IT314: Software Engineering
Lab 3 (G16)
Use Case Modeling and Product Backlog
(in the form of User Stories)
Task - 3

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❖ Develop sprints from the product backlog

	Low	Medium	High
EI (External Input)	3	4	6
EO (External Output)	4	5	7
ILF (Internal Logical File)	7	10	15
EIF (External Interface File)	5	7	10
EQ (External Queries)	3	4	6

Sprint 1 (2.5 weeks) - Admin Core Features

User Stories in Sprint 1:

1. Admin login (User Story 1)
2. Create examiner accounts (User Story 2)
3. Manage student accounts (User Story 3)
4. Manage the question bank (User Story 4)
5. Reset Password (User Story 23)

UFP Calculation:

Feature	EI/EO/ILF/EQ/EIF	Total UFP
Admin Login	EI: 1 (Login form) = 4 UFP EQ: 1 (Check credentials query) = 4 UFP	**8**

Create Examiner Accounts	EI: 1 (Form to add examiner) = 4 UFP EIF: 1 (Examiner data stored) = 7 UFP EO: 1 (Confirmation message/notification) = 5 UFP	**16**
Manage Student Accounts	EI: 1 (Form to manage student details) = 4 UFP EIF: 1 (Student data stored) = 7 UFP EO: 1 (Confirmation message) = 5 UFP	**16**
Create & Manage the Question Bank	EI: 1 (Form to add/edit/delete questions) = 4 UFP EIF: 1 (Question data stored) = 7 UFP EO: 1 (Success/error message on question operations) = 5 UFP	**16**
Reset Password	EI: 1 (Form input) + 1 (password reset link) = 8 UFP EIF: 1 (password stored) = 7 UFP EO: 1 (email notification) = 5 UFP	**20**
Sprint 1 Total UFP	-	**76**

Sprint 2 (2 weeks) - Admin & Examiner Advanced Features

User Stories in Sprint 2:

1. Admin - Manage exams (User Story 5)
2. Examiner - Log in (User Story 8)
3. Examiner - Create exams (User Story 9)
4. Examiner - Add new questions to the question bank (User Story 10)

UFP Calculation:

Feature	EI/EO/ILF/EQ	Total UFP
Admin - Manage Exams	EQ: 1 (Query for viewing upcoming exams) = 4 UFP EI: 1 (Form to edit exams) = 4 UFP EO: 1 (Success/error message) = 5 UFP	**13**
Examiner Login	EI: 1 (Login form) = 4 UFP EQ: 1 (Check credentials) = 4 UFP	**8**
Examiner - Create Exams	EI: 1 (Form to create exams) = 4 UFP EIF: 1 (Exam data stored) = 7 UFP EO: 1 (Confirmation message) = 5 UFP	**16**

Examiner - Add New Questions to the Question Bank	EI: 1 (Form to add questions) = 4 UFP EIF: 1 (Question data) = 7 UFP EO: 1 (Success/error message) = 5 UFP	**16**
Sprint 2 Total UFP	-	**52**

Sprint 3 (2.5 weeks) - Student Features & Notifications

User Stories in Sprint 3:

1. Admin - View system performance reports (User Story 6)
2. Admin - Send notifications (User Story 7)
3. Student - Log in (User Story 16)
4. Student - View upcoming exams (User Story 17)
5. Student - Take an exam (User Story 18)
6. Student - View exam results (User Story 19)
7. Student/Examiner - Update Profile (User Story 24)

UFP Calculation:

Feature	EI/EO/ILF/EQ	Total UFP
Admin - View System Performance Reports	EQ: 1 (Query for report generation) = 4 UFP EO: 1 (Report display or download) = 5 UFP	**9**
Admin - Send Notifications	EI: 1 (Form to send notifications) = 4 UFP EO: 1 (Notification delivery) = 5 UFP	**9**
Student Login	EI: 1 (Login form) = 4 UFP EQ: 1 (Check credentials) = 4 UFP	**8**

Student - View Available Exams	EQ: 1 (Query for available exams) = 4 UFP EO: 1 (Display list of exams) = 5 UFP	**9**
Student - Take an Exam	EI: 1 (Form to take the exam) = 4 UFP EIF: 1 (Answers saved) = 7 UFP EO: 1 (Confirmation message after submission) = 5 UFP	**16**
Student - View Exam Results	EQ: 1 (Query for exam results) = 4 UFP EO: 1 (Display results and feedback) = 5 UFP	**9**
Student/Examiner - Update Profile	EI: 1 (Form input) = 4 UFP EIF: 1 (Profile information stored) = 7 UFP EO: 1 (Message) = 5 UFP	**16**
Sprint 3 Total UFP	-	**76**

Sprint 4 (2 weeks) - Examiner Features & Advanced Student Features

User Stories in Sprint 4:

1. Examiner - Schedule exams (User Story 11)
2. Examiner - Manage exams (User Story 12)
3. Examiner - Grade descriptive questions (User Story 13)
4. Examiner - Moniter live exams(User Story 15)
5. Student - Practice questions from the question bank (User Story 20)

UFP Calculation:

Feature	EI/EO/ILF/EQ	Total UFP
Examiner - Schedule Exams	EI: 1 (Form to schedule exam) = 4 UFP EIF: 1 (Exam data stored) = 7 UFP EO: 1 (Notification to students) = 5 UFP	**16**
Examiner - Manage Exams	EQ: 1 (Query for exam management) = 4 UFP EO: 1 (Success/error message) = 5 UFP	**9**

Examiner - Grade Descriptive Questions	EI: 1 (Form to input grades) = 4 UFP EIF: 1 (Grade data saved) = 7 UFP EO: 1 (Grade confirmation message) = 5 UFP	**16**
Examiner - Monitor live exams	EQ: 1 (Query for live data) = 4 UFP EO: 1 (Display live report) = 5 UFP	**9**
Student - Practice Questions from Question Bank	EQ: 1 (Query for practice questions) = 4 UFP EO: 1 (Display questions) = 5 UFP	**9**
Sprint 4 Total UFP	-	**59**

Sprint 5 (1 weeks) - Examiner Advanced Reports, Notifications, Final Integration

User Stories in Sprint 5:

1. Examiner - View performance reports (User Story 14)
2. Student - Receive notifications (User Story 22)
3. Student - View previous exam results (User Story 21)

UFP Calculation:

Feature	EI/EO/ILF/EQ	Total UFP
Examiner - View Performance Reports	EQ: 1 (Query for performance reports) = 4 UFP EO: 1 (Report generation) = 5 UFP	**9**
Student - Receive Notifications	EO: 1 (Notification delivery) = 5 UFP	**5**
Student - View Previous Exam Results	EQ: 1 (Query for previous results) = 4 UFP EO: 1 (Display results) = 5 UFP	**9**
Sprint 5 Total UFP	-	**23**

UFP Total Calculation:

Sprint	Duration (weeks)	Total UFP
Sprint 1	2.5 weeks	76 UFP
Sprint 2	2 weeks	52 UFP
Sprint 3	2.5 weeks	76 UFP
Sprint 4	2 weeks	59 UFP
Sprint 5	1 weeks	23 UFP
Total	**10 weeks**	**286 UFP**