🚀 CertTracker MVP Development Plan

📋 Executive Summary

Vision: Create the simplest, most effective way for IT professionals to track certification expiration dates and never miss a renewal deadline.

Core Problem: IT professionals lose valuable certifications due to missed renewal deadlines, potentially impacting career growth and job requirements.

MVP Solution: A streamlined certification tracking system with automated reminders.

🎯 Step 1: Understanding the MVP Concept

Primary Goal

Validate that IT professionals will use a simple certification tracking tool with email reminders.

Success Metrics

- **User Registration**: 100+ users in first month
- **Engagement**: 70%+ users add at least one certification
- **Retention**: 40%+ users return within 7 days
- **Value Proof**: 80%+ users find reminders helpful

Hypothesis

"If we provide IT professionals with a simple way to track certification expiration dates and send automated reminders, they will actively use the service and recommend it to colleagues."

🔧 Step 2: Identifying Core Features (Feature Prioritization)

✅ MUST HAVE (MVP Core)

1. **User Authentication**
   - Email/password registration and login
   - AWS Cognito integration (already built)
2. **Certification Management**
   - Add certification manually (name, provider, expiry date)
   - View certifications in simple dashboard

- Delete certifications

3. **Basic Reminder System**
   - Email reminders at 90, 60, and 30 days before expiry
   - Simple email templates
4. **Minimal Dashboard**
   - List of certifications with status (active/expiring soon)
   - Days until expiration counter

🚧 NICE TO HAVE (Post-MVP)

- File upload for certificates
- Advanced analytics
- Digital badges
- Career progress tracking
- Multi-user teams
- Mobile app
- Integration with certification providers

❌ NOT NOW (Future Versions)

- Complex reporting
- Social features
- Third-party integrations
- Advanced notifications (SMS, Slack)
- Bulk import

📖 Step 3: Creating User Stories

Primary User Persona

"Sarah, the Security Engineer"

- 5+ years experience in cybersecurity
- Holds 3-4 active certifications (Security+, CISSP, AWS)
- Busy schedule, often forgets renewal dates
- Values simple, reliable tools

Core User Stories

Epic 1: Account Management

- As Sarah, I want to create an account so I can securely store my certification data
- As Sarah, I want to log in quickly so I can check my certifications anytime

Epic 2: Certification Tracking

- As Sarah, I want to add my certifications with expiry dates so I don't lose track of them
- As Sarah, I want to see all my certifications in one place so I can quickly assess my status
- As Sarah, I want to see how many days until each cert expires so I can prioritize renewals

Epic 3: Reminder System

- As Sarah, I want to receive email reminders before my certs expire so I never miss a deadline
- As Sarah, I want reminders at different intervals (90, 60, 30 days) so I have adequate time to plan

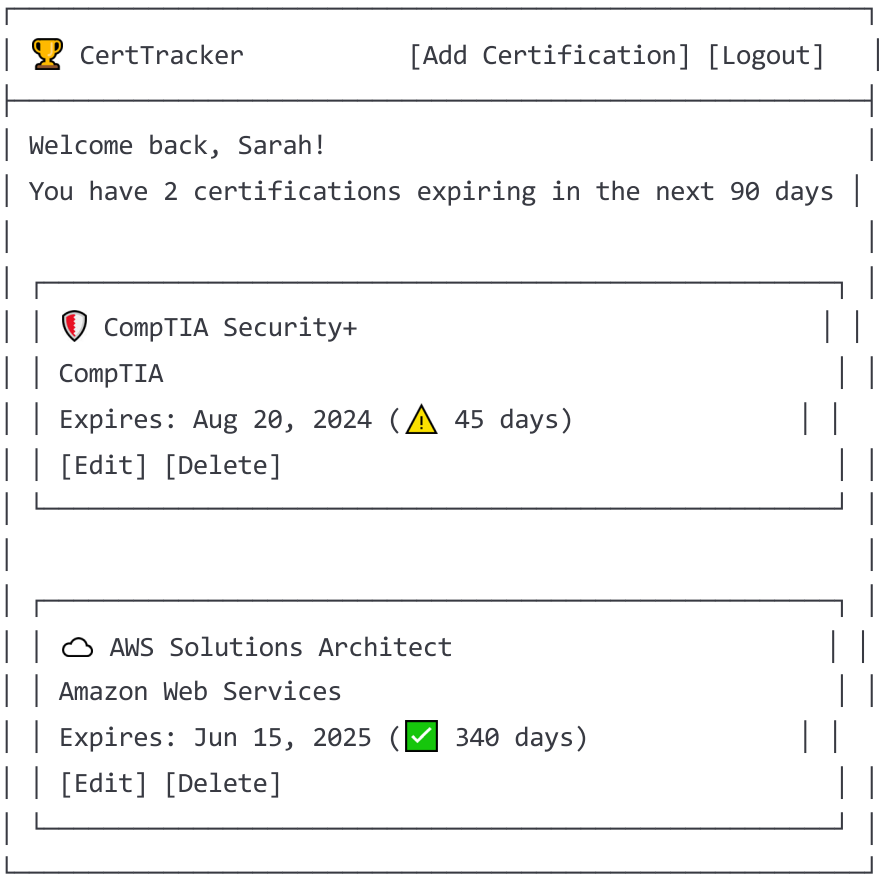
Epic 4: Basic Management

- As Sarah, I want to update or delete certifications so my list stays current

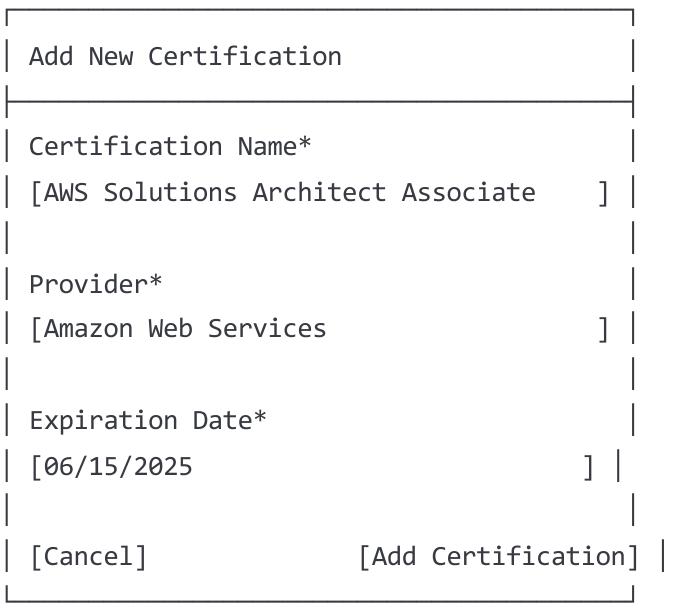
---

🎨 Step 4: Developing Wireframes

Dashboard Wireframe



Add Certification Form



🛠️ Step 5: Technical Implementation Plan

Architecture (Leveraging Existing)

- **Frontend**: React SPA (existing codebase)
- **Backend**: AWS Lambda + API Gateway (existing)
- **Database**: DynamoDB (existing schema)
- **Auth**: AWS Cognito (existing)
- **Notifications**: AWS SES + CloudWatch Events

MVP Database Schema

```javascript
// Users Table (via Cognito + DynamoDB)
{
  userId: "uuid",
  email: "user@example.com",
  name: "User Name",
  createdAt: "2024-01-01T00:00:00Z"
}

// Certifications Table
{
  certId: "uuid",
  userId: "uuid",
  name: "AWS Solutions Architect",
  provider: "Amazon Web Services",
  expiryDate: "2025-06-15",
  status: "active", // active, expiring, expired
  createdAt: "2024-01-01T00:00:00Z",
  updatedAt: "2024-01-01T00:00:00Z"
}

// Reminders Table
{
  reminderId: "uuid",
  certId: "uuid",
  userId: "uuid",
  reminderDate: "2025-03-15",
  reminderType: "90_days", // 90_days, 60_days, 30_days
  sent: false,
  sentAt: null
}
```

API Endpoints (MVP)

```
POST /auth/register
POST /auth/login
GET  /certifications
POST /certifications
PUT  /certifications/{id}
DELETE /certifications/{id}
GET  /user/profile
```

Development Phases

Phase 1: Core Backend (Week 1)

- Set up DynamoDB tables
- Implement CRUD API for certifications
- Basic authentication flow
- Unit tests for core functionality

Phase 2: Frontend MVP (Week 2)

- Clean dashboard design
- Add/edit/delete certification forms
- Authentication pages
- Responsive design basics

Phase 3: Reminder System (Week 3)

- CloudWatch Events for daily reminder checks
- SES email templates
- Reminder calculation logic
- Email delivery tracking

Phase 4: Polish & Deploy (Week 4)

- Bug fixes and optimization
- Production deployment
- Basic monitoring setup
- User testing feedback integration

🧪 Step 6: Testing & Validation Strategy

Testing Approach

Unit Tests

- API endpoint functionality
- Reminder calculation logic
- Database operations
- Email template rendering

Integration Tests

- End-to-end user flows
- Authentication processes
- Email delivery pipeline
- Frontend-backend integration

User Acceptance Testing

- 10-15 beta users from target audience
- Task-based testing scenarios
- Feedback collection via surveys
- Performance monitoring

Validation Metrics

- **Technical**: < 2s page load, 99% uptime
- **User Experience**: < 3 clicks to add certification
- **Business**: 60%+ email open rate for reminders

🚀 Step 7: Launch Strategy

Pre-Launch (2 weeks before)

- Beta testing with 15 selected users
- Bug fixes and final optimizations
- Documentation and help content
- Email templates and onboarding sequence

Launch Day

- Deploy to production
- Social media announcement
- Direct outreach to IT communities
- Product Hunt submission

Post-Launch (First 30 days)

- Daily monitoring and support
- User feedback collection
- Weekly iteration cycles
- Performance optimization

Marketing Channels

1. **IT Communities**: Reddit (r/sysadmin, r/cybersecurity), Discord servers
2. **Professional Networks**: LinkedIn posts, Twitter
3. **Direct Outreach**: Local IT meetups, certification training centers
4. **Content Marketing**: "How to manage IT certifications" blog posts

---

💰 Cost Optimization (AWS Free Tier)

Estimated Monthly Costs

- **DynamoDB**: $0-2 (under 25GB free tier)
- **Lambda**: $0 (1M requests free)
- **S3**: $0-1 (5GB free)
- **SES**: $0 (62k emails free)
- **CloudFront**: $0 (1TB transfer free)
- **Total**: $0-5/month for MVP

Scaling Considerations

- DynamoDB on-demand pricing
- Lambda concurrent execution limits
- SES sending limits (200 emails/day initially)

📊 Success Criteria & KPIs

Week 1-2 (Soft Launch)

- 25+ user registrations
- 15+ certifications added
- 0 critical bugs
- < 3s average page load time

Month 1

- 100+ active users
- 200+ certifications tracked
- 70%+ email open rate
- 40%+ weekly retention
- NPS Score > 6

Month 3 (MVP Validation)

- 500+ active users
- 1000+ certifications tracked
- Feature requests prioritized for v2
- Revenue model validation ready

🔄 Next Steps After MVP

Immediate Improvements (v1.1)

1. File upload for certificate images
2. Bulk certification import
3. Mobile-responsive improvements
4. Advanced notification preferences

Future Features (v2.0)

1. Team/organization accounts
2. Certification marketplace integration
3. Career progression tracking
4. Mobile app development
5. API for third-party integrations

📞 Risk Mitigation

Technical Risks

- **Risk**: AWS service outages
- **Mitigation**: Multi-AZ deployment, status page communication

Business Risks

- **Risk**: Low user adoption
- **Mitigation**: Strong beta testing, community engagement

Competitive Risks

- **Risk**: Larger competitors entering market
- **Mitigation**: Focus on simplicity and user experience

🎉 Conclusion

This MVP focuses on solving one core problem exceptionally well: helping IT professionals track certification expiration dates with reliable reminders. By following the SaaS blueprint's 7-step process and leveraging the existing CertTracker foundation, we can validate the market need with minimal resources while building a scalable foundation for future growth.

Next Action: Begin Phase 1 development with backend API implementation and DynamoDB schema setup.