. Allows setting monthly water usage targets.

Waterprint: Helps measure your water footprint and shows how much water is consumed by various products, from food to clothing.

My Water: Tracks daily water usage to monitor water conservation. Especially effective in optimizing indoor water use.



AI- Generated



AI- Generated



Definition!



How to make a mobile application using AppInventor?

- **Go to the Site and Start a Project:** Visit [AppInventor](#), sign in with your Google account, and create a new project.
- **Design Screen:** Drag components (button, textbox, etc.) from the left palette into the center screen. Adjust their properties on the right side.
- **Blocks Screen:** Switch to the “Blocks” tab, and drag blocks to define the functions of your components by connecting them together.
- **Testing and Downloading:** Use the “Connect” menu to test your app on your phone with the “AI Companion,” and then go to “Build” to download your app as an APK file.





What is needed to make a simple mobile application-1

- Google Account:** Since App Inventor is an online platform, you'll need a Google account to sign up and save your projects.
- Internet Connection:** App Inventor works online, so a stable internet connection is required.
- Supported Web Browser:** You'll need a modern browser such as Google Chrome, Firefox, Safari, or Edge. Although App Inventor works on all browsers, Chrome and Firefox are recommended.
- App Inventor Companion App** (Optional): This app allows you to test your projects on an Android device in real-time. You can download the **MIT AI2 Companion** app from the Google Play Store to your Android device.





What is needed to make a simple mobile application-2

- **Android Device or Emulator:** An Android device or an emulator on your computer is necessary to test your application. You can also download and set up the App Inventor Emulator software for testing on a computer.
- **Basic Knowledge of Block-Based Coding:** App Inventor uses a block-based programming language, so having a basic understanding of programming logic will be beneficial.
- **Creative Idea and Design Plan:** It's essential to have an idea and a plan for how your app will function.
- **Media Files (Images, Sounds, etc.):** You may need to prepare images, sounds, or other media files required for your application.

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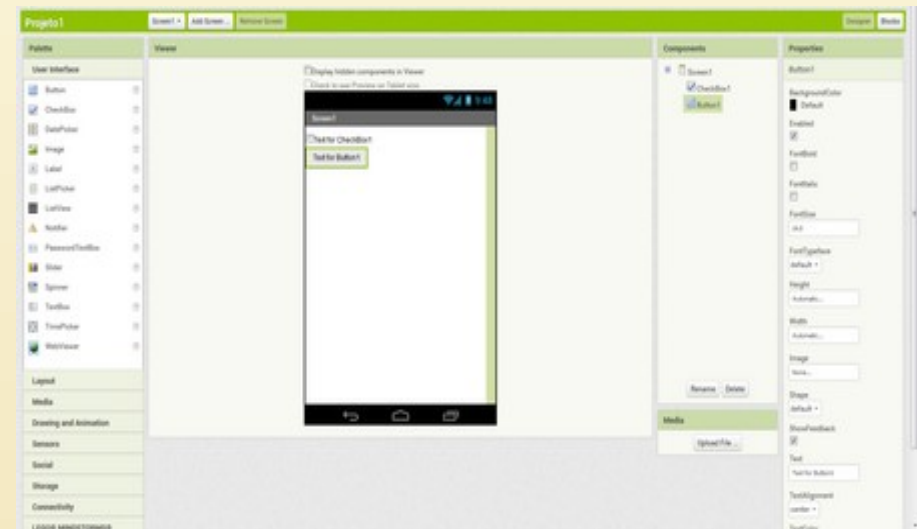


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What is the required program to make a mobile application?

App Inventor platform is used to develop this application. Required tools include a Google account, internet connection and Android device. On the design screen, the interface of the application will be created by placing components such as buttons and text boxes, and the functions of these components will be defined on the block screen.



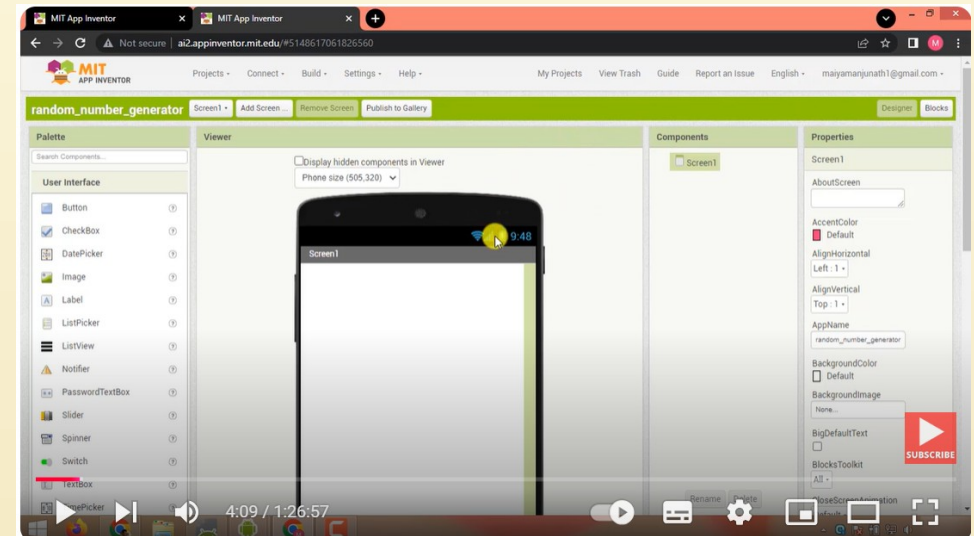
Source: Wikipedia





Application Design: Interfacing

To create a user-friendly interface, components are selected from the left palette of App Inventor and dragged to the screen. The placement and properties of these components can be adjusted from the properties panel on the right. During the design phase, a simple and understandable interface was aimed so that users can easily use the application.



https://youtu.be/iU10J3x7iRc?si=LSV0qr_27e4FAgiu





Working principle of the mobile application for water saving

- There should be 5 tasks related to saving water. For example; I turn off the water while brushing my teeth.
- The one who completes three of these 5 tasks passes the first stage.
- As each stage is passed, it moves up one level in terms of water saving.
- These ranks are determined by the number of drops they receive.
- Each stage means one drop.



AI- Generated





B: About the training

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LESSON 1: The Importance of Water Conservation and Developing the App Idea

Duration: 40 minutes

Objective: Students will explore the importance of water conservation and collaboratively develop the mobile app idea.

Lesson Content:

•Sharing Ideas on Water Conservation (10 min)

- Students are divided into small groups to share their knowledge and experiences on water conservation.
- Each group brainstorms ideas on how to conserve water at home or school and shares these ideas with the class.

•Developing the App Idea (15 min)

- In groups, students discuss what features a water conservation mobile app should have. Examples might include “Water conservation tips” or “Daily water usage tracking.”
- The groups’ ideas are written on the board, and the class decides which features are the most appealing to develop a common design for the app.

•Mini Design Workshop (15 min)

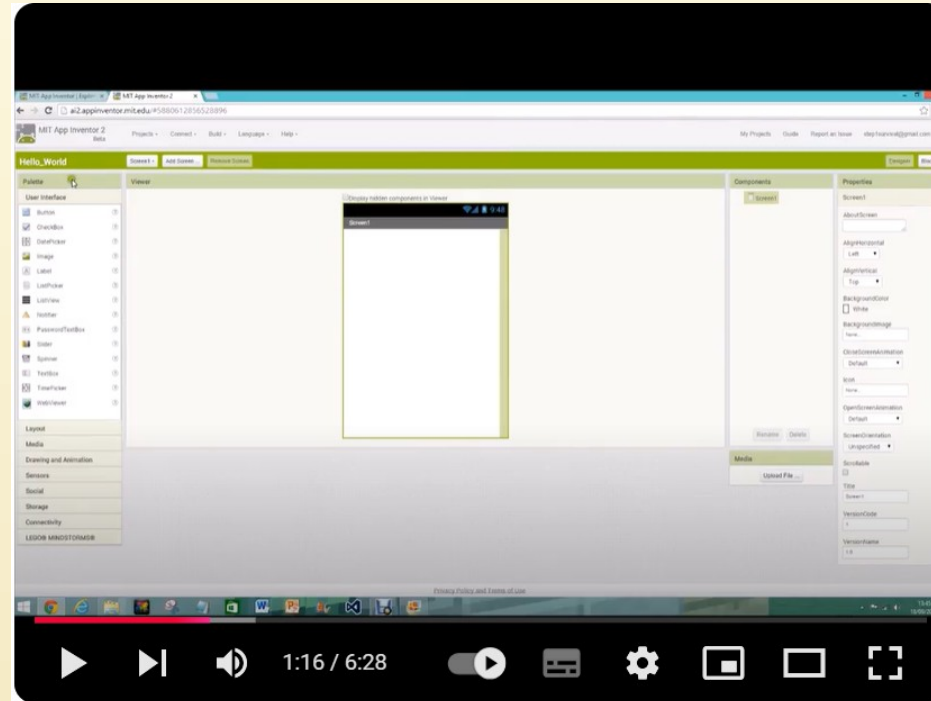
- Based on the selected features, each group designs a simple interface. They may sketch the main screen of the app or note the components needed for the design (e.g., buttons, text boxes).
- Groups share their designs with the class and receive feedback from other groups. This helps students better understand the app and identify areas for improvement.





Appinventor mobile application making video

Describe what you see in a video. Please work with others.



Hello World Tutorial - MIT app inventor

<https://www.youtube.com/watch?v=xaQm-67FdaE&t=1s>

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LESSON 2: Coding the App and Testing

Duration: 40 minutes

Objective: Students will learn to code the app and test it while guiding each other to solve issues.

Lesson Content:

•Block-Based Coding Workshop (15 min)

- In groups, students start coding the app functions in App Inventor. For example, they add a button function that displays water conservation tips.
- The teacher guides each group, encouraging students to support each other in solving coding problems as they arise.

•Testing and Feedback Session (15 min)

- Each group tests their app using the “AI Companion” app.
- Groups share any issues they encountered during testing with the class and receive suggestions from other groups to improve their app.

•In-Class Observation Form (10 min)

- Students note down their observations about the testing process, any challenges they faced, and how they resolved these issues. This form will be helpful for future revisions.





LESSON 3: Finalizing the App and Water Conservation Awareness Campaign

Duration: 40 minutes

Objective: Students will present the final version of their app and plan a creative activity to raise awareness on water conservation.

Lesson Content:

•**Final Adjustments and App Presentation (15 min)**

- Groups make final adjustments to their apps based on feedback and present their apps briefly to the class.
- Each group explains the features of their app and how it contributes to water conservation.

•**Water Conservation Awareness Campaign (20 min)**

- Groups are tasked with planning a campaign or activity to encourage water conservation. They might design a poster to promote the app, make a short video, or create a banner to raise awareness.
- Each group presents their campaign to the class and shares ideas on how it can contribute to water conservation.

•**End-of-Lesson Reflection (5 min)**

- Students write a brief reflection on what they learned throughout the project and how the app contributes to water conservation.





H5P- Practice Questions with H5P - 1

Which of the following is the website used for mobile application preparation?

☐ Moodle

☐ AppInventor

☐ Joomla

☐ Drupal

☒ Submit





H5P- Practice Questions with H5P - 2

Where can I find plug-ins such as buttons and labels used for work to be done in AppInventor?

☐ Viewer

☐ Properties

☐ Palette

☒ Submit

H5P Reuse

I am confused

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H5P- Practice Questions with H5P - 3

Which field do we use to write block codes in AppInventor?

☐ Help

☐ Blocks

☐ Media

☒ Submit

H5P Reuse

I am confused

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H5P- Practice Questions with H5P - 4

What is the name of the area we design in AppInventor?

☐ Palette

☐ Viewer

☐ Designer

☒ Submit

H5P

Reuse

I am confused

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Congratulations!
You have prepared a
mobile application
on water saving.

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