Assignment: Online Flight Management System Requirements

Student Name: Nalisha Phiri
Student ID: SE2023004
College: Lusaka Institute of Technology (LIT)
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1. Introduction - What this App is About

Okay, so this document is basically to explain what our flight booking app needs to do. We're calling it the "Zambian SkyConnect" (ZSC) system. The main idea is to make it super easy for people in Zambia (and anyone really) to find flights, book them, and pay for them online. It also needs to have some admin stuff for the airline folks. It's supposed to replace all that old-fashioned paper work and phone calls.

2. Who's Going to Use This?

2.1 Users

There are two main types of people who will use this app:

- **Passengers (like us!):** Anyone who wants to buy a ticket. They need to be able to search, book, and see their flights. They'll probably use their phones a lot for this.
- **Airline Staff (the guys who run the show):** People at the airline offices who handle the flights, change schedules, or help customers with their bookings. They need special access.

2.2 Where it'll Run

It's a website, so you'll open it in your browser (Chrome, Firefox, etc.). It needs to work on a computer or your phone, no problem. We'll host it somewhere in the cloud so it's always online.

2.3 What Could Go Wrong (or What We Assume)

We're assuming everyone has internet access, obviously. And that the payment systems (like mobile money or bank cards) will actually work with our app. We also need a good database to store all the flight and user info.

2.4 Important Rules

- **Security First!** People are putting in their details and money, so it HAS to be secure. No leaks. Everything needs to be encrypted.
- **Regulations:** Gotta follow all the rules for airlines and privacy in Zambia.

3. What the App *Must* Do (The Functions)

3.1 Signing Up and Logging In

- **F1:** New people can sign up with their email, a password, and some personal info (name, phone).
- **F2:** If you have an account, you can log in.
- **F3:** You can change your details in your profile after logging in.
- **F4:** If you forget your password, there's a way to reset it using your email.

3.2 Finding Flights

- **F5:** You can search for flights. Need to put in where you're flying from, where you're going, dates (one-way or return), and how many people are travelling.
- **F6:** The app shows you a list of flights. Each listing needs to show the airline, flight number, times, how long it takes, any stops, and the price.
- **F7:** Filters are important! So you can sort by cheapest, fastest, specific airline, or direct flights.

3.3 Booking a Flight

- **F8:** Once you find a flight, you click to select it.
- **F9:** Then you'll need to type in everyone's names and details for the booking.
- **F10:** Before paying, you get to see a summary of everything to check if it's correct.
- **F11:** After booking, it gives you a special code (booking reference).

3.4 Paying for Your Ticket

- **F12:** It needs to connect to popular payment methods like bank cards (Visa/MasterCard) or maybe even local mobile money options. This part must be super secure.
- **F13:** When the payment goes through, your booking changes to "confirmed" right away.
- **F14:** You get an electronic ticket (e-ticket) and a booking confirmation sent to your email.

3.5 Admin Side (for Airline Staff)

- **F15:** Admin staff need to add new flights, change existing flight details (like times or how many seats are available), or cancel flights.
- **F16:** They also need to look up customer bookings, change them if needed, or cancel them.
- **F17:** The system should generate reports, like how many seats are full on flights, how much money was made, or lists of passengers.

4. How it Looks and Talks to Other Stuff

4.1 How it Looks

It's a website, so it needs to look good and be easy to use on any device – big computer screen or small phone screen. Everything should be clear and easy to click.

4.2 How it Connects (Other Software)

- **Payment APIs:** The important one for taking money.
- **Email APIs:** For sending those e-tickets and confirmations.
- **(Maybe later):** Connect to the airline's own systems for real-time flight data.

4.3 How it Communicates (Security!)

All communication has to be secure, using HTTPS, especially when dealing with personal or payment info.

5. The "Good Stuff" (Non-Functional Requirements)

5.1 Speed

- **NFR1:** When you search for a flight, results should appear in 2 seconds, almost every time.
- **NFR2:** Even if lots of people are using it at once (say, 70 people searching or booking), it shouldn't slow down.

5.2 Security (Again!)

- **NFR3:** Passwords are kept super secret, encrypted.
- **NFR4:** Only admin staff with the right permissions can do admin stuff.
- **NFR5:** All sensitive data (like your card details) is encrypted, whether it's being sent or just sitting in the database.
- **NFR6:** Secure user sessions so nobody can hijack your account.

5.3 Reliability (Always Works)

- **NFR7:** The system needs to be up and running almost all the time (like 99.7% of the time), except for when we're doing planned maintenance.
- **NFR8:** We need a good backup plan so no booking data ever gets lost.

5.4 Easy to Use

- **NFR9:** Someone who's never used it before should be able to book a flight in about 5 clicks or steps.
- **NFR10:** If something goes wrong (e.g., wrong input), the app tells you clearly what happened and how to fix it.

5.5 Growing with Us (Scalability)

The system should be built in a way that we can easily add more flights, more users, and more features in the future without breaking anything.

5.6 Easy to Fix/Update (Maintainability)

The code needs to be neat and tidy, with good notes, so if someone new comes to work on it, they can understand it easily and fix bugs or add new stuff without causing new problems. Updates should be quick and smooth.