WEEK-3
MOBILE DEVELOPMENT LAB SESSION
(Smartphone, Mobile OS Energy and Data Processing)

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Outline

1. How to use the SDLC for mobile Application Development
2. Selecting Key feature on the App for Mobile Resource Optimisation
3. Linking the website to the Mobile App
4. Pseudocode and Flowchart Algorithm

Mobile Software Development Lifecycle (A short Overview to guide Lab work)

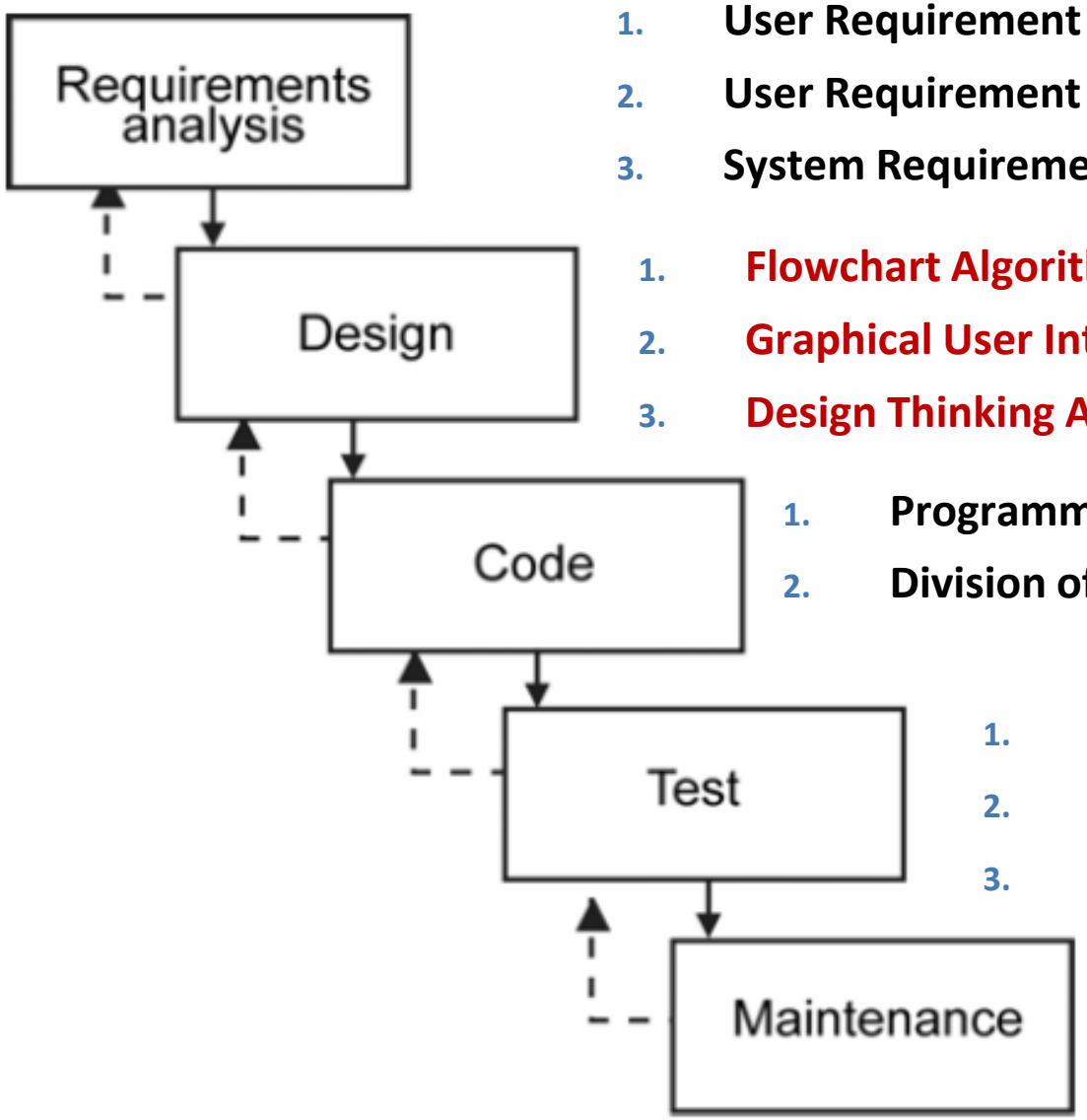


Figure 9.1: The Waterfall Lifecycle Model

1. User Requirement data collection (Inception Meeting)
2. User Requirement Validation Checklist (use natural language algorithm)
3. System Requirement (Design & Development tools, IDE, Server, Platform, Cloud)

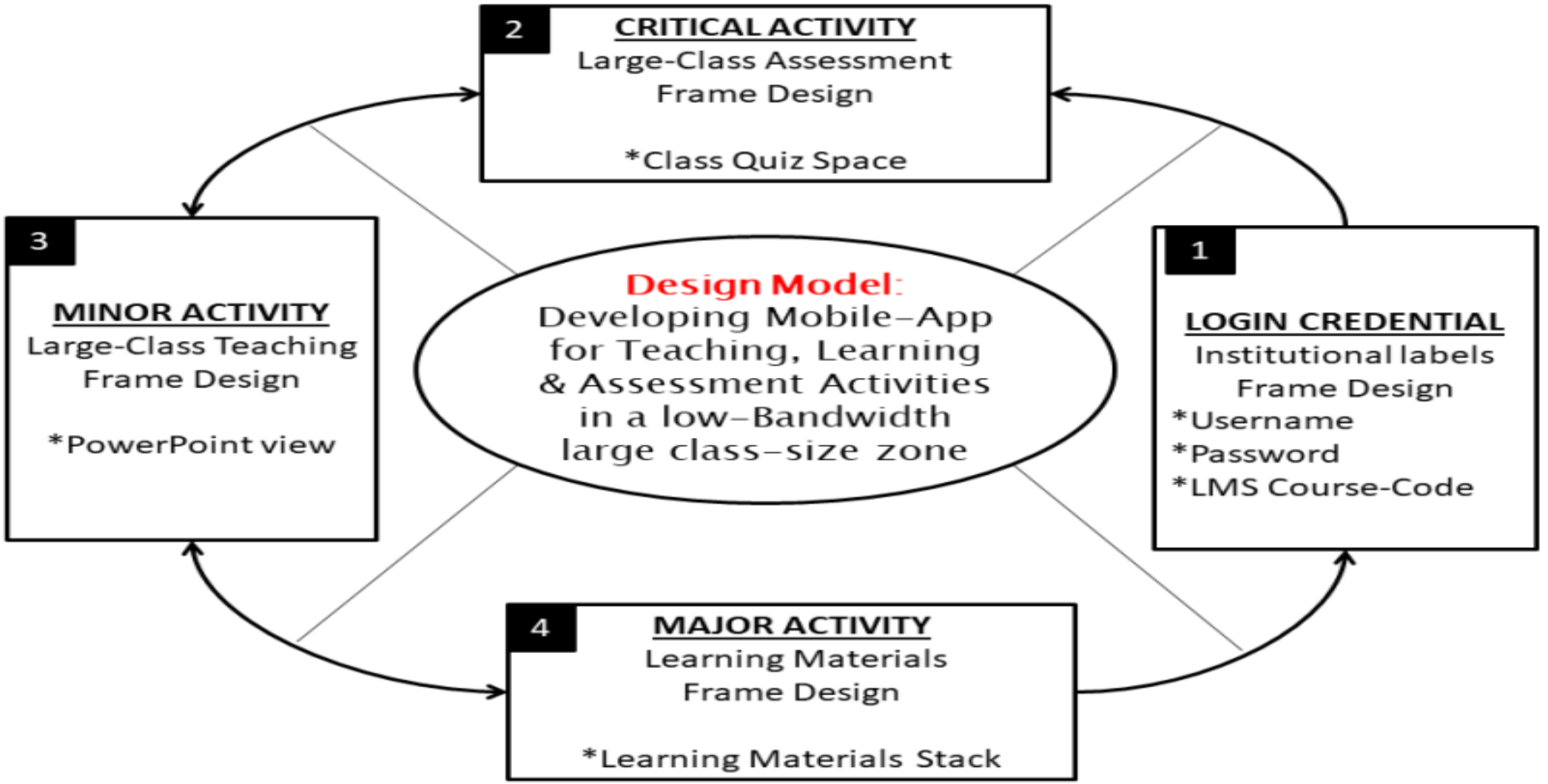
1. Flowchart Algorithm & Pseudocode algorithm to guide Developers
2. Graphical User Interface (GUI) layouts . Do Security threats & Mitigation Planning
3. Design Thinking Analysis: Human Computer interaction (HCI) & Simulation

1. Programming Language and Selected Studio or IDE
2. Division of labour for coders

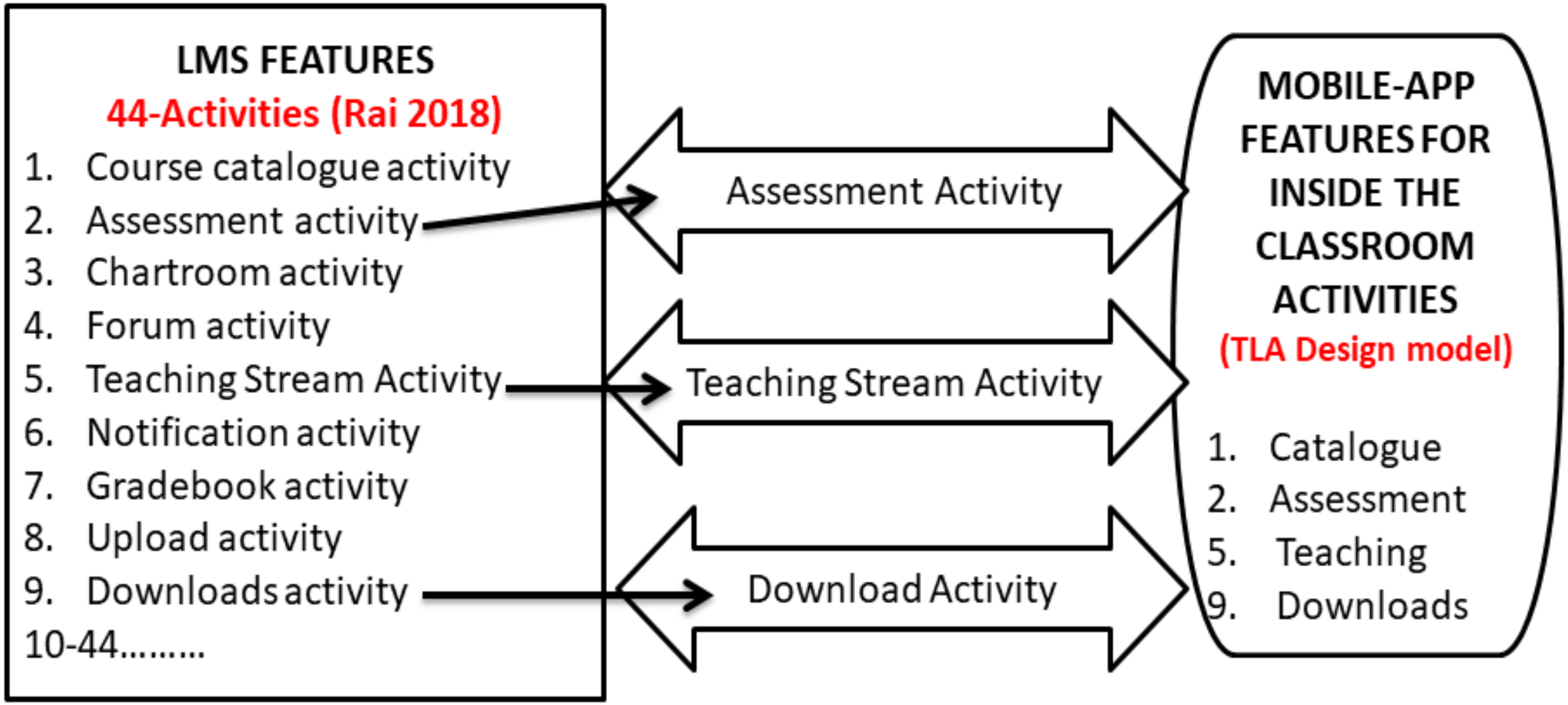
1. Unit Testing and Integration
2. Alpha Testing
3. Beta Testing (initial implementation/launch for user feedback

1. System Security Controls (initial support)
2. Handover from Project Team to operations management
3. Project Closure.

Mobile-App Design Framework (Resource Mgt)



Priority Features for Mobile Resource Management

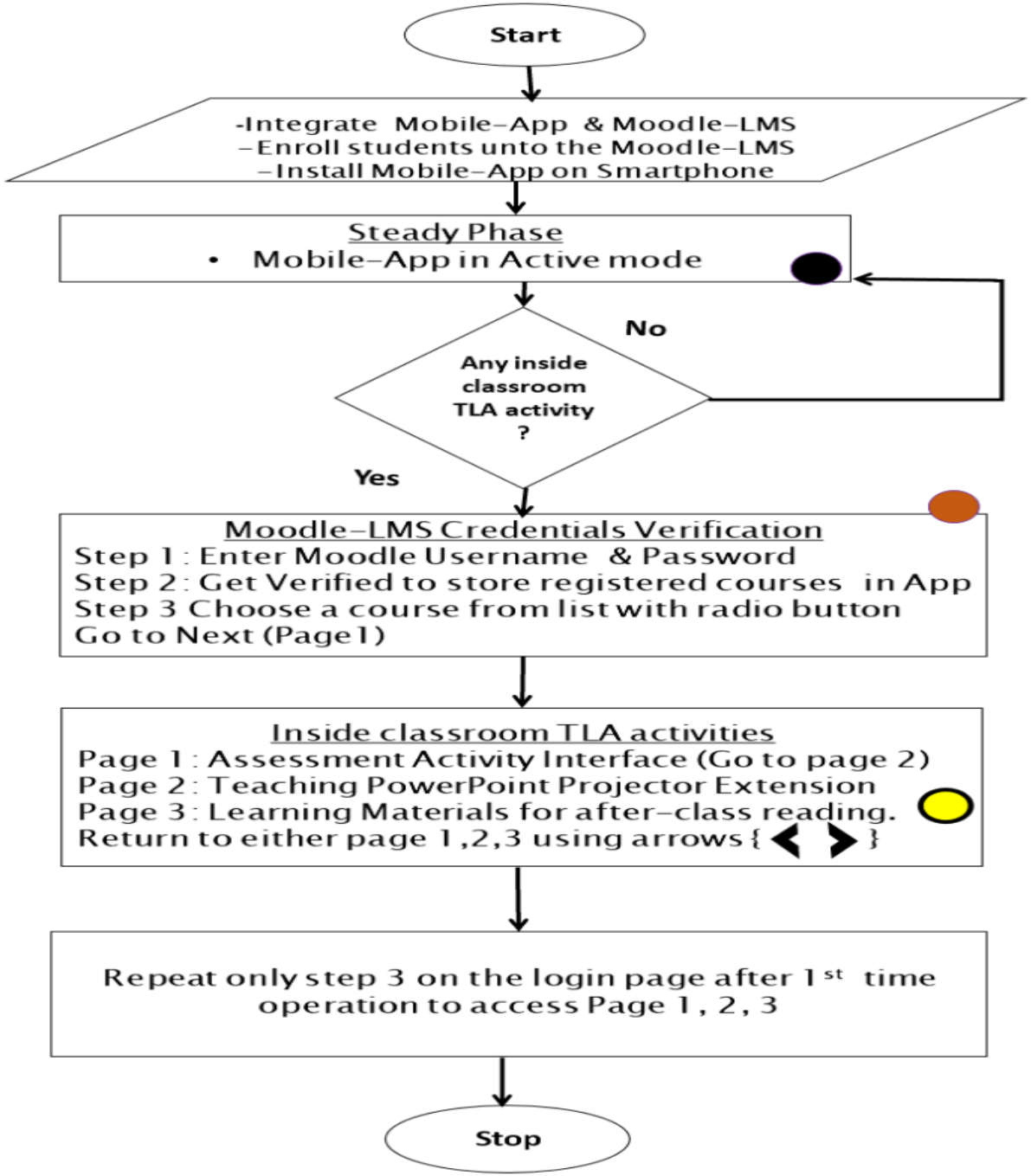


A conceptual Design interfacing Mobile-App to LMS for large class-size Blended Learning Activities

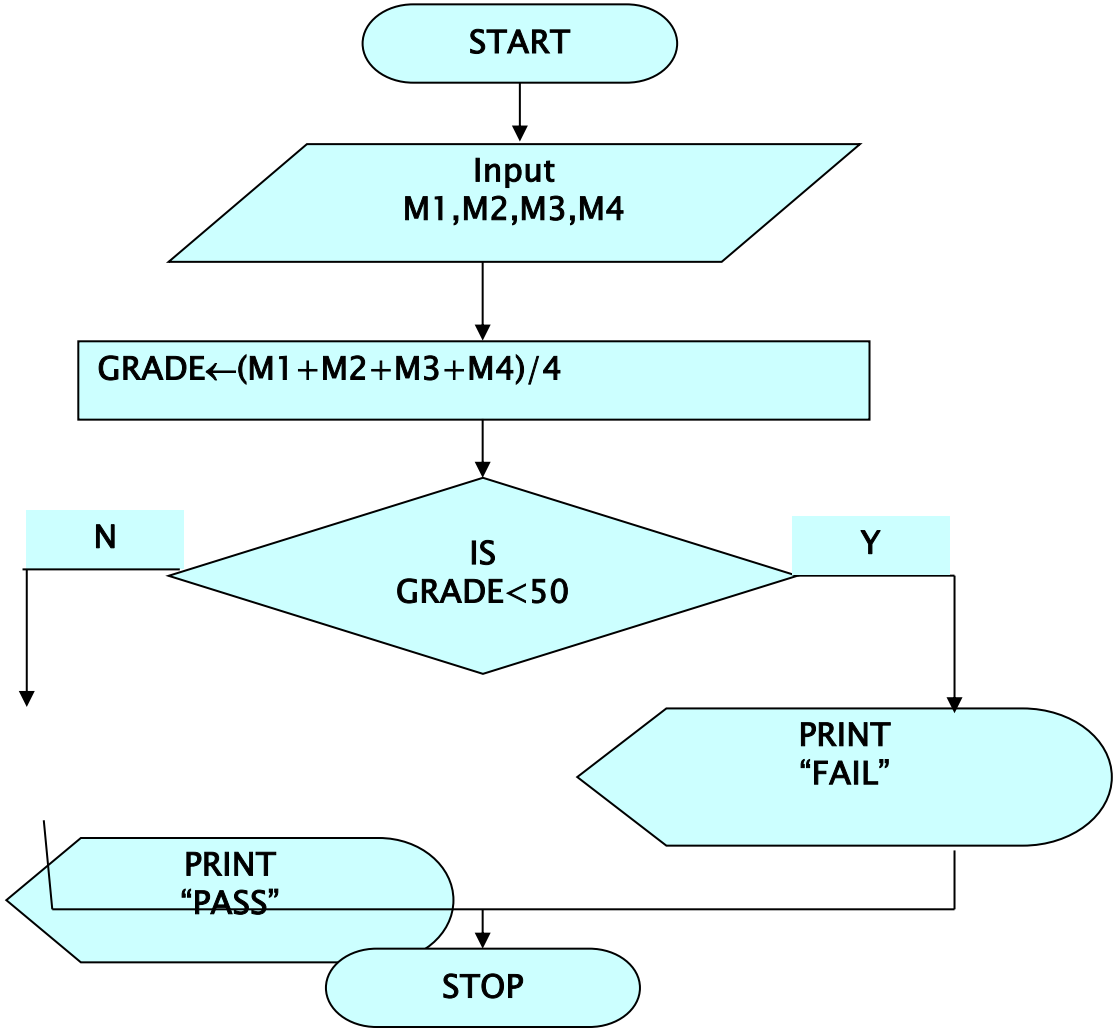
Writing Algorithm for the Mobile Software Development

- **Type 1**: Natural language (Write the story line in **SEQUENCE** in the Client Validation Checklist)
- **Type 2:** Flowcharts
  - Graphical representation of an algorithm
  - Drawn using special-purpose Symbols to represent a function
    - Rectangles, Diamonds, Ovals, Small circles
- **Type 3:** Pseudocode
  - Informal language to helps programmers develop algorithms
  - Not executed on computers
  - Helps conceptualize a program during the program-design process
  - Describes only executable statements. It's near to natural language

Type 4: Use of specific programming Language (C++, VB, Java, Fliplet studio Android studio etc.)


Start
-Integrate Mobile-App & Moodle-LMS
-Enroll students unto the Moodle-LMS
-Install Mobile-App on Smartphone
Steady Phase
• Mobile-App in Active mode
Any inside classroom TLA activity ?
No
Yes
Moodle-LMS Credentials Verification
Step 1 : Enter Moodle Username & Password
Step 2 : Get Verified to store registered courses in App
Step 3 Choose a course from list with radio button
Go to Next (Page1)
Inside classroom TLA activities
Page 1 : Assessment Activity Interface (Go to page 2)
Page 2 : Teaching PowerPoint Projector Extension
Page 3 : Learning Materials for after-class reading.
Return to either page 1 ,2,3 using arrows { }
Repeat only step 3 on the login page after 1st time operation to access Page 1 , 2 , 3
Stop

Algorithm Design Phase 1: Flowchart Example



Pseudocode:

```
        Start

Step 1:  Input M1,M2,M3,M4
Step 2:  GRADE ← (M1+M2+M3+M4)/4 ;
Step 3:     If (GRADE <50) then
                  Print "FAIL"
            else
                  Print "PASS"
             endif
           stop
```

Algorithm Design Phase 1: Pseudocode Example

- Or as a program:

```
PROGRAM MakeACupOfTea:
 Organise everything together;
 Plug in kettle;
 Put teabag in cup;
 WHILE (Kettle is not full)
   DO keep filling kettle;
 ENDWHILE;
 Wait for kettle to boil;
 Add water to cup;
 Remove teabag with spoon/fork;
 Add milk;
 IF (sugar is required)
   THEN add sugar;
   ELSE do nothing;
 ENDIF;
 Serve;
END.
```

CODING:

1. Fliplet Studio Lab Tutorials

https://www.youtube.com/watch?v=ATMTi0RL2_s

https://www.youtube.com/watch?v=sWW9StDje8s

Visit HELP

Visit You Tube channel

2. Android Studio Lab Tutorials

Visit: www. Tutorialspoint.com)

-**Android User Interface Controls**
(https://www.tutorialspoint.com/android/android_user_interface_controls.htm)

-Types of User Interface Layouts
(https://www.tutorialspoint.com/android/android_user_interface_layouts.htm)

-Types of android notifications
(https://javapapers.com/android/android-notifications/)

-Android Resources
(https://www.tutorialspoint.com/android/android_resources.htm)

GROUPS

C- D

- 1-12 -11
- 2-13 -10
- 3-14 - 9
- 4-15 -8
- 5-16 -7
- 6-17 -6
- 7-18- 5
- 8-19 -4
- 9-20- 3
- 10-21 -2
- 11-22 -1

THANK YOU