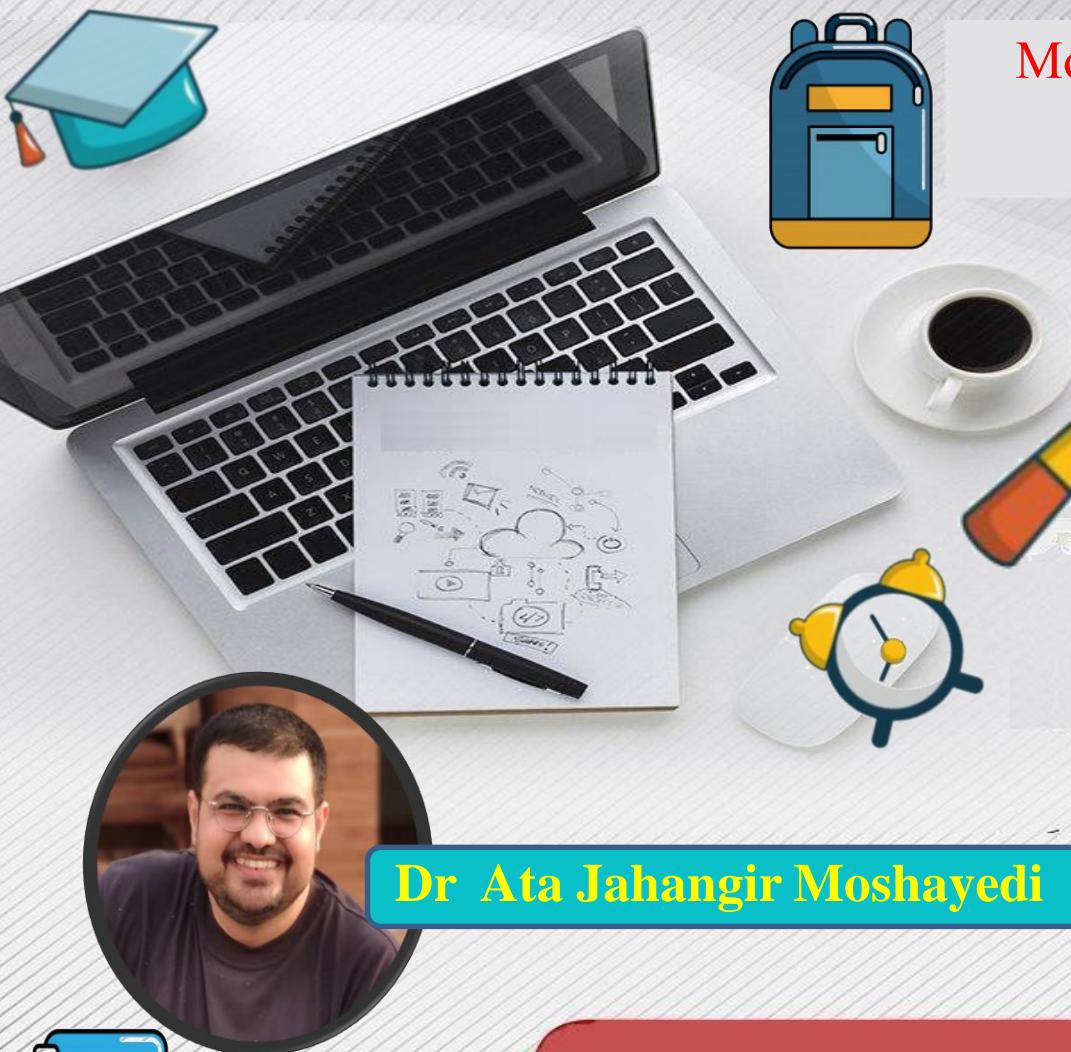




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Mobile application development

移动应用开发



Lecture 013: APP Inventor_enviroment Clock/ Time/Date



Dr Ata Jahangir Moshayedi



EMAIL: ajm@jxust.edu.cn

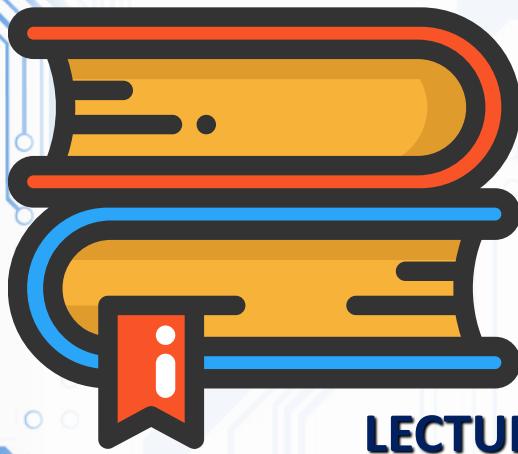
Prof Associate ,
School of information engineering Jiangxi
university of science and technology, China

Autumn _2021



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MOBILE APPLICATION DEVELOPMENT

LECTURE 013:

APP Inventor_enviroment

Clock/ Time/Date



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App Inventor



Agenda

Clock/ Time/Date

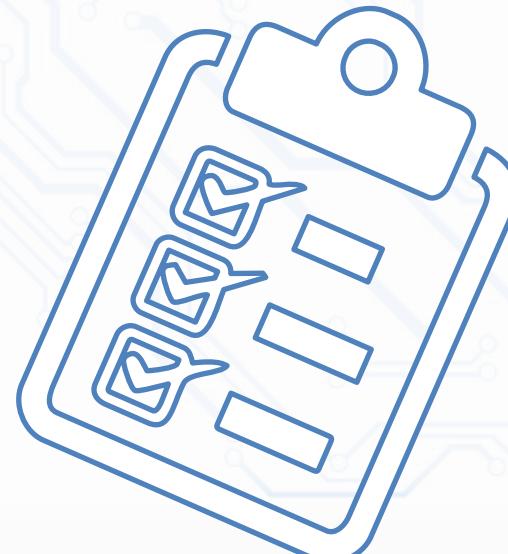
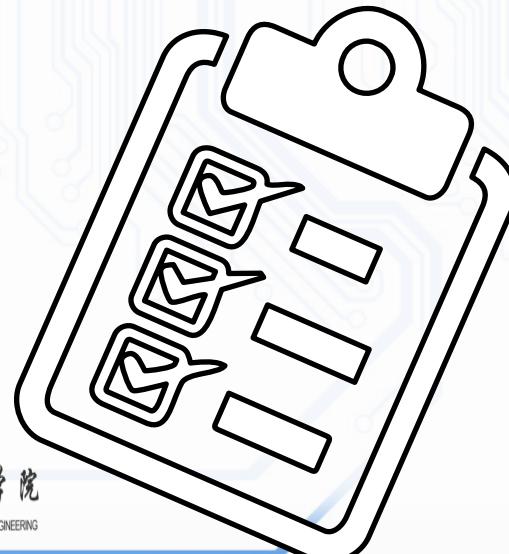
Practical Example 1: Clock. Timer. Flashing colors on the screen.

Practical Example 2: Clock. Traffic light.

Practical Example 3& 4: Demo and run

Practical Example 5: Set /Change the time and date

Practical Example 6: The TimePicker and DatePicker User Interface Controls





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MOBILE APPLICATION DEVELOPMENT

Practical Example 1:

Clock. Timer.

Flashing colors on the screen.



Practical Example 1:

Clock. Timer. Flashing colors on the screen.

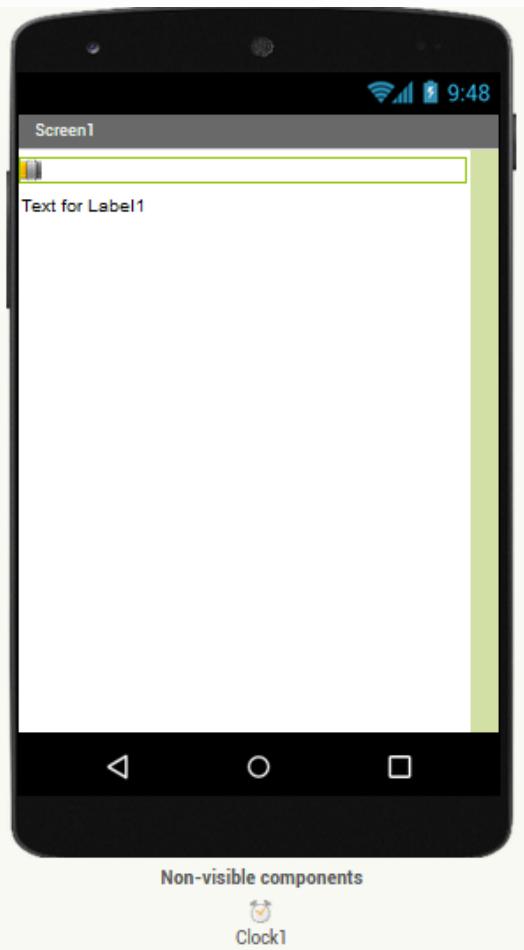


- Moving the **Slider** to set a new **interval** in the **Clock** (timer) so that it will act each that time.
- When acting the **clock** three random numbers from 1 to 255, are created corresponding to each of the basic colors.
- The sum of these colors is presented as Background color of the screen.



Practical Example 1:

Clock. Timer. Flashing colors on the screen.



The image shows the App Inventor Components and Properties panels for the "Slider1" component. The Components panel lists "Slider1" under "Screen1", along with "Label1" and "Clock1". The Properties panel displays the following settings for "Slider1":

- ColorLeft: Default (Yellow)
- ColorRight: Default (Dark Gray)
- Width: Fill parent...
- MaxValue: 2000
- MinValue: 1
- ThumbEnabled:
- ThumbPosition: 30.0
- Visible:

At the bottom of the Properties panel are "Rename" and "Delete" buttons. A "Media" section with an "Upload File..." button is also visible.

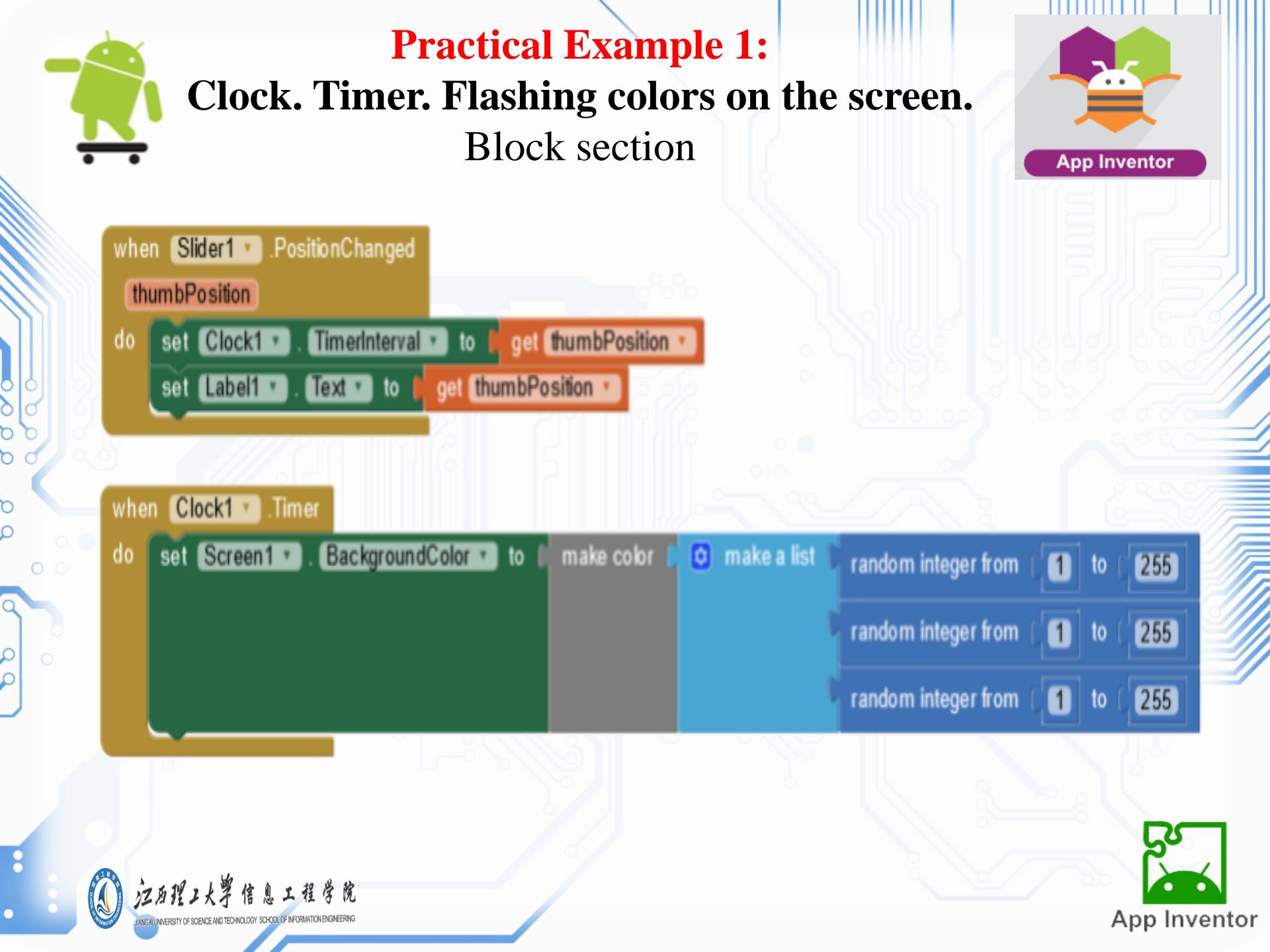




Practical Example 1:

Clock. Timer. Flashing colors on the screen.

Block section



```
when Slider1 .PositionChanged
  thumbPosition
  do set Clock1 .TimerInterval to get thumbPosition
    set Label1 .Text to get thumbPosition

when Clock1 .Timer
  do set Screen1 .BackgroundColor to make color [make a list [random integer from 1 to 255, random integer from 1 to 255, random integer from 1 to 255]]
```





Practical Example 1:

Clock. Timer. Flashing colors on the screen.

Design section



App Inventor

The screenshot shows the MIT App Inventor Designer interface. The project is titled "ATA_09". In the Components palette, a "Slider" component is selected. The Components panel shows "Screen1" listed. The Properties panel displays the following settings for "Screen1":

- Screen1
- AboutScreen
- AccentColor: Default
- AlignHorizontal: Left : 1
- AlignVertical: Top : 1
- AppName: ATA_09
- BackgroundColor: Default
- BackgroundImage: None...
- BlocksToolkit: All
- CloseScreenAnimation: Default
- Icon: None...
- OpenScreenAnimation: Default
- PrimaryColor: Default
- PrimaryColorDark: PrimaryColorDark

The Designer tab is selected in the top right corner. The status bar at the bottom right shows the date and time: 22/11/2020 09:03.



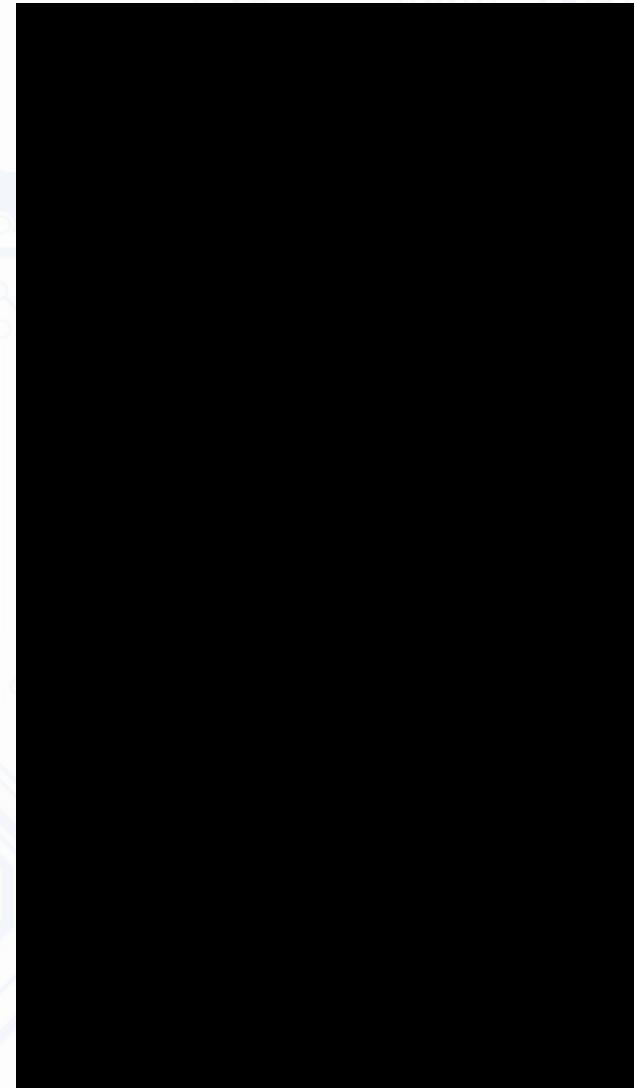
Practical Example 1:

Clock. Timer. Flashing colors on the screen.

Design section



Demo #1:
The error in performance





Practical Example 1:

Clock. Timer. Flashing colors on the screen.

Design section



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MIT APP INVENTOR

ATA_09 Screen1 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

Palette

- clock
- Clock

User Interface

- Button
- CheckBox
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox
- TimePicker
- WebView

Display hidden components in Viewer
Phone size (505,320)

Screen1

Text for Label1

Components

- Screen1
- Slider1
- Label1
- Clock1

Properties

Slider1

- ColorLeft: Default
- ColorRight: Black
- Width: Fill parent...
- MaxValue: 2000
- MinValue: 1
- ThumbEnabled: checked
- ThumbPosition: 30.0
- Visible: checked

Media

Upload File ...

Download audio from this page ? X

Layout

Windows taskbar icons

09:23 ENG 22/11/2020

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App Inventor



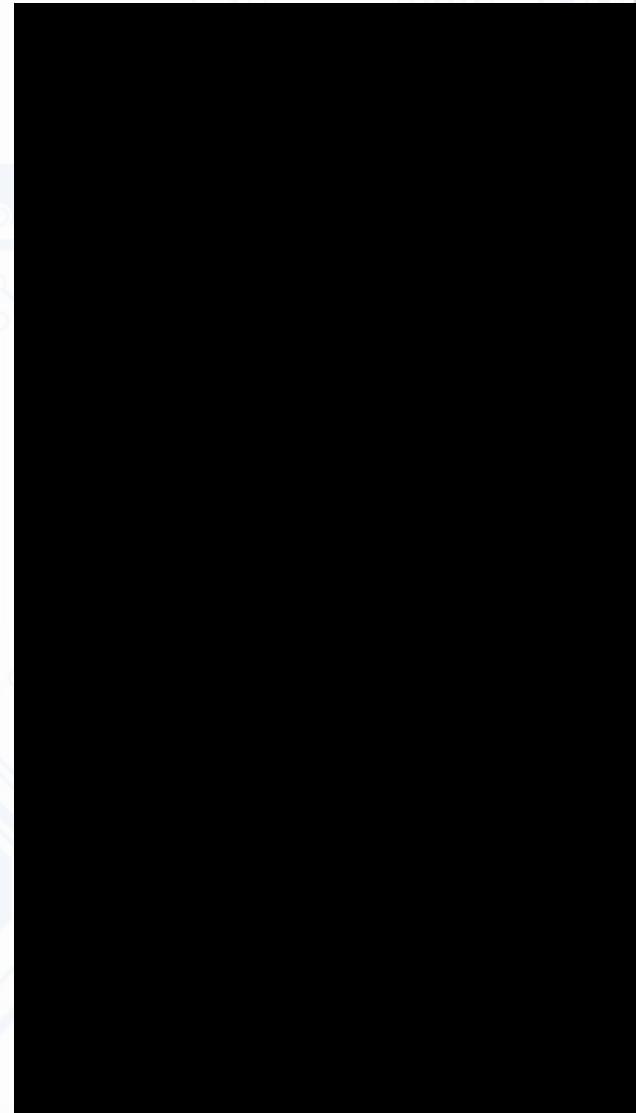
Practical Example 1:

Clock. Timer. Flashing colors on the screen.

Design section



Demo after
correction



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MOBILE APPLICATION DEVELOPMENT

**Practical Example 2:
Clock. Traffic light.**



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App Inventor



Practical Example 2:

Clock. Traffic light.



Design section

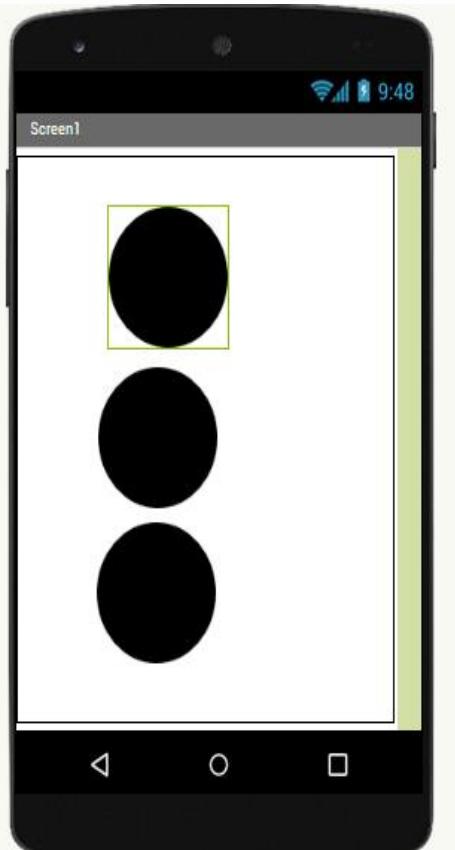
- We place one **Canvas**. Width: **Fill parent**, and Height: **400 pixel**.
- - **Three balls** (50, 10) (50, 90) (50, 170). Radio: 40
- - A **Slider** with values between **MinValue 1** and **MaxValue 200**

Block section

- Variable: Add
 - Each time a occurs Interval Timer:
 - one unit is counted: add = add + 1
 - If add is > 16 then add back to 0 (new series)
 - If add is <= 6 then Red
 - If add is > 6 And add is <= 9 then Yellow
 - If add is > 9 then Color Green



Practical Example 2: Clock. Traffic light.



Non-visible components



Components

- Screen1
- Canvas1
 - Ball1
 - Ball2
 - Ball3
- Slider1
- Clock1

Properties

Ball1

Enabled

Heading

Interval

OriginAtCenter

PaintColor Default

Radius

Speed

Visible

X

Y

Z

Rename Delete

Media

Upload File ...

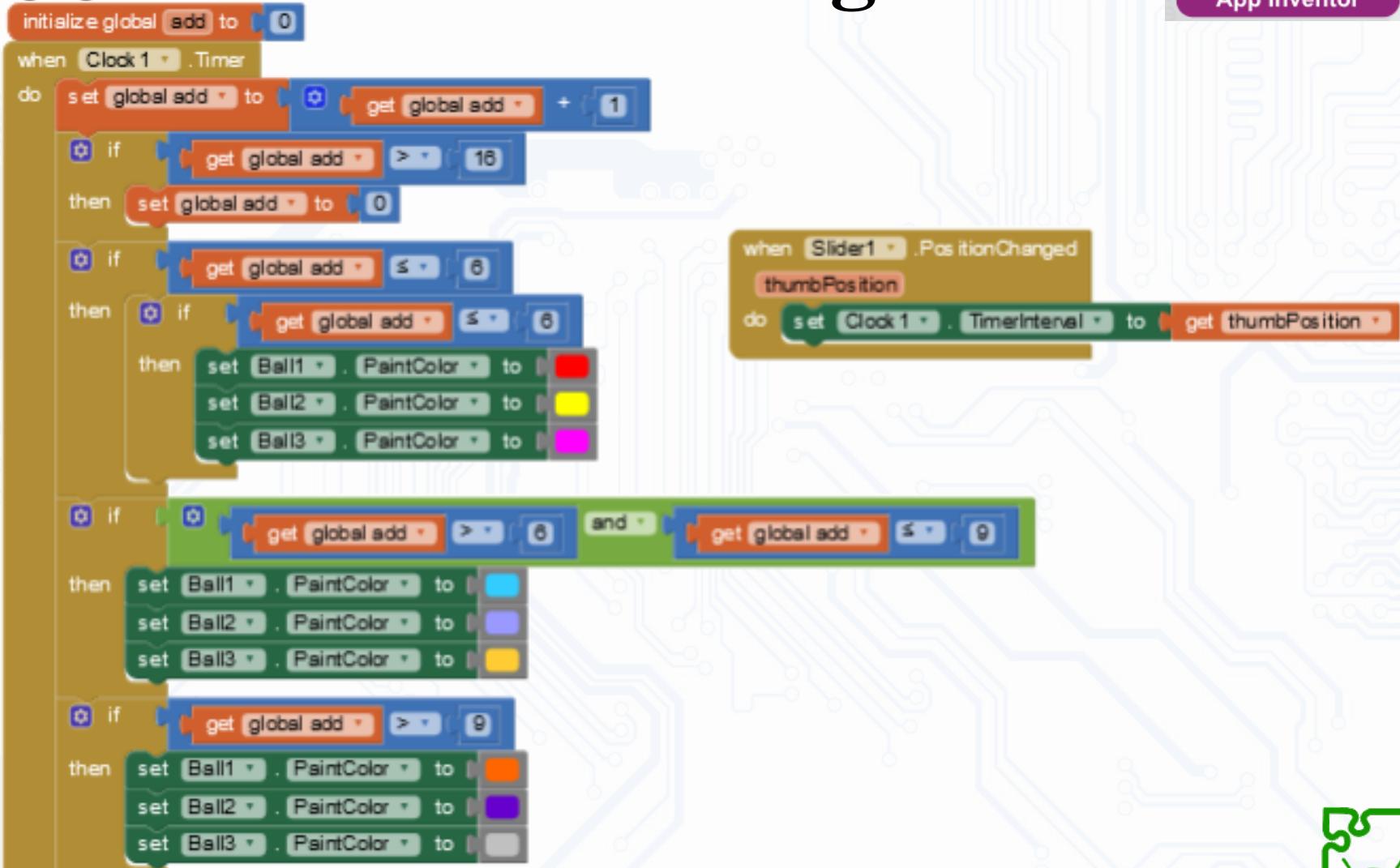


Practical Example 2:

Clock. Traffic light.



App Inventor



The Scratch script consists of two main sections. The first section, triggered by a timer, increments a global variable 'add' by 1 every second. It then checks the value of 'add'. If it's greater than 16, it sets 'add' back to 0. If 'add' is less than or equal to 6, it changes the color of three balls (Ball1, Ball2, Ball3) to red, yellow, and green respectively. If 'add' is between 6 and 9, it changes the colors to blue, purple, and orange. If 'add' is greater than 9, it changes the colors to orange, purple, and grey. The second section, triggered by a slider change, sets the timer interval to the current slider position.

```
when [Clock 1] .Timer
do
  set [global add v] to [0]
  if [get [global add v] > v 16] then
    set [global add v] to [0]
  if [get [global add v] ≤ v 6] then
    set [Ball1 v].PaintColor to [red]
    set [Ball2 v].PaintColor to [yellow]
    set [Ball3 v].PaintColor to [green]
  if [get [global add v] > v 6 and get [global add v] ≤ v 9] then
    set [Ball1 v].PaintColor to [blue]
    set [Ball2 v].PaintColor to [purple]
    set [Ball3 v].PaintColor to [orange]
  if [get [global add v] > v 9] then
    set [Ball1 v].PaintColor to [orange]
    set [Ball2 v].PaintColor to [purple]
    set [Ball3 v].PaintColor to [grey]
end
when [Slider1] .PositionChanged
  thumbPosition
do
  set [Clock 1] .TimerInterval to [get thumbPosition]
```



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App Inventor



Practical Example 2: Clock. Traffic light.



App Inventor

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ATA_010 Screen1 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

Palette

- Canvas
- CheckBox
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox
- TimePicker
- WebViewer

User Interface

Components

Properties

Screen1

AboutScreen

AccentColor Default

AlignHorizontal Left : 1

AlignVertical Top : 1

AppName ATA_010

BackgroundColor Default

BackgroundImage None...

BlocksToolkit All

CloseScreenAnimation Default

Icon None...

OpenScreenAnimation Default

PrimaryColor Default

PrimaryColorDark

Display hidden components in Viewer

Phone size (505,320)

Screen1

Rename Delete

Upload File ...

The screenshot shows the MIT App Inventor interface for a project titled "ATA_010". The interface is divided into several panels: a palette on the left containing various UI components like Button, CheckBox, and Image; a viewer in the center displaying a smartphone screen with a single white square placeholder; and a properties panel on the right for the current screen. The properties panel includes fields for AboutScreen, AccentColor, AlignHorizontal, AlignVertical, AppName, BackgroundColor, BackgroundImage, BlocksToolkit, CloseScreenAnimation, Icon, OpenScreenAnimation, PrimaryColor, and PrimaryColorDark. The viewer panel also has settings for Display hidden components in Viewer and Phone size (505,320). The top navigation bar includes links for Getting Started, PID, Basic functions related..., and other resources in multiple languages. The bottom taskbar shows various application icons.



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App Inventor



Practical Example 2: Clock. Traffic light.



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ATA_010 Screen1 Add Screen... Remove Screen Publish to Gallery Designer Blocks

Blocks Viewer

initialize global [add] to 0

when [Clock1] .Timer
do
 if [get global add > v 16]
 then [set global add to 0]
 if [get global add ≤ v 6]
 then [set Ball1 . PaintColor to red]
 [set Ball2 . PaintColor to yellow]
 [set Ball3 . PaintColor to magenta]
 if [get global add > v 6] and [get global add ≤ v 9]
 then [set Ball1 . PaintColor to blue]
 [set Ball2 . PaintColor to purple]
 [set Ball3 . PaintColor to yellow]
 if [get global add ≤ v 6]
 then [set Ball1 . PaintColor to red]
 [set Ball2 . PaintColor to yellow]
 [set Ball3 . PaintColor to magenta]

set global add to + 1
if [get global add > v 9]
then [set Ball1 . PaintColor to red]
[set Ball2 . PaintColor to yellow]
[set Ball3 . PaintColor to magenta]

if [get global add ≤ v 6]
then [set Ball1 . PaintColor to red]
[set Ball2 . PaintColor to yellow]
[set Ball3 . PaintColor to magenta]

Show Warnings

Privacy Policy and Terms of Use

9:47 22/11/2020 ENG

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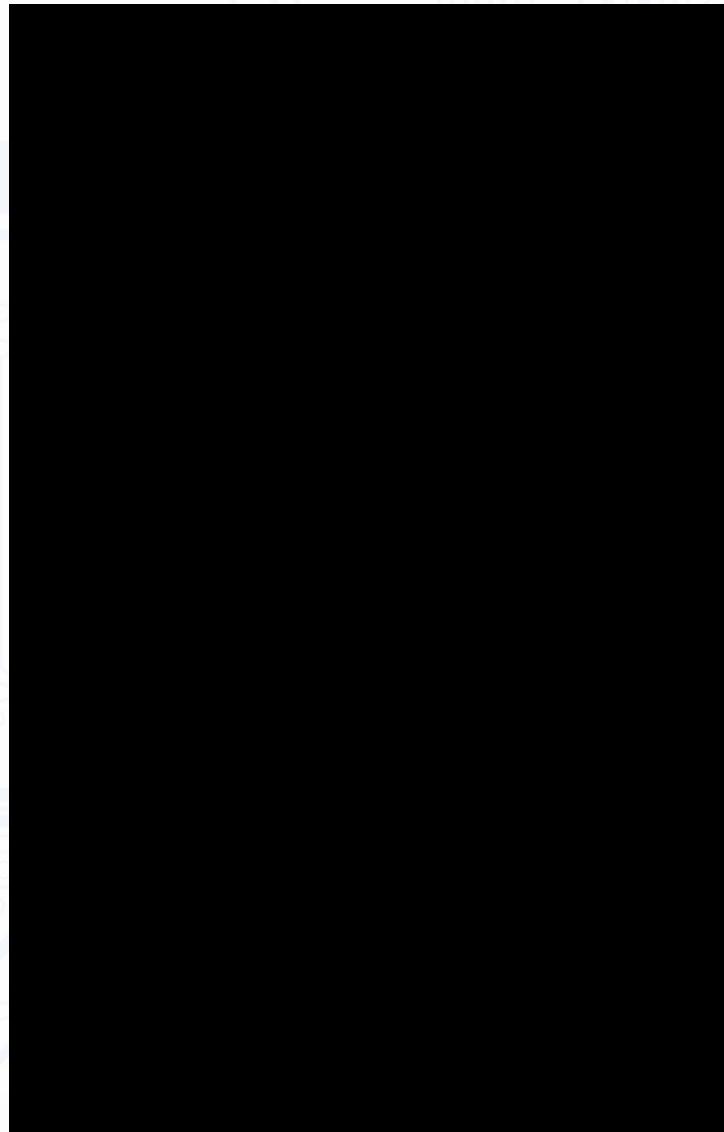
App Inventor



Practical Example 2: Clock. Traffic light.



*Demo On Clock
Traffic Light*



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Mobile application development

移动应用开发



Lecture 013: APP Inventor_enviroment Clock/ Time/Date

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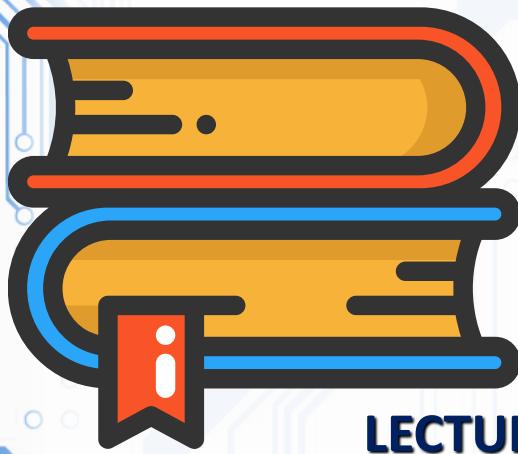
EMAIL: ajm@jxust.edu.cn

Autumn _2021



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MOBILE APPLICATION DEVELOPMENT

LECTURE 013:

APP Inventor_enviroment

Clock/ Time/Date Continue part



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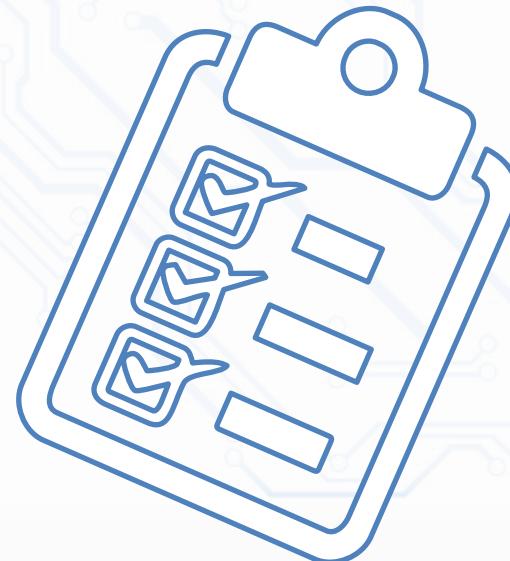
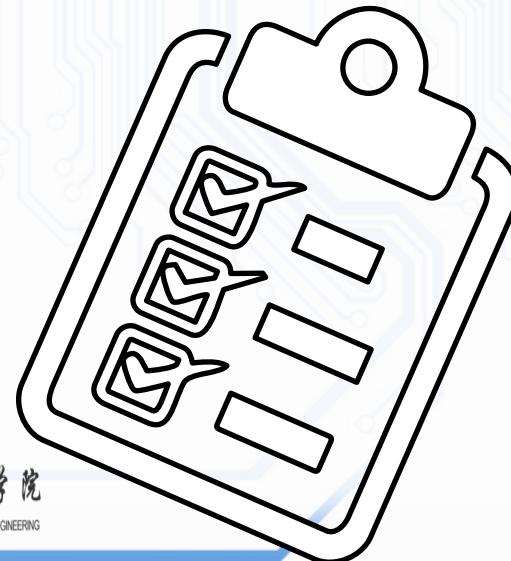
Agenda

Clock/ Time/Date

Practical Example 3& 4: Demo and run

Practical Example 5: Set /Change the time and date

Practical Example 6: The TimePicker and DatePicker User Interface Controls





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Continue part





Time /Date



- Entering the date and time are common features of business applications.
- We could use a text edit box and let the user type in times (like 10:30) or dates (12 January 2015) but both methods require the user to enter the time or date in the proper format – and the app needs to test the entered data to ensure it was entered correctly.
- *A better solution is to use App Inventor's TimePicker and DatePicker controls. Both provide a graphical method of selecting input values.*





Date/ Time Picker

Date Picker:

A button that, when clicked on, launches a popup dialog to allow the user to select a date on the Gregorian Calendar.



TimePicker:

A button that, when clicked on, opens a dialog to allow the user to select a time.

Note: Date and time are manipulated using methods in the Clock component.



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MOBILE APPLICATION DEVELOPMENT

Practical Example 3& 4:

Demo and run



Practical Example 3:

get time clock with hours and minute

- How to use the timer in app

Practical Example 3

This screenshot shows the SAP Fiori Launchpad interface for creating a new application. The main area displays a mobile phone icon with a placeholder message: "Display Add-in components in Fiori" and "(Check if user viewing in tablet view)".

The left sidebar lists available components under the heading "Available".

Category	Component	Count
User Interface	Button	0
User Interface	Checklist	0
User Interface	DatePicker	0
User Interface	Image	0
User Interface	List	0
User Interface	ListPicker	0
User Interface	Table	0
User Interface	Text	0
User Interface	TextArea	0
User Interface	Title	0
User Interface	PasswordEntry	0
User Interface	Image	0
Labeled	Label	0
Media	Image	0
Drawing and Animation	Image	0
Sensors	Image	0
Social	Image	0
Storage	Image	0

The right sidebar shows the properties for the currently selected component, which is a "Text" component.

Properties:

- Screen: [Placeholder]
- Additional:
- Background Left: [Placeholder]
- Background Top: [Placeholder]
- Bottom: [Placeholder]
- Background Color: White
- Background Image: None
- Background Animation: Default
- Top: [Placeholder]
- Bottom: [Placeholder]
- Open State Animation: Default
- Icon: [Placeholder]
- Icon Animation: Unspecified
- Icon Color: Black
- Icon Position: Top
- Icon Size: Large

The bottom navigation bar includes icons for Home, Search, Help, and Logout, along with the current date and time (429 PM, 2016-12-30).



Practical Example 4 :Stopwatch

- Making the Timer APP

stopper

Screen1

Add Screen...

Remove Screen

Designer

Blocks

Palette

User Interface

- Button
- CheckBox
- Doc
- Image
- Label
- ListView
- Number
- PasswordTextBox
- Slider
- TextBox
- WebView

Layout

Media

Drawing and Animation

Sensors

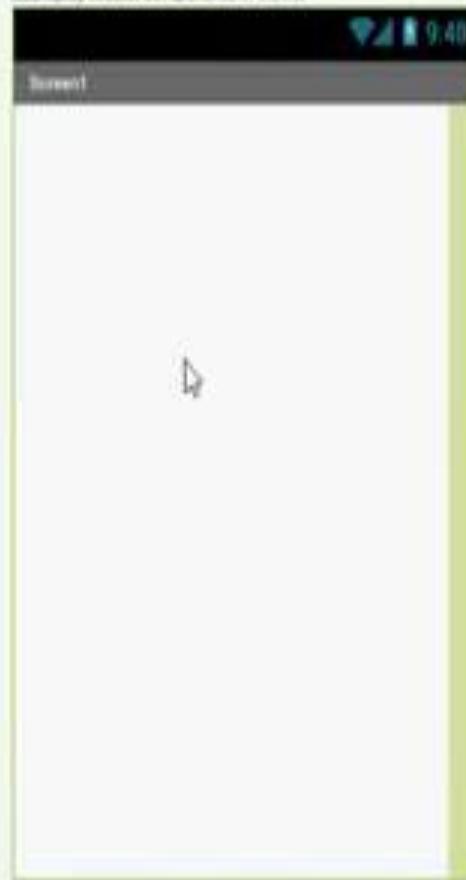
Social

Storage

Connectivity

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Viewer

 Display hidden components in Viewer

Components

Screen1

Rename Delete

Media

Upload File

Properties

Screen1

AboutScreen

AlignHorizontal

Left

AlignVertical

Top

BackgroundColor

White

BackgroundImage

None

CloseScreenAnimation

Default

Icon

None

OpenScreenAnimation

Default

ScreenOrientation

Unspecified

Scalable

✓

Title

Screen1



MOBILE APPLICATION DEVELOPMENT

Practical Example 5:

Set /Change the time and date



Practical Example 5: Set / Change the time and date



- Used to **Set / Change the time and date**.
- In reality as its name suggests is a Selector date/time to choose a date/time, but it serves to change the time mobile for example.





Practical Example 5: Set / Change the time and date

The screenshot shows the App Inventor development environment. On the left is the Palette, which lists various UI components like Button, CheckBox, DatePicker, Image, Label, etc. In the center is the Components panel, which shows the structure of the screen with components like Screen1, TableArrangement1, TimePicker1, DatePicker1, and several Labels. To the right is the Properties panel, where settings such as AccentColor, AlignHorizontal, AlignVertical, AppName, BackgroundColor, BackgroundImage, BlocksToolkit, and CloseScreenAnimation can be configured. The preview window shows a smartphone screen titled "Screen1" with two tabs: "DATE" and "Time". Below the tabs are two buttons: "TIME" and "DATE". To the right of these buttons is a vertical stack of colored bars (yellow, green) and a "Set" button.





Practical Example 5:

Set / Change the time and date



- When you press Button **TimePicker1** or **DatePicker1**, you get a calendar where you can change the time and date.
 - In our case then show the time and date on a label.
- -we used a simple procedure for the same Label the time and date shown. If you press repeatedly **TimePicker1**, it will show several hours.



Practical Example 5:

Set / Change the time and date

Screenshot of the MIT App Inventor 2 interface showing the creation of a mobile application.

The application is titled "ATA_011A" and contains one screen named "Screen1".

The Components panel shows "Screen1" selected. The Properties panel displays the following settings for "Screen1":

- AccentColor: Default
- AlignHorizontal: Left : 1
- AlignVertical: Top : 1
- AppName: ATA_011A
- BackgroundColor: Default
- BackgroundImage: None...
- BlocksToolkit: All
- CloseScreenAnimation: Default
- Icon: None...
- OpenScreenAnimation: Default
- PrimaryColor: Default
- PrimaryColorDark: Default
- ScreenOrientation: Unspecified
- Scalable: Yes

The Viewer panel shows a smartphone mockup with the screen titled "Screen1". The phone's status bar indicates the time is 9:48. The bottom navigation bar shows standard Android icons (back, home, recent apps).

The Palette panel lists various components under "User Interface" and "Layout".

The browser address bar shows the URL: ai2.appinventor.mit.edu/#4565452862128128.

The system tray at the bottom right shows the date (22/11/2020), time (11:59), and battery level (ENG).



Practical Example 5: Set / Change the time and date

The screenshot shows the MIT App Inventor 2 environment with the following details:

- Title Bar:** App inventor. File. X, MIT App Inventor X, AI Using TimePicker ar X, Chapwww.BANDICAM.com X, User Interface X, App inventor. Date X, +.
- Address Bar:** ai2.appinventor.mit.edu/#4565452862128128
- Project Title:** ATA_011A
- Blocks View:** Displays two main blocks:

 - Date Block:** when DatePicker1 . AfterDateSet
do set Label1 . Text to join [Day, Month, Year]
- Day
- DatePicker1 . Day
- Month
- DatePicker1 . MonthInText
- Year
- DatePicker1 . Year
 - Time Block:** when TimePicker1 . AfterTimeSet
do set Label1 . Text to join [Label1 . Text, Its, Hour, and, Minute]
- Label1 . Text
- Its
- TimePicker1 . Hour
- and
- TimePicker1 . Minute
- Minute

- Sidebar:** Shows categories like Built-in, Screen1, and Any component, along with a Backpack icon.
- Bottom Bar:** Includes icons for Windows Start, Search, Task View, File, Settings, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Mozilla Firefox, Google Chrome, and a camera icon. It also shows the date (22/11/2020) and time (12:04), and language (ENG).





Practical Example 5:

Set / Change the time and date

The screenshot shows the MIT App Inventor 2 environment with two blocks of code on the workspace.

Block 1 (Top Left):

```
when [DatePicker1] .AfterDateSet
do
  set [Label1] .Text to
    join [Day]
      [DatePicker1] .Day
      [Month]
      [DatePicker1] .MonthInText
      [Year]
      [DatePicker1] .Year
```

Block 2 (Bottom Left):

```
when [TimePicker1] .AfterTimeSet
do
  set [Label1] .Text to
    join [Text]
      [It's]
      [TimePicker1] .Hour
      [and]
      [TimePicker1] .Minute
      [Minute]
```

Block 3 (Right):

```
when [Button1] .Click
do
  call [DatePicker1] .SetDateToDisplay
  year 2016
  month 10
  day 4
  call [TimePicker1] .SetTimeToDisplay
  hour 10
  minute 20
  call [DatePicker1] .LaunchPicker
  call [TimePicker1] .LaunchPicker
```

The interface includes a sidebar with component definitions (e.g., Screen1, DatePicker1, TimePicker1, Label1, Button1), a media section, and a blocks palette. The status bar at the bottom shows system icons and the date/time (12:10, 22/11/2020).





Practical Example 5:

Set / Change the time and date

The screenshot shows the MIT App Inventor 2 interface with the project titled "ATA_011A". The code is organized into two main sections:

- when DatePicker1.AfterDataSet**: This section sets the text of Label1 to a string that joins the Day, Month, Year, and Year from the DatePicker1 component.
- when TimePicker1.AfterTimeSet**: This section sets the text of Label1 to a string that joins the Hour, minute, and minute from the TimePicker1 component.
- when SET.Click**: This section calls the SetDateToDisplay and SetTimeToDisplay methods of the DatePicker1 and TimePicker1 components respectively, passing the current year (2018), month (10), day (4), hour (10), and minute (20). It also calls the LaunchPicker method for both components.

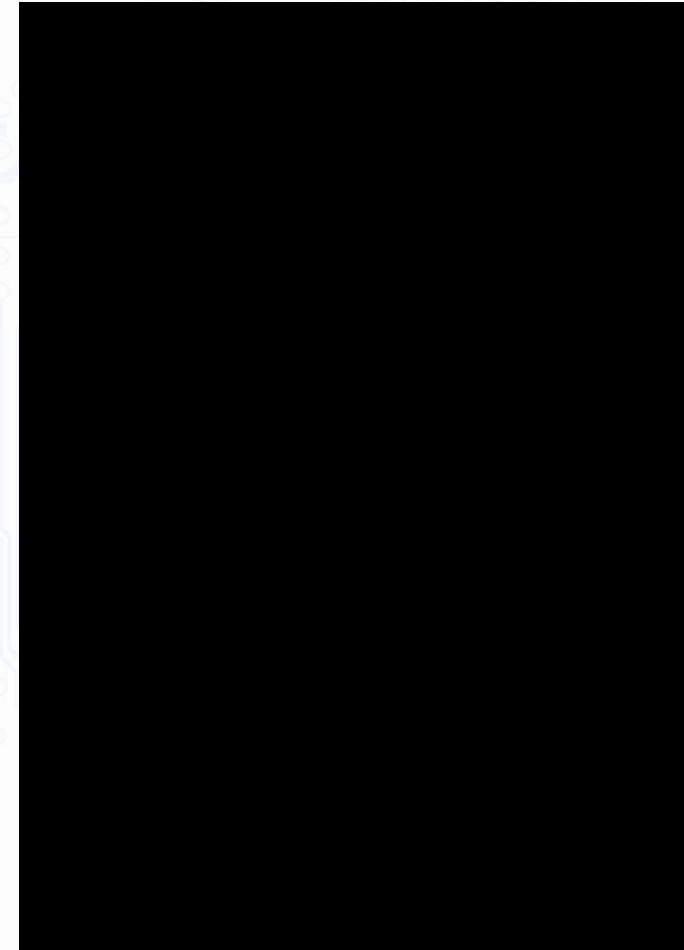




Practical Example 5:

Set / Change the time and date

The error occur after
making the apk





Practical Example 5: Set / Change the time and date

The screenshot shows the MIT App Inventor interface with the project titled "ATA_011A". The code in the Blocks tab is as follows:

```
when DatePicker1.AfterDateSet
do set Label1.Text to join [Day] [DatePicker1.Day]
[Month] [DatePicker1.MonthInText]
[Year] [DatePicker1.Year]

when TimePicker1.AfterTimeSet
do set Label2.Text to join [Its] [TimePicker1.Hour]
[and] [TimePicker1.Minute]

when SET.Click
do call DatePicker1.SetDateToDisplay
year 2016
month 10
day 4
call TimePicker1.SetTimeToDisplay
hour 10
minute 20
call DatePicker1.LaunchPicker
call TimePicker1.LaunchPicker
```

The interface includes a toolbar at the top with tabs like "App inventor. File.", "MIT App Inventor", "AI Using TimePicker ai", "Chap", "www.BANDIGAM.com", "User Interface", "App inventor. Date", and "Design". Below the toolbar is a browser-like address bar showing "ai2.appinventor.mit.edu/#4565452862128128". The main workspace has a green header bar with "Screen1", "Add Screen...", "Remove Screen", and "Publish to Gallery" buttons. On the right side, there's a "Designer" tab and a "Blocks" tab. A blue backpack icon is visible in the top right corner of the workspace.

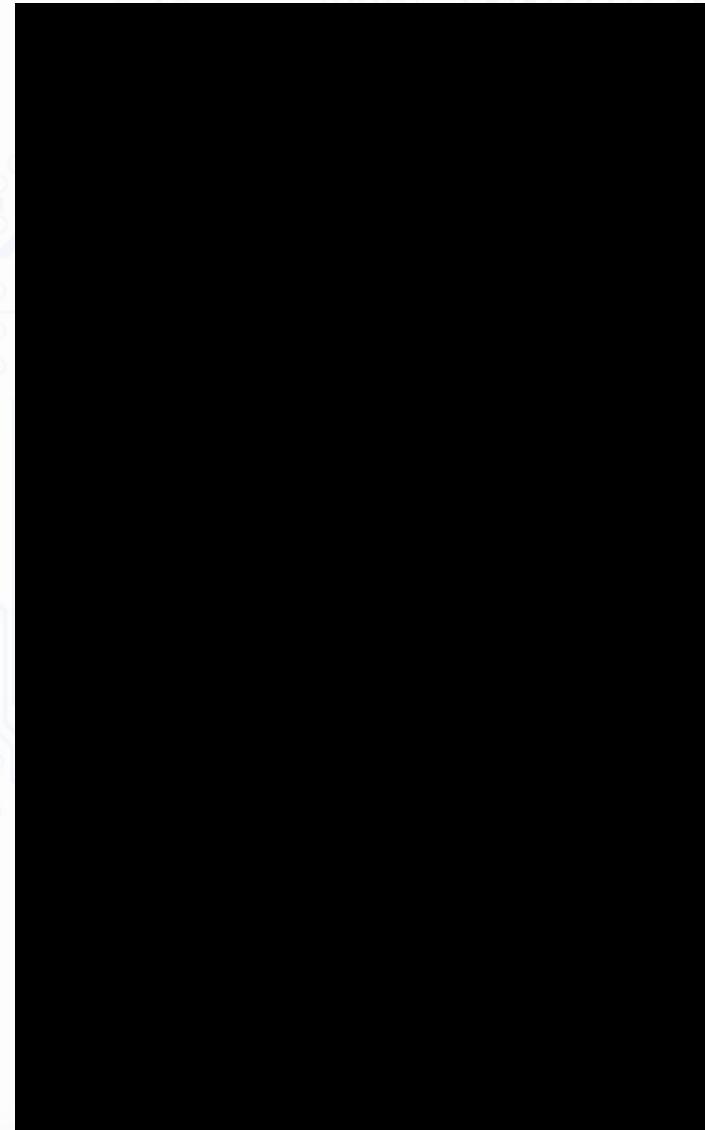




Practical Example 5:

Set / Change the time and date

Demo on
example





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MOBILE APPLICATION DEVELOPMENT

Practical Example 6:

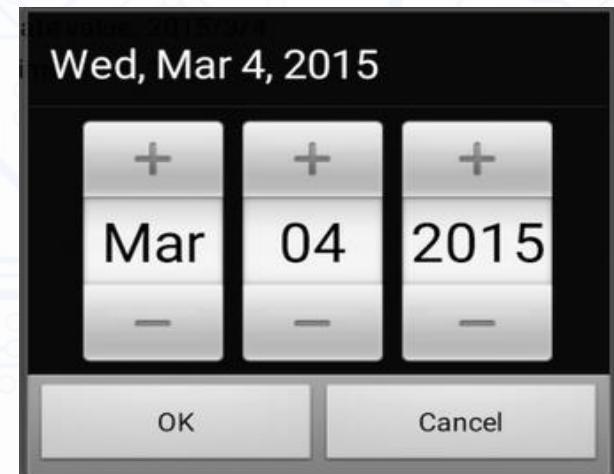
The Time Picker and Date
Picker User Interface Controls



Practical Example 6: The TimePicker and DatePicker User Interface Controls



- In this example we want The time is set by pressing the + or – buttons above and below the hours and minutes.
- The AM/PM indicator is a toggle – when it shows PM, a press changes it to AM, and when it shows AM, a press changes it to PM.
- With this input system, the user can never entered an invalid time (the user could, of course, enter the wrong time, but that is a different problem!)



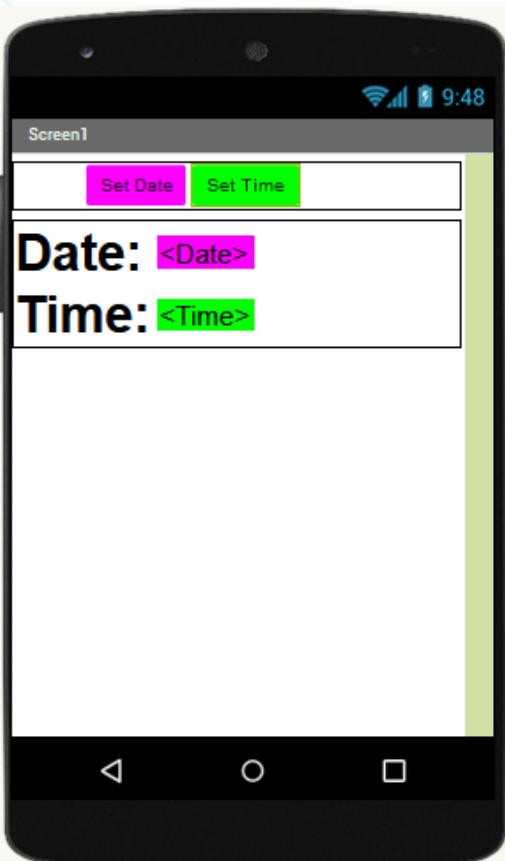


Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor



Components

- Screen1
 - TableArrangement1
 - DatePicker1
 - TimePicker1
 - TableArrangement2
 - Label3_Time_Value
 - Date_value
 - Time_Value
 - Label1_Date_Value
 - Clock1

Properties

TimePicker1

- BackgroundColor
Green
- Enabled
- FontBold
- FontItalic
- FontSize
14.0
- FontTypeface
default
- Height
Automatic...
- Width
Automatic...
- Image
None...
- Shape
default
- ShowFeedback
- Text
Set Time

Media

Rename Delete Upload File ...





Practical Example 6:

The TimePicker and DatePicker User Interface Controls



- To obtain the current date and time, our app calls the *Clock1* control. Times are stored in an internal format that is based on milliseconds, since the year 1970. This peculiar format is produced by the Clock control but must be converted into year, month, day, and hour and minute values.
- Step 1 is to obtain the *CurrentTime*. This is done by referencing the *Clock1.SystemTime* property (which is in the millisecond format) and then passing that to the *Clock1.MakeInstantFromMills* method and saving the result in the variable *CurrentTime*.
- Step 2 converts the *CurrentTime* value by using additional *Clock1* methods. for the Year, Month and DayofMonth.
- Step 3 obtains the hours and minutes but does so using an alternative method of calling *Clock1.Now* to obtain the current time. (We could have used this in place of the *MakeInstantFromMill* and *SystemTime* method shown above.)



Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

```
when Screen1.Initialize
do
  initialize local CurrentTime to 0
  in
    set Date_vale .Text to join (call Clock1 .MakeInstantFromMillis millis (call Clock1 .SystemTime
      set Date_vale .Text to join (call Clock1 .Year instant get CurrentTime
        "0" )
        call Clock1 .Month instant get CurrentTime
        "0" )
        call Clock1 .DayOfMonth instant get CurrentTime
        set Time_Value .Text to join (call Clock1 .Hour instant call Clock1 .Now
          "0" )
          call Clock1 .Minute instant call Clock1 .Now
        )
      )
    )
  )
when DatePicker1.AfterDataSet
do
  set Date_vale .Text to join (DatePicker1 .Year
    "0" )
    DatePicker1 .MonthInText
    "0" )
    DatePicker1 .Day
```

```
when TimePicker1.AfterTimeSet
do
  initialize local Hours to 0
  initialize local AMPMINDICATOR to "AM"
  initialize local CurrentMinute to 0
  initialize local FormattedTime to "0"
  in
    set (Hours) to TimePicker1 .Hour
    set CurrentMinute to TimePicker1 .Minute
    if get Hours > 12
      then set Hours to get Hours - 12
      set AMPMINDICATOR to "PM"
    else if get Hours = 12
      then set AMPMINDICATOR to "PM"
    else if get Hours = 0
      then set Hours to 12
    if get CurrentMinute < 10
      then set FormattedTime to join ("0" get CurrentMinute)
    else set FormattedTime to get CurrentMinute
    set Time_Value .Text to join (get Hours
      "0" )
      get FormattedTime
      get AMPMINDICATOR
```





Practical Example 6:

The TimePicker and DatePicker User Interface Controls



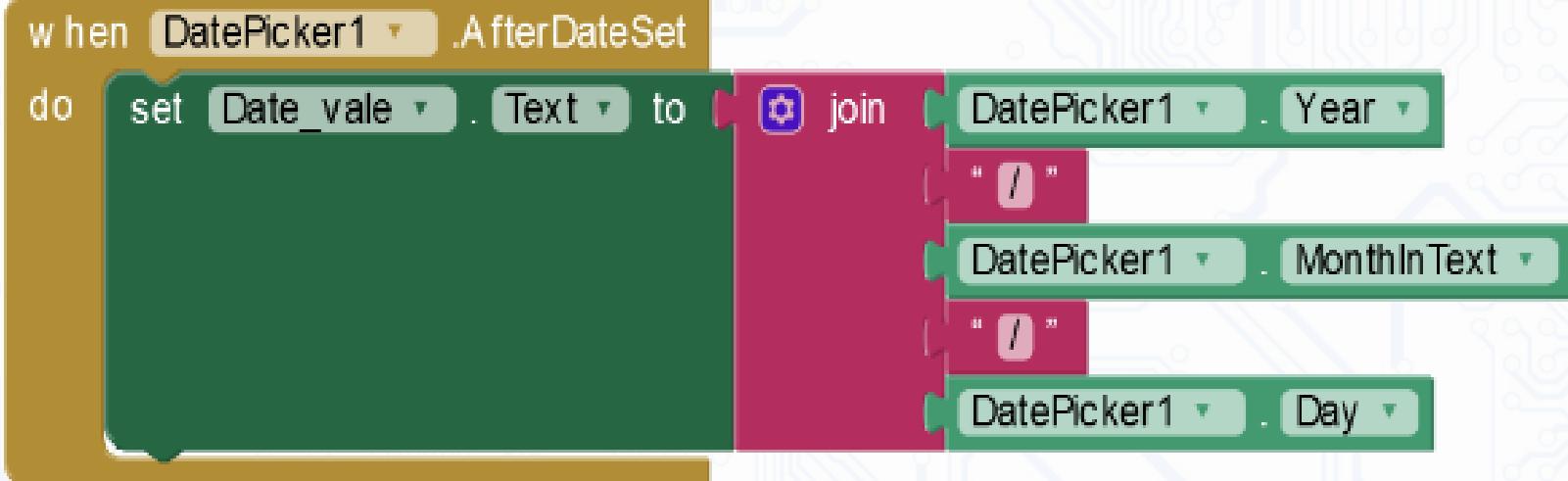
```
when Screen1.Initialize
do
  initialize local CurrentTime to 0
  in set CurrentTime to call Clock1.MakelnstantFromMillis
    millis (call Clock1.SystemTime)
    set Date_value.Text to join (call Clock1.Year
      instant get CurrentTime)
    * /
    call Clock1.Month
    instant get CurrentTime
    * /
    call Clock1.DayOfMonth
    instant get CurrentTime
    set Time_Value.Text to join (call Clock1.Hour
      instant call Clock1.Now)
    * /
    call Clock1.Minute
    instant call Clock1.Now
```





Practical Example 6:

The TimePicker and DatePicker User Interface Controls





Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

```
when TimePicker1 .AfterTimeSet
do
  initialize local Hours to 0
  initialize local AMPMINDICATOR to "AM"
  initialize local CurrentMinute to 0
  initialize local FormattedTime to ""
in
  set Hours to TimePicker1 .Hour
  set CurrentMinute to TimePicker1 .Minute
  if get Hours > 12
    then set Hours to get Hours - 12
    set AMPMINDICATOR to "PM"
  else if get Hours = 12
    then set AMPMINDICATOR to "PM"
  else if get Hours = 0
    then set Hours to 12
  if get CurrentMinute < 10
    then set FormattedTime to join ("0", get CurrentMinute)
  else set FormattedTime to get CurrentMinute
  set Time_Value .Text to join (get Hours, ":", get FormattedTime, " ", get AMPMINDICATOR)
```



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App Inventor



Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

Screenshot of the MIT App Inventor 2 interface showing the design of a mobile application.

The project title is "ATA_011".

The Components panel shows a single component named "Screen1".

The Properties panel displays the following settings for "Screen1":

- AppName: ATA_011
- BackgroundColor: Default
- BackgroundImage: None...
- BlocksToolkit: All
- CloseScreenAnimation: Default
- Icon: None...
- OpenScreenAnimation: Default
- PrimaryColor: Default
- PrimaryColorDark: None...

The Viewer panel shows a smartphone screen with the title "Screen1" and a blank white content area.

The Palette panel lists various UI components under the "UserInterface" category, including Button, CheckBox, DatePicker, Image, Label, ListPicker, ListView, Notifier, PasswordTextBox, Slider, Spinner, Switch, TextBox, TimePicker, and WebViewer.

The bottom taskbar includes icons for Windows, search, task view, file, browser, and system controls.



Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

Screenshot of the MIT App Inventor web-based development environment.

Project Title: ATA_011

Screen: Screen1

Blocks View:

- Built-in:
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1:
 - TableArrangement1
 - Set_Date
 - Set_Time
 - TableArrangement2
 - Label3_Time_Value
 - Date_value

Media View:

- Upload File ...

Warnings:

- 0
- 0

Bottom Navigation Bar:

- Download audio from this page
- Privacy Policy and Terms of Use

System Status Bar:

- Windows Taskbar icons
- 10:50
- ENG
- 22/11/2020



Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

The screenshot shows the MIT App Inventor development environment. The top bar includes tabs for "App inventor. File. TinyDB. Tiny", "MIT App Inventor", and "Using TimePic...". The browser address bar shows "ai2.appinventor.mit.edu/#5883165404430336". The main workspace displays a mobile phone screen with a user interface consisting of two buttons ("Set Date" and "Set Time") and two text labels ("Date: <Date>" and "Time: <Time>"). The "Components" panel on the right lists "Screen1", "TableArrangement1" (containing "Set Date" and "Set Time"), "TableArrangement2" (containing "Label3_Time_Value", "Date_value", "Time_Value", and "Label1_Date_Value"), and "Clock1". The "Properties" panel provides settings for "Screen1" such as "AppName" (ATA_011), "BackgroundColor" (Default), and "PrimaryColor" (Default). The bottom of the screen shows a taskbar with various application icons.





Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

The screenshot shows the MIT App Inventor interface with the following details:

- Title Bar:** App inventor. File. TinyDB. Tiny X, MIT App Inventor X, AI Using TimePic and timers - X.
- Toolbar:** Getting Started, PID, Basic functions related..., موزشن زبان | JRM | Fuji Technology ...
- Header:** MIT APP INVENTOR, Projects, Connect, Build, Settings, Help, My Projects, View Trash, Guide, Report an Issue, English, moshaydi@gmail.com.
- Project Area:** Project name: ATA_011. Components: Screen1, TableArrangement1, Set_Time, DatePicker1, TableArrangement2, Label3_Time_Value, Date_val, Time_Value, Label1_Date_Value, Clock1.
- Properties Panel:** Screen1, AboutScreen, AccentColor (Default), AlignHorizontal (Left: 1), AlignVertical (Top: 1), AppName (ATA_011), BackgroundColor (Default), BackgroundImage (None...), BlocksToolkit (All), CloseScreenAnimation (Default), Icon (None...), OpenScreenAnimation (Default), PrimaryColor (Default), PrimaryColorDark.
- Components Palette:** Time, TimePicker, User Interface (Button, CheckBox, DatePicker, Image, Label, ListPicker, ListView, Notifier, PasswordTextBox, Slider, Spinner, Switch, TextBox, TimePicker, WebViewer).
- Viewer:** Shows a smartphone screen with the app's user interface. The UI includes a header with "Screen1", three buttons ("Set Date", "Set Time", "Text for TimePicker1"), and two text boxes labeled "Date: <Date>" and "Time: <Time>".
- Bottom Bar:** Windows taskbar with various icons like File Explorer, Edge, Word, and a clock showing 11:08, 22/11/2020.





Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

Screenshot of the MIT App Inventor 2 interface showing the code for a screen named "Screen1".

The code uses the Clock1 component to get the current time and date, and then displays it in a Text component using a Date Picker format.

```
lock1 . MakeInstantFromMillis
    millis call Clock1 . SystemTime
    join call Clock1 . Year
        instant get CurrentTime
    join call Clock1 . Month
        instant get CurrentTime
    join call Clock1 . DayOfMonth
        instant get CurrentTime
    join call Clock1 . Hour
        instant call Clock1 . Now
    join call Clock1 . Month
        instant call Clock1 . Now
do set Date_val . Text to join DatePicker1 . Year
    join DatePicker1 . MonthInText
    join DatePicker1 . Day
when TimePicker1 . AfterTimeSet
do initialize local Hours to 0
    initialize local AMPMINDICATOR to " AM "
    initialize local CurrentMinute to 0
    initialize local FormattedTime to " : "
    in set Hours to TimePicker1 . Hour
    set CurrentMinute to TimePicker1 . Minute
    if < get Hours > 12
        then set Hours to < get Hours - 12 >
        set AMPMINDICATOR to " PM "
    else if < get Hours = 12
        then set AMPMINDICATOR to " PM "
    else if < get Hours = 0
        then set AMPMINDICATOR to " AM "
```

Blocks palette on the left shows categories like Text, Lists, Dictionaries, Colors, Variables, Procedures, Screen1, TableArrangement1, TableArrangement2, and Any component.

Media palette at the bottom left shows a warning about audio download.

System tray icons at the bottom right include a battery, signal, volume, and network status.

Bottom right corner: JXUST School of Information Engineering logo, Date (22/11/2020), Time (11:32), Language (ENG), and App Inventor logo.



Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

Screenshot of the MIT App Inventor interface showing the code for a project titled "ATA_011".

The code uses the Clock1 component to get the current time and date. It then processes the time components (Year, Month, Day, Hour, Minute) and stores them in local variables. The project then handles the "TimePicker1.AfterTimeSet" event to update these variables based on the user's selection. Finally, it formats the time and displays it.

```
join(call(Clock1, .Year), instant(get(CurrentTime)), 0)
join(call(Clock1, .Month), instant(get(CurrentTime)), 0)
join(call(Clock1, .DayOfMonth), instant(get(CurrentTime)), 0)
join(call(Clock1, .Hour), instant(call(Clock1, .Now)), 0)
join(call(Clock1, .Minute), instant(call(Clock1, .Now)), 0)

when TimePicker1.AfterTimeSet
do
  initialize local Hours to 0
  initialize local AMPMINDICATOR to "AM"
  initialize local CurrentMinute to 0
  initialize local FormattedTime to ""
  in set Hours to TimePicker1.Hour
  set CurrentMinute to TimePicker1.Minute
  if get Hours > 12
    then set Hours to get Hours - 12
    set AMPMINDICATOR to "PM"
  else if get Hours = 12
    then set AMPMINDICATOR to "PM"
  else if get Hours = 0
    then set Hours to 12
  if get CurrentMinute < 10
    then
      FormattedTime = "0" + get CurrentMinute
    else
      FormattedTime = get CurrentMinute
```



Practical Example 6:

The TimePicker and DatePicker User Interface Controls



App Inventor

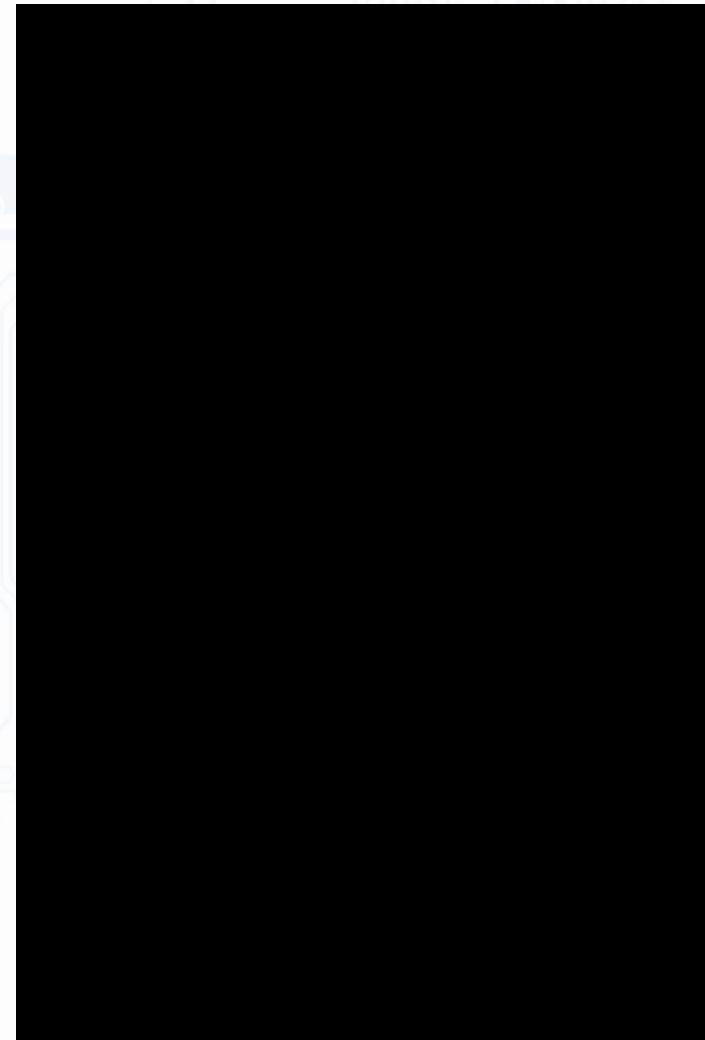
The screenshot shows the MIT App Inventor interface with the following details:

- Project Title:** ATA_011
- Screen:** Screen1
- Code View (Blocks Editor):**
 - The code uses the `join` block to combine strings.
 - It initializes a variable `FormattedTime` by setting `Hours` and `Minute` from `Clock1`.
 - An `if` block handles AM/PM conversion based on `Hours`.
 - If `get (Hours) > 12`, it sets `Hours` to `get (Hours) - 12` and `AMPMINDICATOR` to "PM".
 - If `get (Hours) = 12`, it sets `AMPMINDICATOR` to "PM".
 - If `get (Hours) = 0`, it sets `Hours` to 12.
 - If `get (CurrentMinute) < 10`, it adds a leading zero to the minute value.
 - Otherwise, it sets `FormattedTime` to `get (Hours)` followed by a colon and `get (CurrentMinute)`.
 - The final step is to set `Time_Value` to the `FormattedTime` string.
- Blocks Catalog:** Shows categories like Built-in, Control, Logic, Math, Text, Lists, Dictionaries, Colors, Variables, Procedures, and Screen1.
- Media:** Includes sections for Upload File and Download audio from this page.
- Toolbar:** Includes standard browser-like navigation buttons, a search bar, and a URL bar showing ai2.appinventor.mit.edu/#5883165404430336.



Practical Example 6:

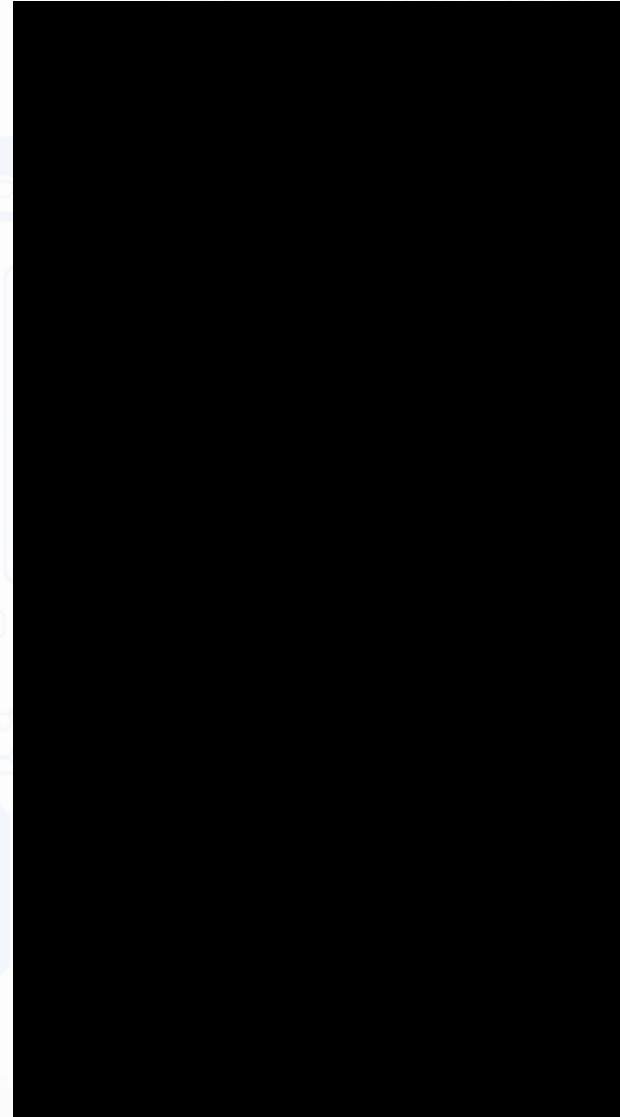
The TimePicker and DatePicker User Interface Controls





Practical Example 6:

The TimePicker and DatePicker User Interface Controls



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App Inventor



Student Task_9



- Repeat this examples and make based on our task format
Send the aia file for task 3 and 4 design and block section with video
 - And also write comment on example 5 and 6 about difference in acquiring the time and date

**Don't forget your id number
and name on all task and file**



Next lecture

- You have time to send your task
- Send the file in PPT(power point format) to **JUST MOOC**
- Your file should have this format of name
<Task number><student name><Student ID>.ppt



**NOBODY CAN DO
EVERYTHING, BUT
EVERYONE CAN DO
SOMETHING**

PictureQuotes.com





Reference

- <https://coldstreams.com/appinventor/2015/03/12/using-timepicker-and-datepicker-for-entering-time-and-date-information/>
- **Teaching with AppInventor** <http://appinventor.mit.edu/explore/teach.html>
AppInventor Tutorials:
<http://appinventor.mit.edu/explore/ai2/tutorials.html>
- **Sounds** <http://www.soundbible.com>
- **App Inventor:** <http://appinventor.googlelabs.com/>
- **Appinventor.org:** <http://www.appinventor.org/>
- **Wolber, Abelson et al. text:** <http://www.appinventor.org/text2011>
- **Group:** <http://groups.google.com/group/app-inventor-instructors>
- **Wolber course:** <http://appinventor.org/course-in-a-box>
- **Morelli course:** <http://turing.cs.trincoll.edu/~ram/cpsc110/>

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School of information engineering

Digital Image Processing

THANK YOU





**"BE HUMBLE. BE HUNGRY.
AND ALWAYS BE THE
HARDEST WORKER
IN THE ROOM."**

