CSIS 3375 Project

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CSIS 3375 Group Project

- **Goal:** In groups of 3 (or 2), create an android application prototype using Justinmind by applying concepts of design and android UI

  – Pick your own group
  – If you are unable to find a group, I will put you in groups with students who are also in a similar situation
  – In addition to doing your own project, you WILL review other projects and give critical feedback for them to improve

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Project Deliverables and Deadlines

- Group choice and basic idea for prototype:
  - Oct 25th, before class by email.
  - Cc all group members in the email.
- Project prototype: shared from justinmind
  - Nov 27th, 11:59 PM
  - Bring your own laptop to demo the project
- Project Report
  - Nov 27th, 11:59 PM – uploaded on blackboard
  - Nov 29th – hard copy for in-class presentation
- In-class presentation and demo

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Project Guidelines

- NAME:
  - Name for your app and motto (and logo if you like)
  - Capture the essence, communicate a metaphor
- ESSENCE:
  - What does your app do?
  - Why is it important?
- NOVELTY:
  - Market research for existing solutions
  - How is your solution different

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Project Guidelines

- PACT: Identify PACT elements for your app.
- Understanding:
  - Stories and use cases
  - Identify problem and solution space
- Requirements Gathering and generation
  - Must involve evaluation/user studies
  - List of requirements
    - Functional vs. non-functional
    - Must haves and more optional functions
- Mock-up sketches or prototypes
- Actual wireframing and prototyping (justinmind)
- Evaluation of created prototypes
  - Improve prototype based on feedback

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Project Report Guidelines

- Introduction
  - Name, motto, metaphors
  - Broad Motivation of Utility
  - What your app does – high level
  - Identify PACT elements
  - Outline personas and scenarios to motivate your app

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Project Report Guidelines

- Background research
  - Existing apps in the market that does similar things
  - Need for your app (clearly explaining how it will be different from others in terms of design)
  - Requirements – based on your observations
  - Requirements gathering – what methods did you use for requirements gathering
  - Results and insights from your requirements gathering studies
  - Story boards or mood boards that reflect your insights

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Project Report Guidelines

- Design
  - What are the main screens, their broad functions, individual features you have designed
  - Envisionment and task analysis for your app
  - What will be a typical interaction flow when using your app?
  - Include screenshots of all your main screens

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Project Report Guidelines

- Evaluation:
  - How did you evaluate your design?
  - What methods did you use?
  - What were the results of your evaluation?
  - You must use at least 2 class-mates for evaluating your design, and 2-other outside folks to review your prototype

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Project Report Guidelines

- Conclusion:
  - Did you think your design achieved your goals? If yes, how? If not, why not?
  - Broad insights or lessons learned from the design project
    - What are your broad take-aways or learned insights from doing this design project?

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Project Report Guidelines

- References:
  - Any sources you used for your project
- Appendix:
  - Must include all study/methodology materials used such as surveys, interview questions, other such material used in requirements and evaluation – clear title indicating what they were used for.
  - Any other figures and tables not included in the main design sections.

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Project Report

- Format: 10-15 pages (excluding references and appendix), 12 point font
- Additional pages for references or pictures may be used
- Final project presentations and report date
  - Nov 29 (due in class at start of class)

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Project presentation, demo and defense

- Bring printed report to class (one report per group)
- In-class group presentation and defense:
- 1-minute description of the app
- In-class demo of the app: 5 minutes
- 6-minute Defense: answering questions posed by me
  - Any student in the group will be questioned about any part of the code
  - EVERYONE should know each aspect of the project

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Project presentation

- Use minimal text
- Plan your presentation
- Practice your presentation for time and content
- Use graphics, images, animations (not too many animations to save time)
- Clear, thought-out delivery of your talk
- Ability to extend and answer questions posed

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Overall grading guidelines

- Report will be graded for:
  - Originality of app
  - Background research and well motivated ideas
  - Research methods used for requirements gathering, and evaluation
  - Clear Design and task analysis
  - Evaluation insights
  - Project insights/lessons learned
  - Overall clarity and flow in writing
  - Overall writing Style Elements (typos, grammar etc.)

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Overall grading guidelines

- Presentation will be graded for:
  - Accurate reflection of the report
  - Overall clarity and flow of information
  - Clear speech and delivery of information
  - Adherence to time limit
  - Ability to answer questions at the end

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Grading Criteria for Project

- Design process adherence: 10 points
- Prototype: effectiveness, design principles and complexity: 15 points
- Evaluation with feedback from peer and outside users: 5 points
- Report, presentation and defense: 15 points
  - Each individual in the group will be graded
- Peer review other projects: 5 points (individual points)

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CSIS 3375 – 001
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Android UI

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View in Android

- Extends java.lang.object
- Basic component of Android UI
- Two types: Views that stand alone, and views that are meant to group other views
- Views: has visual elements and can respond to events
- Every View: needs attributes from XML layout and JAVA code to set attributes and event handlers
  - Typically: XML layout for visual component
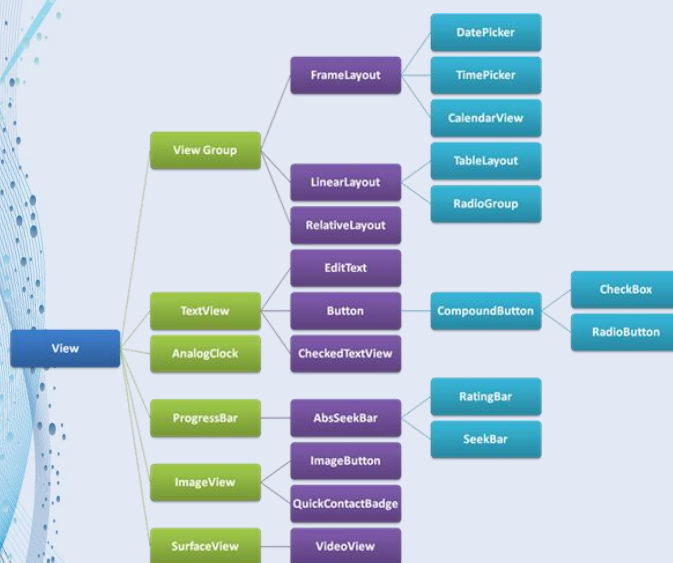 - Java: event handlers, and change of visual based on events

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View Class Hierarchy
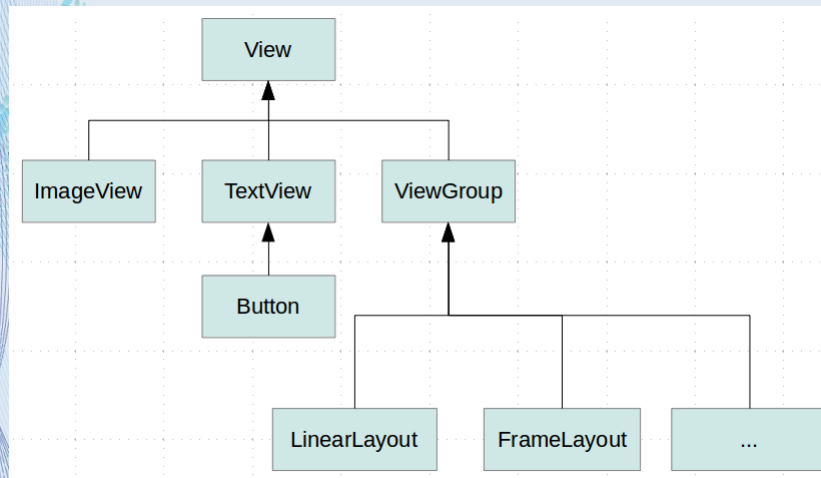
Android Class Heirarchy

Source: codentrick.com

Some common stand alone views

- TextView
- EditText
- ImageView
- Button
- CalendarView
- AutoCompleteText View

- CheckBox
- CheckedTextView
- CompoundButton
- DatePicker

View – common attributes

- android:id
  - Id for the view
  - Used in code
  - setId(int id)
- android:alpha
  - Alpha level defines transparency (0 – full transparent, 1 – fully opaque)
  - setAlpha(float)
- android:background
  - sets drawable to use as background
  - setBackgroundResource(int)

View Attributes and Methods

- android:contentDescription
  - Sets the description that describes the view (e.g., often used in imageview or imagebutton)
  - setContentDescription(CharSequence)
- android:padding
  - setPadding(int, int, int, int) – left, top, right, bottom
- android:focusable
  - Sets the focusable
  - setFocusable (int focusable): NOT_FOCUSABLE, FOCUSABLE, or FOCUSABLE_AUTO
- android: visibility
  - setVisibility(int): VISIBLE, INVISIBLE, or GONE.

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TextView

- Multiline text: How to add newline breaks.
  - Add \n in XML layout
  - OR press shift+enter in translation editor to allow multiline string literal
- EditText: Extends TextView used for user input
  - Type of keyboard and data entered depends on EditText Type

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TextView's attributes

- drawableLeft, drawableRight, drawableTop, drawableBottom:
  - setCompoundDrawables (Drawable left, Drawable top, Drawable right, Drawable bottom)
- android:drawablePadding
  - The padding between the drawables and the text
  - setCompoundDrawablePadding(int)
  - 14.75sp, 5dp
- android:gravity
  - Specifies how to align the text by the view's x- and/or y-axis when the text is smaller than the view.
  - Must be one or more (separated by '|') of the following constant values.

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TextView's attributes

- android:gravity
  - Specifies how to align the text by the view's x- and/or y-axis when the text is smaller than the view.
  - Must be one or more (separated by '|') of the following constant values
  - setGravity (int gravity) – view.setGravity(Gravity.CENTER | Gravity.BOTTOM);
- android:fontFamily
  - Sets the font family
  - setTypeface(Typeface.create("sans-serif-light", Typeface.NORMAL));

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TextView's attributes

- android:lineSpacingExtra, android:lineSpacingMultiplier
  - setLineSpacing(float extra, float multiplier)
  - textView.setLineSpacing(0.0f, 1.1f);
- android:lines
  - Sets exact number of lines
  - setLines(int)
- android:maxLines, android:minLines
  - setMaxLines(int), setMinLines(int)

TextView's attributes

- android:text
  - Text for TextView - setText(CharSequence)
- android:textColor
  - Color for TextView: setTextColor(int)
  - textview.setTextColor(this.getResources().getColor(R.color.orange))
- android:textIsSelectable
  - setTextIsSelectable(boolean)
- android:textSize
  - setTextSize(int, float)
  - tv.setTextSize(TypedValue.COMPLEX_UNIT_SP, 18f);
- android:textStyle (use setTypeface() method)
  - BOLD, ITALIC, BOLD_ITALIC, NORMAL
  - textView.setTypeface(null, Typeface.BOLD);

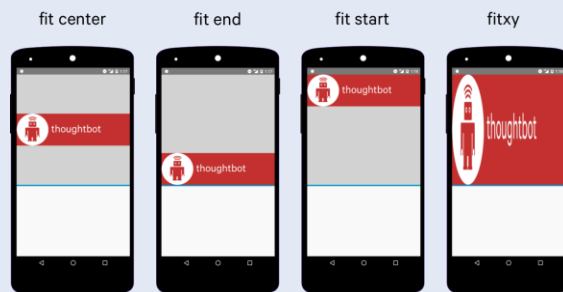# EditText and Button

- Both Extend TextView
- Button for events
- EditText used to gather user input

ImageView and ImageButton

- ImageView
  – ScaleType
- ImageButton
  – Extends ImageView

Views for gathering input

- AutoCompleteTextView – EditText with suggestions as the user is typing
- CalendarView – this view lets you display dates to users for date input
- CheckBox
- CheckedTextView: text view that can be checked..typically used in a list view
- DatePicker

Views for gathering input

- NumberPicker
- RadioButton
- Spinner
- Switch
- TimePicker
- ToggleButton
- VideoView

Common View Events

- OnClickListener
- OnLongClickListener
- OnTouchListener: Uses GestureDetector
    Swipe left, right, up and down

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Just In Mind

- Everyone should have received invitations to sign in/register.

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