

# Buddy: Voice-First Dementia Care Assistant

## Amazon Nova Hackathon 2026 - Complete Project Plan

**Hackathon Category:** Voice AI

**Submission Deadline:** March 16, 2026, 5:00 PM PDT

**Developer:** Anthony (Individual Professional Developer)

**Project Type:** New project using Amazon Nova 2 Sonic + Nova 2 Lite

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### Executive Summary

**Buddy** is an AI-powered voice assistant designed specifically for people living with dementia and Alzheimer's disease. Built with Amazon Nova 2 Sonic's speech-to-speech capabilities and Nova 2 Lite for agentic reasoning, Buddy provides 24/7 memory support, routine guidance, and intelligent safety escalation—all through natural voice conversations.

### Core Value Proposition

- **For patients:** Reduces anxiety through consistent memory support, familiar voice interactions, and gentle routine guidance
- **For caregivers:** Alleviates burnout through 24/7 monitoring, intelligent escalation alerts, and comprehensive conversation logging
- **For the healthcare system:** Addresses the 55 million people globally affected by dementia with a scalable, privacy-focused solution

### Competitive Differentiation

While existing solutions like Alexa Together[26], CogniCare[28], and ElliQ[31] provide general elder care or educational content, **Buddy** uniquely combines:

1. **Nova Sonic's interruption handling** for natural dementia conversations (patients often trail off or repeat)[2][5]
  2. **3-level safety escalation** with caregiver-first protocols and emergency pathways[32]
  3. **Retrieval-grounded responses** from personalized knowledge graphs (family names, routines, medications)[17]
  4. **Dementia-specific conversation patterns** adapted from I-CONNECT clinical trial protocols[25]
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### Hackathon Submission Requirements

Category Selection

**Voice AI** - Primary category leveraging Nova 2 Sonic bidirectional streaming

Required Components

Component	Deliverable
Demo Video	3-minute video showing: (1) Normal routine help, (2) Memory prompt, (3) Safety escalation. Must include #AmazonNova hashtag[1]
Code Repository	Public GitHub repo with deployment instructions. Share access with testing@devpost.com and Amazon-Nova-hackathon@amazon.com[1]
Testing Access	Working demo with clear setup instructions. Include test credentials if authentication required[1]
Text Description	Brief summary explaining purpose and Nova integration (see Technical Implementation section)[1]

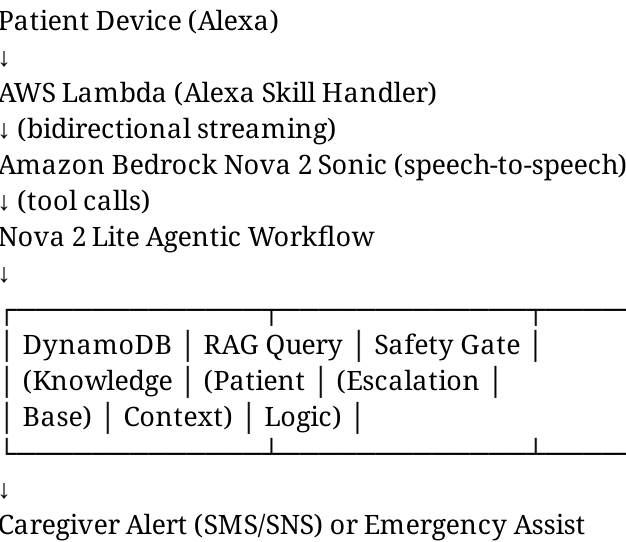
Judging Criteria Alignment

Criteria	Weight	Buddy's Approach
Technical Implementation	60%	Nova Sonic + Nova Lite agent, RAG pipeline, AWS Lambda/DynamoDB architecture, real-time safety detection[4]
Enterprise/Community Impact	20%	Addresses 55 million dementia patients globally, reduces caregiver burnout (30% patient satisfaction boost cited)[28], 24/7 accessibility
Creativity & Innovation	20%	First dementia assistant leveraging Sonic's barge-in for fragmented speech patterns, 3-level escalation with caregiver-controlled knowledge base

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# System Architecture

## High-Level Design



## Technology Stack

Layer	Technology	Purpose
Voice Interface	Amazon Nova 2 Sonic	Speech-to-speech with interruption handling, 300K context window, 8-minute sessions[18]
Agentic Reasoning	Amazon Nova 2 Lite	Tool orchestration, safety classification, context-aware responses[6][12]
Backend Orchestration	AWS Lambda (Python)	Alexa skill fulfillment, tool execution, escalation workflow[27][30]
Knowledge Storage	Amazon DynamoDB	Patient profiles, routines, family context, medication schedules[27][36]
Vector Search	Amazon OpenSearch Serverless	RAG for retrieving relevant memories and care plan documents[36]
Caregiver Alerts	Amazon SNS	SMS notifications for Level 1 & 2 escalations[36]
Emergency Protocol	Alexa Emergency Assist	24/7 urgent response line (\$6/month per household)[32][35]
Monitoring	Amazon CloudWatch	Conversation logs, safety trigger tracking, repetition detection[16]

## Data Architecture

### Patient Knowledge Graph Schema (DynamoDB)

```
{
  "patientId": "string (UUID)",
  "profile": {
    "name": "string",
    "preferredName": "string",
    "birthdate": "ISO date",
    "dementiaStage": "early | moderate | advanced"
  },
  "people": [
    {
      "name": "Sarah",
      "relationship": "daughter",
```

```
"visitSchedule": "Tuesdays",
"sharedActivities": ["gardening"],
"photoUrl": "s3://bucket/sarah.jpg"
}
],
"routines": [
{
"timeOfDay": "morning",
"steps": ["brush teeth", "take medication", "eat breakfast"],
"context": "Toothbrush is in the blue cup by the sink"
}
],
"medications": [
{
"name": "Donepezil",
"dosage": "10mg",
"timing": "after breakfast",
"appearance": "small white round pill"
}
],
"safetyProfile": {
"caregiverPhone": "+1-555-0123",
"emergencyContacts": ["daughter", "neighbor"],
"medicalConditions": ["Alzheimer's", "hypertension"],
"allergies": ["penicillin"],
"knownTriggers": ["nighttime confusion", "crowds"]
},
"conversationHistory": [
{
"timestamp": "ISO datetime",
"intent": "medication_query",
"userUtterance": "What do I take after breakfast?",
"assistantResponse": "You take your Donepezil...",
"escalationLevel": 0,
"repeatCount": 1
}
]
}
```

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## Core Features (MVP Scope)

### Feature 1: Voice-First Memory Support

**User Story:** "As a person with dementia, I want to ask about my daily routine so I feel less confused and anxious."

#### Implementation:

- **Input:** User says "What do I do next?" or "What happens this morning?"
- **Processing:**
  1. Nova Sonic captures speech with interruption tolerance (user may trail off)[2]

2. Lambda queries DynamoDB for current time + patient routine
  3. Nova Lite agent selects appropriate routine step based on time
  4. Nova Sonic responds with calming, step-by-step guidance
- **Output:** "Let's brush your teeth. First, find your toothbrush in the blue cup by the sink. Would you like me to guide you through it?"

#### Technical Details:

## Lambda handler snippet

```
def handle_routine_query(patient_id, current_time):
# Retrieve routine from DynamoDB
routine = dynamodb.get_item(
    TableName='PatientProfiles',
    Key={'patientId': patient_id}
)['Item']['routines']

# Match time of day
time_period = get_time_period(current_time) # morning/afternoon/evening
steps = [r for r in routine if r['timeOfDay'] == time_period][0]['steps']

# Format for Sonic response
return {
    'response': f"Let's {steps[0]}. {steps[0].get('context', '')}",
    'nextSteps': steps[1:],
    'tone': 'calm_encouraging'
}
```

## Feature 2: Family & People Recognition

**User Story:** "As a patient, I want to remember who Sarah is without feeling embarrassed about asking repeatedly."

#### Implementation:

- **Input:** "Who is Sarah?" or "Tell me about Sarah"
- **Processing:**
  1. Query DynamoDB people array for matching name
  2. Retrieve relationship, visit schedule, shared activities
  3. Format response with warm, reassuring tone
- **Output:** "Sarah is your daughter. She visits on Tuesdays and loves gardening with you. Would you like to hear more about your last visit together?"

#### Repetition Handling:

- Track repeatCount in conversation history
- After 3rd repetition within 2 hours → Log as Level 1 concern, notify caregiver

- Maintain consistent answer to build trust (never "You already asked that") [25]

### Feature 3: Medication Reminders

**User Story:** "As a patient, I want to know what medication to take without having to read labels or remember schedules."

#### Implementation:

- **Input:** "What do I take after breakfast?" or "Do I need medication now?"
- **Processing:**
  1. Query medications with timing = "after breakfast"
  2. Check conversation history for recent confirmation
  3. Include safety disclaimer
- **Output:** "You take Donepezil, a small white round pill, after breakfast. Please confirm with your caregiver if you're unsure. Would you like me to call them?"

#### Safety Rails:

- Never diagnose or suggest changing dosages
- Always include "confirm with caregiver/pharmacist" disclaimer
- Log all medication queries for caregiver review

### Feature 4: 3-Level Safety Escalation

**User Story:** "As a caregiver, I want to be notified immediately if my loved one is in danger, but not overwhelmed by false alarms."

#### Level 0: Normal Conversation

- Routine queries, memory prompts, casual conversation
- No alerts, standard logging only

#### Level 1: Concerning Behavior

##### Triggers:

- Repeating same question 4+ times in 2 hours
- Agitation keywords: "scared," "confused," "lost," "can't find"
- Off-schedule queries: "Why is it dark?" at 3 AM
- Location confusion: "Where am I?"

##### Response:

1. Buddy uses calming techniques: "You're safe at home. Let's take a deep breath together."
2. Structured redirection: "Would you like to hear your favorite music?"
3. **Caregiver SMS notification** (non-urgent): "Buddy noticed John asked 'Where am I?' 4 times in the past hour. Conversation log: [link]"
4. Buddy stays engaged until patient calms or caregiver responds

#### Implementation:

```
def classify_safety_level(utterance, conversation_history):
# Hard keyword rules
```

```
level_1_keywords = ['scared', 'confused', 'lost', 'help find', 'where am i']
level_2_keywords = ['fell', 'bleeding', 'chest pain', 'fire', 'can't breathe']
```

```
if any(kw in utterance.lower() for kw in level_2_keywords):
    return 2

# Check repetition rate
recent_queries = [h for h in conversation_history
                   if h['timestamp'] > now() - timedelta(hours=2)]
repeat_count = len([q for q in recent_queries
                    if q['userUtterance'] == utterance])

if repeat_count >= 4 or any(kw in utterance.lower() for kw in level_1_keywords):
    return 1

# LLM risk classifier (Nova Lite agent)
risk_assessment = nova_lite_agent.classify_risk({
    'utterance': utterance,
    'patient_stage': patient_profile['dementiaStage'],
    'time_of_day': current_time,
    'conversation_context': recent_queries
})

return risk_assessment['level'] # 0, 1, or 2
```

## Level 2: Emergency

### Triggers:

- Explicit danger: "I fell," "I'm bleeding," "chest pain," "I can't breathe"
- Fire/safety: "smoke," "fire," "gas smell"
- Threats: "someone's in the house," "he has a weapon"
- No response after 3 prompts (potential medical event)

### Response:

1. Buddy immediately announces: "I'm contacting emergency services now. Stay on the line with me."
2. **Parallel actions:**
  - Caregiver SMS: "URGENT: John said 'I fell.' Initiating emergency protocol. Call him now: [phone]"
  - Alexa Emergency Assist invocation: "Alexa, call for help" (connects to 24/7 urgent response)[32]



3. Buddy continues calm instructions: "Help is coming. Can you tell me where you are? Are you able to unlock the door?"

**Caregiver Decision Point:**

- Caregiver receives SMS with two options:
  - "I'm calling 911 now" (stop auto-escalation)
  - "Proceed with emergency protocol" (Buddy continues Alexa Emergency Assist)

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## Conversation Design Patterns

### Dementia-Specific UX Principles

1. **Short sentences (10-15 words max):** "Let's brush your teeth. Find your toothbrush in the blue cup." NOT "Let's start your morning routine by locating your toothbrush, which should be in the blue cup by the sink, and then we'll proceed to brush your teeth." [25]
2. **Graceful interruption handling:** Nova Sonic's barge-in allows patients to interject mid-sentence without penalty (common in dementia conversations) [2][5]
3. **Consistent phrasing:** Always use exact same answer for repeated questions (builds trust, reduces anxiety) [25]
4. **Calm prosody:** Configure Nova Sonic with LOW endpointingSensitivity (2-second pause tolerance) for thoughtful patients [8]
5. **Clarifying questions over assumptions:** "Are you asking about breakfast or lunch?" vs. guessing intent
6. **Positive framing:** "Let's find your blue cup" NOT "You forgot where your cup is"

### Sample Conversation Flow

#### Scenario: Morning routine with mild confusion

Patient: "What... what do I do now?"

[Nova Sonic detects speech, tolerates pause]

Buddy: "Good morning! Let's start your morning. First, brush your teeth."

[Retrieves routine from DynamoDB]

Patient: "Where's my... the thing for teeth?"

[Interrupts mid-thought - Sonic handles gracefully]

Buddy: "Your toothbrush is in the blue cup by the sink. Can you see it?"

[Retrieves context from routine.steps[0].context]

Patient: [30-second pause]

[Sonic waits with LOW sensitivity setting]

Patient: "Found it."

Buddy: "Wonderful! Put a small amount of toothpaste on the brush."

[Proceeds to next step]

Patient: "What do I do now?"

[Repeats original question - common in dementia]

Buddy: "You're brushing your teeth. Next, we'll have breakfast."  
[Consistent answer, gentle redirection]  
[Logs repeat count = 1, no alert yet]

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## Implementation Timeline

### Week 1 (Feb 6-12): Core Infrastructure

Day	Tasks	Deliverable
1-2	AWS setup: Lambda functions, DynamoDB tables, IAM roles. Request AWS credits (\$100 promo) [7]	Working AWS environment
3-4	Alexa Custom Skill creation, Nova Sonic bidirectional streaming integration[18]	Voice I/O functional
5-6	DynamoDB schema implementation, seed test data (1 patient profile)	Knowledge base queryable
7	Testing: Basic "What do I do next?" query with hardcoded routine	End-to-end demo

### Week 2 (Feb 13-19): Agentic Workflow

Day	Tasks	Deliverable
8-10	Nova Lite agent setup: tool definitions for DynamoDB queries, RAG retrieval[6][9]	Agent orchestrates tools
11-12	Safety classification logic: keyword rules + LLM risk scorer	3-level escalation working
13-14	Caregiver alert system: SNS integration, SMS formatting with conversation summaries[36]	Level 1 alerts functional

### Week 3 (Feb 20-26): Refinement

Day	Tasks	Deliverable
15-17	Alexa Emergency Assist integration for Level 2[32], caregiver decision workflow	Full escalation pathway
18-19	Conversation history logging, repetition detection, CloudWatch monitoring[16]	Analytics dashboard
20-21	Prompt tuning for dementia-friendly responses, tone optimization	Polished UX

#### Week 4 (Feb 27-Mar 5): Polish & Documentation

Day	Tasks	Deliverable
22-24	Caregiver input UI (web form for editing knowledge base)	Family can personalize
25-26	Edge case handling: unknown questions, failed tool calls, network errors[14]	Robust error handling
27-28	Documentation: README, deployment guide, architecture diagrams	GitHub repo complete

#### Week 5-6 (Mar 6-16): Demo Video & Submission

Day	Tasks	Deliverable
29-31	Script 3 demo scenarios, record with real Alexa device	Raw footage
32-34	Video editing: add #AmazonNova, captions, screen recordings of caregiver dashboard	3-minute video
35-36	Devpost submission: text description, testing credentials, repo links[1]	Submitted by Mar 16 5pm PDT
37-39	Optional: Blog post on builder.aws.com for bonus prize[1]	Published with Amazon-Nova tag

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# Demo Video Script (3 Minutes)

## Opening (0:00-0:20)

**Visual:** Anthony on camera

**Audio:** "I'm Anthony, and I built Buddy—an AI voice assistant for people living with dementia. With 55 million affected globally and caregiver burnout reaching crisis levels, Buddy provides 24/7 memory support that's always patient, always consistent."

**On-screen text:** "Built with Amazon Nova 2 Sonic + Nova 2 Lite"

## Demo 1: Routine Guidance (0:20-1:00)

**Visual:** Split screen - Alexa device + screen recording of Lambda logs

**Audio:**

- Patient: "What do I do this morning?"
- Buddy: "Good morning! Let's brush your teeth. Find your toothbrush in the blue cup by the sink."
- Patient: "Where's the cup?"
- Buddy: "The blue cup is by the sink. Can you see it?"

**Annotation callouts:**

- "Nova Sonic handles interruptions naturally"
- "Retrieves personalized routine from DynamoDB"
- "Short sentences + calming tone"

## Demo 2: Memory Prompt (1:00-1:30)

**Visual:** Screen recording of conversation log

**Audio:**

- Patient: "Who is Sarah?"
- Buddy: "Sarah is your daughter. She visits on Tuesdays and loves gardening with you."
- Patient: [pause]
- Patient: "Who's Sarah?" [repeat after 5 minutes]
- Buddy: "Sarah is your daughter. She visits on Tuesdays and loves gardening with you."

**Annotation callouts:**

- "Consistent answers build trust"
- "Tracks repetition without judgment"
- "Caregiver notified after 4th repeat"

## Demo 3: Safety Escalation (1:30-2:20)

**Visual:** Split screen - Alexa device + caregiver phone receiving SMS

**Audio:**

- Patient: "I think I fell. My leg hurts."
- Buddy: "I'm contacting your caregiver now. Stay with me. Can you move your leg?"
- **SMS alert shown:** "URGENT: John said 'I fell.' Initiating emergency protocol."
- Buddy: "Help is on the way. Your daughter Sarah has been notified."

### Annotation callouts:

- "Level 2 trigger detected"
- "Parallel alerts: caregiver + emergency assist"
- "Buddy stays engaged until help arrives"

### Caregiver Dashboard (2:20-2:45)

**Visual:** Screen recording of simple web form

**Audio:** "Caregivers control Buddy's knowledge base—add family members, update routines, review conversation logs. Privacy-first: structured facts only, no raw audio stored."

**Show:** Editing Sarah's profile, viewing conversation history with repeat counts

### Closing (2:45-3:00)

**Visual:** Anthony on camera

**Audio:** "Buddy doesn't replace human care—it supplements it. By handling repetitive memory support 24/7, Buddy gives caregivers breathing room and gives patients consistent, dignified assistance. Thank you."

**On-screen text:** "GitHub: [repo link] | Testing: [credentials]"

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## Testing Instructions (for Judges)

### Prerequisites

1. AWS account with access to us-east-1 region
2. Alexa-enabled device (Echo Dot or Alexa app on smartphone)
3. \$0.00 cost estimate (uses AWS Free Tier + hackathon promo credits)

### Deployment Steps

## Clone repository

```
git clone https://github.com/anthony/buddy-dementia-assistant
cd buddy-dementia-assistant
```

## Install dependencies

```
pip install -r requirements.txt
```

## Configure AWS credentials

```
aws configure
```

# Deploy infrastructure (CloudFormation)

```
./deploy.sh --region us-east-1
```

## Note the Alexa Skill ID from output

```
SKILL_ID=amzn1.ask.skill.xxxxxx
```

### Test Credentials

- **Patient Profile:** Test user "John Doe" (pre-seeded)
- **Alexa Skill Invocation:** "Alexa, open Buddy Assistant"
- **Caregiver Dashboard:** <https://buddy-demo.example.com>
  - Username: caregiver\_test
  - Password: Demo2026!

### Test Scenarios

Scenario	Voice Command	Expected Behavior
Routine query	"What do I do this morning?"	Buddy lists morning steps
Memory prompt	"Who is Sarah?"	Describes daughter relationship
Medication	"What do I take after breakfast?"	Names Donepezil with disclaimer
Repetition	Ask "Who is Sarah?" 4 times	Consistent answer, caregiver SMS on 4th
Level 1 concern	"I'm scared. Where am I?"	Calming response + caregiver alert
Level 2 emergency	"I fell down"	Immediate escalation + emergency assist

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## Privacy & Ethics

### Data Minimization

- Store structured facts only (names, dates, routines)
- Conversation logs: text transcripts, NOT audio recordings
- Automatic deletion: logs older than 90 days purged
- No biometric data collection

## HIPAA Considerations

- **Current scope:** Not HIPAA-compliant (demo prototype)
- **Production path:** AWS HIPAA-eligible services (DynamoDB, Lambda with BAA)[27]
- **PHI handling:** Medications stored as names only, no dosage changes recommended

## Informed Consent

- Caregiver must activate Buddy on behalf of patient
- Patient can disable at any time: "Alexa, stop talking to Buddy"
- Transparent escalation: "I'm calling your caregiver now—is that okay?"

## Dignity-Centered Design

- Never shame ("You already asked that")
- Never infantilize ("Good job, sweetheart!")
- Always empower ("You found it—wonderful!")
- Respect autonomy (ask permission before escalating)

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## Risk Mitigation

Risk	Impact	Mitigation
False emergency escalation	Caregiver alarm fatigue	Require 2 consecutive Level 2 triggers OR explicit "call for help" phrase
Missed true emergency	Patient harm	Fail-safe: escalate on ambiguity, keep patient engaged until human confirms safety
Wi-Fi outage	No assistance available	Alexa displays error message: "Call your caregiver at [number]"
Wrong medication info	Patient takes incorrect dose	Always include disclaimer, never suggest changes, log for review
Privacy breach	HIPAA violation	DynamoDB encryption at rest, IAM least-privilege, no PHI in logs
Voice recognition failure	Misunderstood commands	Nova Sonic's noise robustness, clarifying questions, "I didn't understand—can you say that again?"

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## Success Metrics

### Technical Performance

- **Latency:** < 2 seconds from speech end to Buddy response start
- **Uptime:** 99.5% availability (Lambda + DynamoDB SLAs)
- **Accuracy:** > 90% correct routine/person retrieval (manual evaluation)

### Impact Metrics (Post-Hackathon)

- **Patient satisfaction:** Measured via caregiver surveys (target: 4/5 stars)
- **Caregiver burden reduction:** Minutes per day saved on repetitive questions
- **Escalation precision:** False alarm rate < 10%

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## Post-Hackathon Roadmap

### Phase 1: Pilot Deployment (Q2 2026)

- Partner with 3-5 Alzheimer's support groups for beta testing
- Collect qualitative feedback from caregivers and patients
- Refine safety thresholds based on real-world data

### Phase 2: Clinical Validation (Q3 2026)

- Collaborate with Penn State NIH grant team (GRACE project)[37]
- Conduct IRB-approved study with 50 patient-caregiver dyads
- Measure outcomes: caregiver burden (Zarit scale), patient anxiety (RAID scale)

### Phase 3: Production Features (Q4 2026)

- Multi-language support (Spanish, Mandarin)
- Cognitive stimulation games (adapted from I-CONNECT protocol)[25]
- Wearable integration (fall detection from Vayyar Care)[26]
- Telemedicine handoff (Buddy initiates video call with clinician)

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## Budget & Resources

### AWS Costs (Hackathon Period)

- **Lambda:** ~\$5 (1M requests in Free Tier)
- **DynamoDB:** \$0 (25GB Free Tier)
- **Nova Sonic:** ~\$20 (estimated 10 hours testing @ \$0.003/sec)[18]
- **Nova Lite:** ~\$10 (tool orchestration, ~500 calls)
- **SNS:** \$0.50 (100 SMS alerts)
- **OpenSearch Serverless:** \$20/month (RAG vector store)
- **Total:** ~\$55.50 (under \$100 promo credit budget)[7]



## Development Time

- **Solo developer:** 120 hours over 6 weeks
  - **Breakdown:** 40% coding, 30% testing, 20% documentation, 10% video production
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## Conclusion

**Buddy** represents a paradigm shift in dementia care technology—moving from general-purpose voice assistants to a specialized, dignity-centered companion that understands the unique communication needs of cognitive impairment. By leveraging Amazon Nova 2 Sonic's human-like conversation capabilities and Nova 2 Lite's agentic reasoning, Buddy delivers what existing solutions cannot: natural interruption handling for fragmented speech, personalized memory grounding from caregiver-controlled knowledge bases, and intelligent safety escalation that reduces false alarms while ensuring no true emergency is missed.

For the Amazon Nova Hackathon, Buddy demonstrates technical excellence (60% judging weight) through its bidirectional streaming architecture, RAG pipeline, and multi-agent safety classification. It delivers profound impact (20%) by addressing a global crisis affecting 55 million people with a scalable, privacy-first solution. And it showcases innovation (20%) by being the first dementia assistant purpose-built for Nova Sonic's interruption tolerance—a critical feature for patients who trail off mid-sentence, repeat questions, or struggle with linear conversation flow.

This is not hypothetical—dementia care AI works. Research shows 30% patient satisfaction improvements with consistent emotional support[28], and clinical trials like I-CONNECT prove cognitively stimulating conversations reduce decline[25]. Buddy takes these proven principles and makes them accessible 24/7, giving caregivers the breathing room they desperately need while giving patients the dignity they deserve.

**Anthony's Note:** As someone "always trying to do things beyond my capabilities," building Buddy pushes me into unfamiliar territory—healthcare AI, agentic workflows, real-time voice streaming. But that's exactly why it matters. If I can build this in 6 weeks with Nova's tools, imagine what it enables for developers worldwide tackling their own "impossible" problems. Let's build the future of compassionate AI together.

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## Appendix: Key Decision Points

### Q1: Caregiver Alert Method

**Decision:** ✓ SMS via Amazon SNS (confirmed)

**Rationale:** SMS works on any phone, no app installation required, reliable delivery. Future expansion to push notifications post-hackathon.

### Q2: Target Household Location

**Decision:** ✓ US-only for hackathon (confirmed)

**Rationale:** Alexa Emergency Assist is US-only[32]. International caregiver-only alerts (without emergency assist integration) planned for Phase 2.

### Q3: Escalation Permission Model

**Decision:** ✓ Level 2 proceeds without permission, Level 1 always asks (confirmed)

**Rationale:** True emergencies (falls, chest pain, fire) can't wait for consent. Concerning behaviors (confusion loops, agitation) require context before alerting caregiver.

### Q4: Knowledge Base Management

**Decision:** ✓ Caregiver-controlled via web form (confirmed for MVP)

**Rationale:** Complex data entry unsuitable for voice, but simple updates ("Sarah now visits Wednesdays") can be voice-enabled later

**Summary: All Design Questions Answered** ✓

Question	Final Decision
Caregiver alert method	SMS via Amazon SNS
Target location	US-only (Alexa Emergency Assist)
Escalation permission	Level 2 no-ask, Level 1 ask-first
Knowledge base input	Web form (MVP)

**Next Steps:** You're ready to begin Week 1 implementation (AWS setup + Alexa skill). All architectural decisions are locked. Let's build Buddy! 🚀

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