



# **IT314: SOFTWARE ENGINEERING**

## **PROJECT GROUP:3**

### **TOPIC: VIRTUAL CLASSROOM**

#### **Lab 3-Sprints from product backlog**

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## IT314-Software Engineering

### Sprints & Function point estimation

#### Complexity Factor:

Complexity factor	value
Reliable backup and recovery	3
Data Communication	2
Distributed Processing Function	2
Performance	4
Operational Environment	2
Online Data Entry	2
Transaction Rate	3
Complex ip/op and inquires	2
Complexity of internal Processing	2
Reusability	3
Conversion and installation	2
Multiple installation	1
Ease of use	3
Online data entry for multiple screens and operations	1
$\sum F_i$	32

$$\text{Complexity Factor} = 0.65 + 0.01 \sum F_i$$

$$CF = 0.65 + 0.01 * 32 = 0.65 + 0.32 = 0.97$$

#### Sprint 1:

##### User Management and Basic Authentication

- User Stories:
  - Student - Create Account
  - Student, Teacher - Log In/Out
  - Admin - User Management

Details: This sprint focuses on account creation, login/logout functionality, and user management by admins. Essential for setting up the basic user flow. In general, create a core base for the upcoming features.

Unadjusted Function Point:

Parameter	Value	Weighing Factor	Weighted Value
External Input (EI)	3	3	9
External Output (EO)	2	4	8
External Query (EQ)	3	3	9
Internal Logic Files (ILF)	1	10	10
External Interface Files (EIF)	1	5	5
Unadjusted Function Point (UFP)			41

Adjusted Function Point =  $UFP * CF = 41 * 0.97 = 39.77$

Hours required per FP = 8 hrs (assumption)

Total Estimated Time (Hours) =  $39.77 * 8 = 318.16 \approx 319$  hrs

Assuming 2 hrs of per head per day, a total of 20 hrs per day, estimates to  $319/20 \approx 16$  days

Estimated time: 3 weeks

Sprint 2:

Classroom and Course Management

- User Stories:
  - Teacher, Admin - Classroom Creation
  - Student - Course Enrollment
  - Teacher - Manage Course Materials
- Details: This sprint covers the creation of classrooms, enrolling in courses, and managing course materials.

- Unadjusted Function Point:

Parameter	Value	Weighing Factor	Weighted Value
External Input (EI)	1	4	4
External Output (EO)	1	5	5
External Query (EQ)	2	4	8
Internal Logic Files (ILF)	1	10	10
External Interface Files (EIF)	1	7	7
Unadjusted Function Point (UFP)			34

Adjusted Function Point =  $UFP * CF = 34 * 0.97 = 32.98$

Hours required per FP = 8 hrs

Total Estimated Time (Hours) =  $32.98 * 8 = 263.84 \approx 264$  hrs

Assuming 2 hrs of per head per day, a total of 20 hrs per day, estimates to  $264/20 \approx 13$  days

Estimated time: 2.5 weeks

Sprint 3:

Lecture Management

- User Stories:
  - Teacher - Schedule and Record Lectures
  - Student - Attend Live Lectures and View Recorded Lectures
- Details: Focuses on scheduling, recording lectures, and enabling students to attend or review them later.

Unadjusted Function Point:

Parameter	Value	Weighing Factor	Weighted Value
External Input (EI)	1	3	3
External Output (EO)	3	4	12
External Query (EQ)	1	3	3
Internal Logic Files (ILF)	1	7	7
External Interface Files (EIF)	0	5	0
Unadjusted Function Point (UFP)			25

Adjusted Function Point =  $UFP * CF = 25 * 0.97 = 24.25$

Hours required per FP = 8 hrs

Total Estimated Time (Hours) =  $24.25 * 8 = 194$  hrs

Assuming 2 hrs of per head per day, a total of 20 hrs per day, estimates to  $194/20 \approx 10$  days

Estimated time: 2 weeks

Sprint 4:

Assignment and Feedback Management

- User Stories:
  - Teacher - Create and Grade Assignments, Exams, Quizzes
  - Student - Submit Assignments
  - Student - View Grades
  - Admin, Teacher - Course Feedback Form
- Details: Manages creation and grading of assignments, submission of assignments by students, viewing grades, and managing course feedback.

- Unadjusted Function Point:

Parameter	Value	Weighing Factor	Weighted Value
External Input (EI)	1	3	3
External Output (EO)	3	4	12
External Query (EQ)	2	3	6
Internal Logic Files (ILF)	1	7	7
External Interface Files (EIF)	2	5	10
Unadjusted Function Point (UFP)			38

Adjusted Function Point = UFP \* CF = 38 \* 0.97 = 36.86

Hours required per FP = 8 hrs

Total Estimated Time (Hours) = 36.86 \* 8 = 295 hrs

Assuming 2 hrs of per head per day, a total of 20 hrs per day, estimates to 295/20 ≈ 15 days

Estimated time: 2.5 weeks

#### Sprint 5: Discussion Forums and Announcements

- User Stories:
  - Student, Teacher - Participate in Discussion Forum
  - Student, Teacher, Admin - Announcements
- Estimated Functional Points (FP): 10 FP
- Timeline: 2 weeks
- Details: Implements discussion forums and announcement features for effective communication within the platform.

- Unadjusted Function Point:

Parameter	Value	Weighing Factor	Weighted Value
External Input (EI)	1	3	3
External Output (EO)	1	4	4
External Query (EQ)	1	3	3
Internal Logic Files (ILF)	0	7	0
External Interface Files (EIF)	1	5	5
Unadjusted Function Point (UFP)			15

Adjusted Function Point =  $UFP * CF = 15 * 0.97 = 14.55$

Hours required per FP = 8 hrs

Total Estimated Time (Hours) =  $14.55 * 8 = 116.4 \approx 117$  hrs

Assuming 2 hrs of per head per day, a total of 20 hrs per day, estimates to  $117/20 \approx 6$  days

Estimated time: 1 week

- Estimated Total Time and Timeline:-
  - Total Sprints-5 sprints
  - Total Timeline-12 weeks (3 months)