UniRoute Business Logic Document

Business Process: Student Interaction

BF Number	B. Function	Parallel Process	Business Rule	Logic	Business Rule Validation	Data Validation
BF001	Stream Selection Guidance	Calculate stream recommendation scores	1. Only registered After O/L students can access stream guidance.	1. Display Questionnaire: Show a form asking for interests (e.g., Math, Biology), career goals (e.g., Doctor, Engineer), and O/L grades.	- Verify user is registered and After O/L student.	- At least 3 interests and 1 career goal selected.
			2. Recommendations must be based on interests and career goals.	2. Validate Inputs:	- Confirm at least 3 streams are suggested.	- Grades are valid (A, B, C, etc.).
			3. At least three streams must be suggested.	- Ensure at least 3 interests and 1 career goal are selected.	- Ensure streams are valid (Science, Commerce, Arts, Technology).	- Feedback rating is numeric (1-5).
			4. Streams must be Science, Commerce, Arts, or Technology.	- Validate grades (e.g., A, B, C).		
				3. Generate Recommendations:		
				- Query database for stream mapping table (interests + goals → streams).		
				- Assign weights: career goal (50%), interests (30%), grades (20%).		
				- Calculate scores for each stream; select top 3.		
				- Generate explanations (e.g., “Science due to Biology interest”).		
				4. Display Results: Show streams with subjects and career paths.		
				5. Save/Download: Allow saving to profile or downloading as PDF.		
				6. Collect Feedback: Provide a 1-5 star rating form; store in database.		
BF002	Degree Recommendation	Calculate degree eligibility scores	1. Only registered A/L students can access degree recommendations.	1. Display Form: Show a form for Z-score, subject stream (e.g., Bio Science), and optional preferences (e.g., university).	- Verify user is registered and A/L student.	- Z-score between -3 and 3.
			2. Recommendations must use Z-score and subject stream.	2. Validate Inputs:	- Confirm at least 5 degrees are suggested.	- Stream is valid (e.g., Bio Science).
			3. Degrees must align with UGC Admission Handbook.	- Z-score: Numeric, between -3 and 3.	- Ensure degrees match UGC criteria.	- Preferences (if provided) are valid.
			4. At least five degrees must be suggested.	- Stream: Valid A/L stream.		- Feedback rating is numeric (1-5).
				- Preferences: Optional, valid format.		
				3. Generate Recommendations:		
				- Query UGC database table for degrees (minimum Z-scores, required streams).		
				- Filter degrees where Z-score meets/exceeds minimum and stream matches.		
				- Rank by Z-score margin; prioritize preferences.		
				- Select top 5+ degrees.		
				4. Display Results: Show degrees with university, Z-score cutoff, career paths.		
				5. Save/Download: Allow saving or PDF download.		
				6. Collect Feedback: Store 1-5 star rating.		
BF003	Preference List Builder	Update profile with preference list	1. Only registered students can build preference lists.	1. Display Form: Show a form to select degrees/universities, with filters for eligibility.	- Verify user is registered.	- At least 3 preferences selected.
			2. Lists must include at least 3 preferences (degrees or universities).	2. Validate Inputs:	- Confirm at least 3 preferences.	- Preferences match eligibility data.
			3. Preferences must align with student’s eligibility (Z-score, stream for A/L; stream for After O/L).	- Ensure at least 3 preferences selected.	- Ensure preferences are eligible.	- Ranking is valid (no duplicates).
			4. Lists must be editable and savable.	- Verify preferences match eligibility (query UGC table for A/L, stream table for After O/L).	- Verify list is saved/editable.	- Feedback rating is numeric (1-5).
				3. Build List:		
				- Allow ranking preferences (drag-and-drop or numbering).		
				- Display preview with details (e.g., degree, university, Z-score needed).		

				4. Save List:		
				- Store ranked list in user’s profile.		
				- Allow editing (add/remove/re-rank).		
				5. Download/Share: Provide PDF export option.		
				6. Collect Feedback: Store 1-5 star rating.		
BF004	Connect with Mentors	Calculate mentor match scores	1. Only registered students can request mentors.	1. Display Form: Show a form for preferences (e.g., Engineering, University of Colombo, academic/career guidance).	- Verify user is registered.	- At least 1 preference selected.
			2. Matches must consider student preferences (e.g., field, university).	2. Validate Inputs:	- Confirm at least 1 mentor matched.	- Preference type is valid.
			3. Mentors must be verified university students/graduates.	- Ensure at least 1 preference selected.	- Ensure mentors are verified.	- Feedback rating is numeric (1-5).
			4. At least one mentor must be matched.	- Validate preference type (academic/career).		
				3. Match Mentors:		
				- Query database for verified mentors.		
				- Score mentors: same field (+50), same university (+30).		
				- Select top mentor; display profile (name, field, bio).		
				4. Connect:		
				- Send email notifications to student and mentor.		
				- Enable in-platform messaging.		
				5. Collect Feedback: Store 1-5 star rating after interaction.		
BF005	Book Tutoring Sessions	Check tutor availability	1. Only registered students can book tutoring.	1. Display Schedule: Show a calendar with verified tutors’ available slots, filterable by subject.	- Verify user is registered.	- Subject is valid.
			2. Sessions must be with verified tutors.	2. Validate Inputs:	- Confirm tutor is verified.	- Date/time is within tutor’s availability.
			3. Bookings must specify subject, date, time.	- Ensure subject, date, time selected.	- Ensure booking count < 3 per week.	- Booking count < 3.
			4. Students can book up to 3 sessions per week.	- Check weekly booking count < 3.	- Verify subject, date, time provided.	- Feedback rating is numeric (1-5).
				3. Book Session:		
				- Reserve slot in tutor’s schedule.		
				- Send confirmation email to student and tutor.		
				- Store booking in database.		
				4. Manage Bookings:		
				- Allow cancellations (update schedule, notify tutor).		
				5. Collect Feedback: Store 1-5 star rating after session.		
BF006	Access Academic Resources	Verify resource access permissions	1. Only registered students can access resources.	1. **Display Resource List**: Show a searchable list of resources with filters for subject (e.g., Math) and type (e.g., notes).	- Verify user is registered.	- Filters (subject, type) are valid.
			2. Resources must be uploaded by verified mentors or tutors.	2. **Validate Access**:	- Confirm resources are from verified mentors/tutors.	- Download count < 10.
			3. Resources must be categorized by subject and type (e.g., notes, past papers).	- Check user is registered.	- Ensure at least subject and type categories are applied.	- Signed URL expires in 5 minutes.
			4. Students can download up to 10 resources per day.	- Ensure resources are from verified mentors/tutors.	- Confirm download limit < 10 per day.	- Feedback rating is numeric (1-5); comments are text.
				3. **Download Process**:		
				- Query user’s daily download count.		
				- If < 10, generate a signed URL (valid for 5 minutes) for download.		
				- Increment download count in database.		
				- If ≥ 10, display “Try tomorrow!”		
				4. **Feedback Option**: Allow 1-5 star rating and comments; store in database.		
				5. **Track Usage**: Log resource access for analytics.		
			1. Only registered students can provide feedback.	1. **Display Feedback Form**: Show a form after using a feature (e.g., downloading a resource), with rating and comment fields.	- Verify user is registered.	- Rating is numeric (1-5).
			2. Feedback must include a 1-5 star rating.	2. **Validate Inputs**:	- Confirm rating is 1-5.	- Comments (if provided) are text, < 500 characters.

BF007	Provide Feedback	Aggregate feedback for analytics	3. Feedback must be linked to a specific feature (e.g., resource, mentor, course).	- Ensure user is registered.	- Ensure feedback links to a feature.	- Feature ID is valid.
			4. Feedback comments are optional but must be appropriate.	- Rating is 1-5.	- Check comments (if any) are appropriate.	- Profanity filter passes.
				- Comments (if provided) pass profanity filter.		
				3. **Store Feedback**:		
				- Save rating, comment, feature ID, and user ID in database.		
				- Link feedback to feature (e.g., resource ID).		
				4. **Notify Admins**: If rating < 3, send alert to admins for review.		
				5. **Display Confirmation**: Show "Thank you for your feedback!"		
BF008	View Degree Program Syllabi	Fetch syllabus data from database	1. Only registered students can view syllabi.	1. **Display Degree List**: Show a searchable list of UGC-approved degrees.	- Verify user is registered.	- Degree ID is valid.
			2. Syllabi must be for valid UGC-approved degrees.	2. **Validate Access**:	- Confirm degree is UGC-approved.	- Syllabus data is complete (modules, duration).
			3. Syllabi must include course modules and duration.	- Check user is registered.	- Ensure syllabus includes modules and duration.	- Feedback rating is numeric (1-5).
			4. Access must be logged for analytics.	- Ensure degree is UGC-approved.	- Verify access is logged.	
				3. **Fetch Syllabus**:		
				- Query database for syllabus (modules, duration, credits).		
				- Display in structured format (e.g., table with module names).		
				4. **Download Option**: Provide PDF download of syllabus.		
				5. **Log Access**: Record user ID, degree ID, and timestamp in analytics table.		
				6. **Feedback Option**: Allow 1-5 star rating; store in database.		
BF009	Enroll in Pre-Uni Courses	Check course availability and prerequisites	1. Only registered students can enroll.	1. **Display Course List**: Show available pre-uni courses with filters (e.g., subject, provider).	- Verify user is registered.	- Course ID is valid.
			2. Courses must be offered by verified providers.	2. **Validate Eligibility**:	- Confirm course is from verified provider.	- Prerequisites match user profile (stream, grades).
			3. Students must meet course prerequisites (e.g., stream, O/L grades).	- Check user is registered.	- Ensure prerequisites are met.	- Feedback rating is numeric (1-5).
			4. Enrollment must be confirmed via email.	- Verify course is from verified provider.	- Verify confirmation email is sent.	
				- Check prerequisites (e.g., Bio Science stream for Biology course).		
				3. **Enroll**:		
				- Reserve spot in course.		
				- Store enrollment (user ID, course ID) in database.		
				- Send confirmation email to student and provider.		
				4. **Manage Enrollment**:		
				- Allow cancellations (update database, notify provider).		
				5. **Feedback Option**: Allow 1-5 star rating after course; store in database.		

Business Process: Mentor Interaction

BF Number	B. Function	Parallel Process	Business Rule	Logic	Business Rule Validation	Data Validation
			1. Only registered users can create mentor profiles.	1. **Show Form**: Display a form for name, university, field of study (e.g., Engineering), bio, contact email, and proof (e.g., student ID PDF).	- Confirm user is registered.	- All fields are non-empty.
			2. Mentors must provide university, field of study, and proof of status.	2. **Check Inputs**:	- Verify university, field, and proof are provided.	- Email format is valid (e.g., name@domain.com).
			3. Profiles must be verified by admins before activation.	- Ensure user is registered.	- Ensure admin verification is completed.	- Proof file is PDF/image, < 5MB.
			4. Profiles must include a bio and contact email.	- Verify all fields are filled.	- Check bio and email are included.	- Rating (if provided) is 1-5.

				- Check proof is PDF/image (< 5MB).		
BF001	Create Mentor Profile	Verify mentor credentials		3. **Save Profile**:		
				- Store data in database with status “pending.”		
				- Notify admins via email for verification.		
				4. **Verify Profile**:		
				- Admin reviews proof; sets status to “verified” or “rejected.”		
				- Email mentor with result.		
				5. **Activate Profile**: If verified, make profile visible to students.		
				6. **Rate Setup**: Allow students to rate profile (1-5 stars) later; store in database.		
			1. Only verified mentors can offer mentoring.	1. **Show Form**: Display a form for availability (e.g., days, times), expertise (e.g., Engineering, career advice).	- Confirm mentor is verified.	- Availability format is valid (e.g., days/times).
			2. Mentors must specify availability and expertise (e.g., academic, career).	2. **Check Inputs**:	- Verify availability and expertise are specified.	- Expertise is valid (e.g., academic/career).
			3. Mentoring must be linked to student requests.	- Ensure mentor is verified.	- Ensure mentor has < 5 students.	- Student count < 5.
			4. Mentors can accept up to 5 students at a time.	- Validate availability and expertise fields.	- Check matching occurs.	- Rating is 1-5.
				- Check mentor has < 5 active students.		
				3. **Save Offer**:		
BF002	Offer Mentoring	Match mentors with students		- Store availability and expertise in database.		
				- Enable matching with student requests.		
				4. **Match Process**:		
				- System matches mentor to students based on expertise (background process).		
				- Notify mentor and student via email.		
				5. **Enable Communication**: Provide in-platform messaging.		
				6. **Feedback**: Allow students to rate mentoring (1-5 stars); store in database.		
			1. Only verified mentors can offer courses.	1. **Show Form**: Display a form for subject (e.g., Biology), description, schedule, prerequisites (e.g., Bio Science stream), and materials (optional PDF).	- Confirm mentor is verified.	- Subject is valid (e.g., Biology).
			2. Courses must include subject, description, and schedule.	2. **Check Inputs**:	- Verify subject, description, schedule, and prerequisites are provided.	- Schedule format is valid.
			3. Courses must be approved by admins.	- Ensure mentor is verified.	- Ensure admin approval is completed.	- Prerequisites are valid (e.g., stream).
			4. Courses must have prerequisites (e.g., stream, grades).	- Verify all fields are filled.	- Check course is published if approved.	- Materials (if provided) are PDF, < 10MB.
				- Check materials (if provided) are PDF (< 10MB).		- Rating is 1-5.
BF003	Provide Pre-Uni Courses	Verify course content		3. **Submit Course**:		
				- Save course data in database with status “pending.”		
				- Notify admins for approval.		
				4. **Approve Course**:		
				- Admin reviews content; sets status to “approved” or “rejected.”		
				- Email mentor with result.		
				5. **Publish Course**: If approved, list course for students to enroll.		
				6. **Feedback**: Allow students to rate course (1-5 stars); store in database.		
			1. Only verified mentors can share resources.	1. **Show Form**: Display a form for subject (e.g., Math), type (e.g., notes), and resource file (PDF).	- Confirm mentor is verified.	- Subject is valid (e.g., Math).
			2. Resources must be categorized by subject and type (e.g., notes, past papers).	2. **Check Inputs**:	- Verify subject and type are specified.	- Type is valid (e.g., notes).
			3. Resources must be PDF files.	- Ensure mentor is verified.	- Ensure file is PDF.	- File is PDF, < 10MB.
			4. Mentors can upload up to 5 resources per day.	- Verify subject, type, and file are provided.	- Check upload count < 5 per day.	- Upload count < 5.
				- Check file is PDF (< 10MB).		- Rating is 1-5.
				- Confirm daily upload count < 5.		
BF004	Share Academic Resources	Validate resource files		3. **Upload Resource**:		

				- Store file in file storage (e.g., AWS S3).		
				- Save metadata (subject, type, mentor ID) in database.		
				4. **Publish Resource**: Make resource available to students.		
				5. **Feedback**: Allow students to rate resource (1-5 stars); store in database.		
				6. **Track Usage**: Log resource uploads for analytics.		
BF005	Book Senior Mentors	Check senior mentor availability	1. Only verified mentors can book senior mentors.	1. **Show Schedule**: Display a calendar of senior mentors' available slots, filterable by subject.	- Confirm mentor is verified.	- Subject is valid.
			2. Bookings must specify subject and time.	2. **Check Inputs**:	- Verify subject and time are specified.	- Time is within senior mentor's availability.
			3. Senior mentors must be verified and designated as senior.	- Ensure mentor is verified.	- Ensure senior mentor is verified and senior.	- Booking count < 2.
			4. Mentors can book up to 2 sessions per week.	- Verify subject and time are selected.	- Check booking count < 2 per week.	- Rating is 1-5.
				- Check weekly booking count < 2.		
				3. **Book Session**:		
				- Reserve slot in senior mentor's schedule.		
				- Store booking (mentor ID, senior mentor ID, time) in database.		
				- Send confirmation email to both.		
				4. **Manage Booking**:		
				- Allow cancellations (update schedule, notify senior mentor).		
				5. **Feedback**: Allow mentor to rate session (1-5 stars); store in database.		
BF006	Manage Tutoring Sessions	Update session availability	1. Only verified mentors can manage tutoring sessions.	1. **Show Dashboard**: Display a calendar of mentor's tutoring sessions, with options to add, edit, or cancel.	- Confirm mentor is verified.	- Subject is valid (e.g., Math).
			2. Sessions must specify subject, date, and time.	2. **Validate Inputs**:	- Verify subject, date, time are specified.	- Date/time is future and valid.
			3. Sessions must be confirmed by both mentor and student.	- Check mentor is verified.	- Ensure student confirmation is received.	- Session count < 10.
			4. Mentors can manage up to 10 sessions per week.	- Ensure subject, date, time are provided for new/edit sessions.	- Check session count < 10 per week.	- Rating is numeric (1-5).
				- Check weekly session count < 10.		
				3. **Manage Session**:		
				- For new sessions: Save subject, date, time in database; notify student via email.		
				- For edits: Update session details; notify student.		
				- For cancellations: Remove session; notify student.		
				4. **Confirm Session**:		
				- Require student confirmation via email or in-platform.		
				5. **Log Changes**: Record all actions (add/edit/cancel) for analytics.		
				6. **Feedback Option**: Allow students to rate session (1-5 stars); store in database.		
BF007	Manage Videos	Validate video files	1. Only verified mentors can manage videos.	1. **Show Video Manager**: Display a list of mentor's videos with options to upload, edit, or delete.	- Confirm mentor is verified.	- Subject is valid (e.g., Biology).
			2. Videos must be categorized by subject and topic.	2. **Validate Inputs**:	- Verify subject and topic are specified.	- Topic is non-empty text.
			3. Videos must be MP4 format and < 100MB.	- Check mentor is verified.	- Ensure file is MP4, < 100MB.	- File is MP4, < 100MB.
			4. Mentors can upload up to 3 videos per day.	- Ensure subject, topic, and video file are provided for uploads.	- Check upload count < 3 per day.	- Upload count < 3.
				- Verify file is MP4, < 100MB.		- Rating is numeric (1-5).
				- Check daily upload count < 3.		
				3. **Manage Video**:		
				- For uploads: Store file in cloud (e.g., AWS S3); save metadata (subject, topic, mentor ID) in database.		
				- For edits: Update subject/topic; save changes.		
				- For deletes: Remove file and metadata.		

				4. **Publish Video**: Make uploaded/edited videos available to students.		
				5. **Feedback Option**: Allow students to rate video (1-5 stars); store in database.		
				6. **Track Usage**: Log video actions for analytics.		
BF008	View Earnings	Calculate earnings totals	1. Only verified mentors can view earnings.	1. **Show Earnings Dashboard**: Display a page with earnings totals, filterable by period (weekly, monthly).	- Confirm mentor is verified.	- Period is valid (e.g., weekly, monthly).
			2. Earnings must reflect tutoring and course payments.	2. **Validate Access**:	- Verify earnings include tutoring and courses.	- Earnings data matches mentor ID.
			3. Earnings must be displayed by period (e.g., weekly, monthly).	- Check mentor is verified.	- Ensure period filter is applied.	- Issue reports (if any) are text, < 500 characters.
			4. Earnings data must be secure and private.	- Ensure data access is restricted to mentor's user ID.	- Check data is secure (mentor-only access).	
				3. **Calculate Earnings**:		
				- Query database for mentor's tutoring and course transactions.		
				- Sum payments for selected period.		
				- Display breakdown (e.g., tutoring: $50, courses: $30).		
				4. **Secure Display**:		
				- Use encrypted session to show data.		
				- Prevent data export to protect privacy.		
				5. **Log Access**: Record earnings view for security audit.		
				6. **Feedback Option**: Allow mentor to report issues (e.g., incorrect totals); store in database.		
BF009	Access Feedback	Aggregate feedback analytics	1. Only verified mentors can access feedback.	1. **Show Feedback Dashboard**: Display a list of feedback for mentor's activities, filterable by type (e.g., tutoring, videos).	- Confirm mentor is verified.	- Activity type is valid (e.g., tutoring, videos).
			2. Feedback must be linked to mentor's activities (e.g., sessions, videos).	2. **Validate Access**:	- Verify feedback links to mentor's activities.	- Ratings are numeric (1-5).
			3. Feedback must include ratings (1-5 stars) and optional comments.	- Check mentor is verified.	- Ensure ratings are 1-5; comments are optional.	- Comments/replies are text, < 500 characters.
			4. Feedback must be filterable by activity type.	- Ensure feedback is linked to mentor's user ID.	- Check filtering by activity type works.	- Filter parameters are valid.
				3. **Fetch Feedback**:		
				- Query database for ratings and comments tied to mentor's activities.		
				- Display in table (e.g., activity, rating, comment, date).		
				4. **Filter Feedback**:		
				- Allow sorting by activity type or date.		
				5. **Respond Option**: Allow mentor to reply to comments (optional); store in database.		
				6. **Track Views**: Log feedback access for analytics.		

Business Process: Institution Interaction

BF Number	B. Function	Parallel Process	Business Rule	Logic	Business Rule Validation	Data Validation
BF001	Manage Portfolio	Verify institution credentials	1. Only verified institutions can manage portfolios.	1. **Show Form**: Display a form for institution name, programs (e.g., degrees, courses), contact details, description, and proof (e.g., registration certificate).	- Confirm institution is verified.	- All fields are non-empty.
			2. Portfolios must include name, programs, and contact details.	2. **Validate Inputs**:	- Verify name, programs, and contact details are provided.	- Contact email is valid (e.g., info@uni.com).
			3. Updates must be approved by admins.	- Check institution is verified.	- Ensure admin approval is completed.	- Proof file is PDF/image, < 5MB.
			4. Portfolios must be publicly visible after approval.	- Ensure all fields are filled.	- Check portfolio is publicly visible if approved.	- Rating is numeric (1-5).
				- Verify proof file is PDF/image (< 5MB).		
				3. **Save Portfolio**:		
				- Store data in database with status "pending."		

				- Notify admins via email for approval.		
				4. **Approve Update**:		
				- Admin reviews changes; sets status to “approved” or “rejected.”		
				- Email institution with result.		
				5. **Publish Portfolio**: If approved, display portfolio on *UniRoute* .		
				6. **Feedback Option**: Allow students to rate portfolio (1-5 stars); store in database.		
BF002	Upload Academic Content	Validate content files	1. Only verified institutions can upload content.	1. **Show Form**: Display a form for subject (e.g., Biology), type (e.g., syllabus), and file (PDF/MP4).	- Confirm institution is verified.	- Subject is valid (e.g., Biology).
			2. Content must be categorized by subject and type (e.g., syllabus, lecture).	2. **Validate Inputs**:	- Verify subject and type are specified.	- Type is valid (e.g., syllabus).
			3. Content must be PDF or MP4 format.	- Check institution is verified.	- Ensure file is PDF/MP4.	- File is PDF/MP4, < 50MB.
			4. Institutions can upload up to 5 files per day.	- Ensure subject, type, and file are provided.	- Check upload count < 5 per day.	- Upload count < 5.
				- Verify file is PDF/MP4, < 50MB.		- Rating is numeric (1-5).
				- Check daily upload count < 5.		
				3. **Upload Content**:		
				- Store file in cloud (e.g., AWS S3).		
				- Save metadata (subject, type, institution ID) in database.		
				4. **Publish Content**: Make content available to students.		
				5. **Feedback Option**: Allow students to rate content (1-5 stars); store in database.		
				6. **Track Usage**: Log uploads for analytics.		
BF003	Advertise Services	Approve advertisement content	1. Only verified institutions can advertise services.	1. **Show Form**: Display a form for service details (e.g., degree program), target audience (e.g., A/L students), ad content (text/image), and expiry date.	- Confirm institution is verified.	- Service details are non-empty text.
			2. Ads must include service details and target audience.	2. **Validate Inputs**:	- Verify service details and target audience are provided.	- Target audience is valid (e.g., A/L students).
			3. Ads must be approved by admins.	- Check institution is verified.	- Ensure admin approval is completed.	- Image (if provided) is JPG/PNG, < 2MB.
			4. Ads must have an expiry date.	- Ensure all fields are filled.	- Check ad has expiry date and is published if approved.	- Expiry date is future and valid.
				- Verify image (if provided) is JPG/PNG, < 2MB.		
				3. **Submit Ad**:		
				- Save ad data in database with status “pending.”		
				- Notify admins for approval.		
				4. **Approve Ad**:		
				- Admin reviews content; sets status to “approved” or “rejected.”		
				- Email institution with result.		
				5. **Publish Ad**: If approved, display ad on *UniRoute* until expiry.		
				6. **Track Views**: Log ad views for analytics.		
BF004	Post Events or Announcements	Notify subscribed users	1. Only verified institutions can post events/announcements.	1. **Show Form**: Display a form for title, description, date, category (event/announcement), and optional image (JPG/PNG).	- Confirm institution is verified.	- Title and description are non-empty text.
			2. Posts must include title, description, and date.	2. **Validate Inputs**:	- Verify title, description, date, and category are provided.	- Date is future (for events) or valid.
			3. Posts must be categorized (e.g., event, announcement).	- Check institution is verified.	- Ensure notifications are sent to subscribed users.	- Category is valid (event/announcement).
			4. Posts must be visible to relevant users (e.g., subscribed students).	- Ensure title, description, date, and category are provided.	- Check post is visible in news feed.	- Image (if provided) is JPG/PNG, < 2MB.
				- Verify image (if provided) is JPG/PNG, < 2MB.		- Rating is numeric (1-5).
				3. **Submit Post**:		
				- Save post data in database.		
				- Notify subscribed users via email or in-platform notification.		
				4. **Publish Post**: Display post on *UniRoute* news feed.		

				5. **Feedback Option**: Allow students to rate post (1-5 stars); store in database.		
				6. **Track Engagement**: Log views and interactions for analytics.		

Business Process: Company Interaction

BF Number	B. Function	Parallel Process	Business Rule	Logic	Business Rule Validation	Data Validation
BF001	Post Internship Opportunities	Verify company credentials	1. Only verified companies can post internships.	1. **Show Form**: Display a form for internship title, description, eligibility (e.g., A/L students, IT skills), duration, location, and deadline.	- Confirm company is verified.	- Title and description are non-empty text.
			2. Internships must include title, description, and eligibility criteria.	2. **Validate Inputs**:	- Verify title, description, and eligibility are provided.	- Eligibility is valid (e.g., A/L students).
			3. Posts must be approved by admins.	- Check company is verified.	- Ensure admin approval is completed.	- Deadline is future and valid.
			4. Internships must have an application deadline.	- Ensure all fields are filled.	- Check deadline is set and post is published if approved.	- Duration and location are non-empty.
				- Verify deadline is future.		
				3. **Submit Post**:		
				- Save data in database with status “pending.”		
				- Notify admins via email for approval.		
				4. **Approve Post**:		
				- Admin reviews content; sets status to “approved” or “rejected.”		
				- Email company with result.		
				5. **Publish Post**: If approved, display internship on *UniRoute* job board.		
				6. **Track Applications**: Log student applications for analytics.		
BF002	Publish Educational Content	Validate content files	1. Only verified companies can publish content.	1. **Show Form**: Display a form for subject (e.g., IT), type (e.g., tutorial), and file (PDF/MP4).	- Confirm company is verified.	- Subject is valid (e.g., IT).
			2. Content must be categorized by subject and type (e.g., tutorial, career guide).	2. **Validate Inputs**:	- Verify subject and type are specified.	- Type is valid (e.g., tutorial).
			3. Content must be PDF or MP4 format.	- Check company is verified.	- Ensure file is PDF/MP4.	- File is PDF/MP4, < 50MB.
			4. Companies can upload up to 3 files per day.	- Ensure subject, type, and file are provided.	- Check upload count < 3 per day.	- Upload count < 3.
				- Verify file is PDF/MP4, < 50MB.		- Rating is numeric (1-5).
				- Check daily upload count < 3.		
				3. **Upload Content**:		
				- Store file in cloud (e.g., AWS S3).		
				- Save metadata (subject, type, company ID) in database.		
				4. **Publish Content**: Make content available to students.		
				5. **Feedback Option**: Allow students to rate content (1-5 stars); store in database.		
				6. **Track Usage**: Log uploads and views for analytics.		
BF003	Sponsor Content or Ads	Process sponsorship payment	1. Only verified companies can sponsor content/ads.	1. **Show Form**: Display a form for content/ad type (e.g., banner ad, sponsored post), duration, target audience, and content (text/image).	- Confirm company is verified.	- Type is valid (e.g., banner ad).
			2. Sponsorships must specify content/ad type and duration.	2. **Validate Inputs**:	- Verify type, duration, and content are provided.	- Duration is valid (e.g., 30 days).
			3. Sponsorships require admin approval and payment confirmation.	- Check company is verified.	- Ensure payment and admin approval are completed.	- Image (if provided) is JPG/PNG, < 2MB.
			4. Sponsored content/ads must be tagged as sponsored.	- Ensure all fields are filled.	- Check content/ad is tagged as sponsored.	- Payment status is confirmed.
				- Verify image (if provided) is JPG/PNG, < 2MB.		
				3. **Submit Sponsorship**:		
				- Save data in database with status “pending.”		
				- Redirect to payment gateway (e.g., Stripe).		
				4. **Process Payment**:		
				- Confirm payment success; notify admins for approval.		

				5. **Approve Sponsorship**:		
				- Admin reviews content; sets status to “approved” or “rejected.”		
				- Email company with result.		
				6. **Publish Sponsorship**: If approved, display tagged content/ad for duration.		
				7. **Track Views**: Log views for analytics.		

Business Process: Admin Interaction

BF Number	B. Function	Parallel Process	Business Rule	Logic	Business Rule Validation	Data Validation
BF001	UGC Data Management	Log data changes	1. Only admins can manage UGC data.	1. **Show Dashboard**: Display a form to add/edit UGC data (university, program, accreditation, duration, credits).	- Confirm user is admin.	- University and program names are non-empty.
			2. Data must include university, program, and accreditation details.	2. **Validate Inputs**:	- Verify university, program, and accreditation are provided.	- Accreditation details are valid text.
			3. Changes must be logged with timestamp and admin ID.	- Check user is admin.	- Ensure changes are logged.	- Duration and credits are numeric.
			4. Data must be sourced from official UGC records.	- Ensure all fields are filled.	- Check data source is UGC-compliant.	- Issue reports (if any) are text, < 500 characters.
				- Verify data aligns with UGC records (manual check or API).		
				3. **Save Data**:		
				- Store or update data in database.		
				- Log change (admin ID, timestamp, action) in audit table.		
				4. **Notify Stakeholders**:		
				- Email institutions if their data is updated.		
				5. **Publish Data**: Make updated data available on *UniRoute* .		
				6. **Track Errors**: Allow admins to flag data issues; store in database.		
BF002	User Management	Notify users of status changes	1. Only admins can manage users.	1. **Show Dashboard**: Display a list of users with filters (role, status) and options to verify, suspend, or delete.	- Confirm user is admin.	- Role is valid (e.g., student, mentor).
			2. Users must have a role (e.g., student, mentor, company).	2. **Validate Actions**:	- Verify user has a role.	- Proof file is PDF/image, < 5MB.
			3. Verification requires proof documents.	- Check user is admin.	- Ensure proof is provided for verification.	- Reason for suspension/deletion is non-empty text.
			4. Suspended users cannot access platform features.	- For verification: Ensure proof (e.g., ID, certificate) is PDF/image, < 5MB.	- Check suspended users are blocked from features.	- Issue reports are text, < 500 characters.
				- For suspension/deletion: Confirm reason is provided.		
				3. **Process Action**:		
				- Verification: Update status to “verified”; notify user via email.		
				- Suspension: Disable account access; notify user.		
				- Deletion: Remove account; log action.		
				4. **Log Changes**: Record action (admin ID, timestamp, user ID) in audit table.		
				5. **Track Issues**: Allow admins to flag user issues; store in database.		
BF003	Content Moderation	Notify content owners	1. Only admins can moderate content.	1. **Show Queue**: Display a list of pending content (e.g., resources, videos) with details (subject, type, file).	- Confirm user is admin.	- Content file is PDF/MP4, < 50MB.
			2. Content must meet *UniRoute* guidelines (e.g., no profanity, educational).	2. **Validate Review**:	- Verify content meets guidelines.	- Reason for rejection is non-empty text.
			3. Content status must be updated (approved/rejected).	- Check user is admin.	- Ensure status is updated.	- Issue reports are text, < 500 characters.
			4. Owners must be notified of moderation outcome.	- Ensure content file is accessible (PDF/MP4).	- Check owner is notified.	
				- Verify content meets guidelines (manual check).		
				3. **Moderate Content**:		

				- Approve: Set status to “approved”; publish on *UniRoute* .		
				- Reject: Set status to “rejected”; provide reason.		
				- Notify owner via email with outcome and reason (if rejected).		
				4. **Log Moderation**: Record action (admin ID, timestamp, content ID) in audit table.		
				5. **Track Issues**: Allow admins to flag content issues; store in database.		
BF004	Manage Advertisements	Notify advertisers	1. Only admins can manage ads.	1. **Show Queue**: Display a list of pending ads with details (content, type, payment status).	- Confirm user is admin.	- Ad content is non-empty text or JPG/PNG, < 2MB.
			2. Ads must meet *UniRoute* guidelines (e.g., no misleading claims).	2. **Validate Review**:	- Verify ad meets guidelines.	- Reason for rejection is non-empty text.
			3. Ads require payment confirmation (if sponsored).	- Check user is admin.	- Ensure payment is confirmed for sponsored ads.	- Payment status is valid (confirmed/unconfirmed).
			4. Approved ads must be tagged as sponsored.	- Ensure ad content (text/image) meets guidelines.	- Check approved ads are tagged as sponsored.	- Issue reports are text, < 500 characters.
				- Verify payment is confirmed for sponsored ads.		
				3. **Moderate Ad**:		
				- Approve: Set status to “approved”; tag as sponsored; publish on *UniRoute* .		
				- Reject: Set status to “rejected”; provide reason.		
				- Notify advertiser via email with outcome and reason (if rejected).		
				4. **Log Moderation**: Record action (admin ID, timestamp, ad ID) in audit table.		
				5. **Track Issues**: Allow admins to flag ad issues; store in database.		
BF005	Generate Reports	Log report generation	1. Only admins can generate reports.	1. **Show Dashboard**: Display a form to select report type (e.g., user activity), period (e.g., weekly), and format (PDF/CSV).	- Confirm user is admin.	- Report type is valid (e.g., user activity).
			2. Reports must specify type (e.g., user activity, content uploads) and period.	2. **Validate Inputs**:	- Verify report type and period are specified.	- Period is valid (e.g., date range).
			3. Data must be accurate and aggregated from database.	- Check user is admin.	- Ensure data is aggregated accurately.	- Format is PDF or CSV.
			4. Reports must be exportable as PDF or CSV.	- Ensure type and period are selected.	- Check report is exportable in chosen format.	- Issue reports are text, < 500 characters.
				- Verify period is valid (e.g., past or current dates).		
				3. **Generate Report**:		
				- Query database for relevant data (e.g., user sign-ups, uploads).		
				- Aggregate data (e.g., counts, averages).		
				- Format as PDF or CSV.		
				4. **Save Log**:		
				- Record action (admin ID, timestamp, report type) in audit table.		
				5. **Deliver Report**: Provide download link or email report to admin.		
				6. **Track Issues**: Allow admins to flag report errors; store in database.		
BF006	Feedback Analysis	Aggregate feedback metrics	1. Only admins can analyze feedback.	1. **Show Dashboard**: Display a form to select feedback source (e.g., mentoring), period, and format (PDF/CSV).	- Confirm user is admin.	- Source is valid (e.g., mentoring).
			2. Feedback must include ratings (1-5 stars) and comments.	2. **Validate Inputs**:	- Verify feedback source and period are specified.	- Period is valid (e.g., date range).
			3. Analysis must be filterable by source (e.g., mentoring, content).	- Check user is admin.	- Ensure metrics are calculated accurately.	- Ratings are numeric (1-5).
			4. Results must be exportable as PDF or CSV.	- Ensure source and period are selected.	- Check results are exportable in chosen format.	- Comments are text, < 500 characters.
				- Verify period is valid.		- Format is PDF or CSV.
				3. **Analyze Feedback**:		- Issue reports are text, < 500 characters.

BF006	Feedback Analysis	Aggregate feedback metrics		- Query database for ratings and comments by source and period.		
				- Calculate metrics (e.g., average rating, comment count).		
				- Generate charts (e.g., rating distribution).		
				4. **Save Log**:		
				- Record action (admin ID, timestamp, source) in audit table.		
				5. **Deliver Analysis**: Provide download link or email report with charts.		
				6. **Track Issues**: Allow admins to flag analysis errors; store in database.		
BF007	Payment & Revenue Oversight	Log payment transactions	1. Only admins can oversee payments.	1. **Show Dashboard**: Display a form to select transaction type (e.g., ads, courses), period, and format (PDF/CSV).	- Confirm user is admin.	- Transaction type is valid (e.g., ads).
			2. Oversight must include transaction details (e.g., amount, source).	2. **Validate Inputs**:	- Verify transaction type and period are specified.	- Period is valid (e.g., date range).
			3. Data must be secure and restricted to admins.	- Check user is admin.	- Ensure data is secure (admin-only access).	- Amount is numeric, >= 0.
			4. Reports must be exportable as PDF or CSV.	- Ensure type and period are selected.	- Check report is exportable in chosen format.	- Format is PDF or CSV.
				- Verify period is valid.		- Issue reports are text, < 500 characters.
				3. **Fetch Transactions**:		
				- Query database for transactions (e.g., amount, source, date).		
				- Aggregate data (e.g., total revenue, transaction count).		
				- Use encrypted session for data access.		
				4. **Save Log**:		
				- Record action (admin ID, timestamp, type) in audit table.		
				5. **Deliver Report**: Provide download link or email report with summary.		
				6. **Track Issues**: Allow admins to flag transaction errors; store in database.		