Duplicate Search Cooldown Fix

Problem

When a user performed a search (e.g., "JohnDoe") and then searched for the same term again after the 30-second cooldown, the search was being **blocked by the cooldown mechanism** even though the backend was correctly returning cached results without charging credits.

User-Reported Behavior

1. Search "JohnDoe" in Smart Match mode → Results shown, 1 credit deducted ✅
2. Wait 30 seconds (cooldown expires) ✅
3. Search "JohnDoe" again → **Button becomes disabled immediately** ❌
4. Expected: Results should be shown from cache with no credit charge

Root Cause

The issue was in `/home/ubuntu/roblox-tool/src/app/page.tsx` :

Before Fix

```
// Smart Match Mode
if (!isCurrentlyBatchMode) {
  smartCooldown.startCooldown(); // ❌ Cooldown started BEFORE API call
}

response = await fetch(`/api/search?keyword=...&searchMode=smart`);
const searchData = await response.json();
```

The cooldown was being triggered **before** the API call, so:
1. Cooldown starts immediately (30 seconds)
2. Button becomes disabled
3. API returns cached results (no charge)
4. But the damage is done - cooldown already started

Button Disable Logic

```
<button
  disabled={
    loading ||
    (searchMode === 'smart' && smartCooldown.isOnCooldown) ||
    (searchMode === 'displayName' && displayNameCooldown.isOnCooldown)
  }
>
```

Solution

Move the cooldown trigger AFTER the API call and only activate it if the search is **NOT a duplicate**.

After Fix

```
// Smart Match Mode
response = await fetch(`/api/search?keyword=...&searchMode=smart`);
const searchData = await response.json();

// ✅ Only trigger cooldown if this was NOT a duplicate/cached search
if (!isCurrentlyBatchMode && !searchData.isDuplicate) {
  smartCooldown.startCooldown();
}

// ✅ Refresh balance to show no credit was deducted for duplicates
if (searchData.isDuplicate) {
  console.log('Duplicate search detected - no credit charged');
  refreshBalance();
}
```

Changes Made

1. Smart Match Mode (`page.tsx` lines 208-244)

- **Moved** `smartCooldown.startCooldown()` to execute AFTER the API response
- **Added** check: only trigger cooldown if `!searchData.isDuplicate`
- **Added** balance refresh for duplicate searches

2. Display Name Mode (`page.tsx` lines 268-310)

- **Moved** `displayNameCooldown.startCooldown()` to execute AFTER the API response
- **Added** check: only trigger cooldown if `!searchData.isDuplicate`
- **Added** balance refresh for duplicate searches

3. Backend Already Correct

The backend (`/home/ubuntu/roblox-tool/src/app/api/search/route.tsx`) was already:
- ✅ Detecting duplicate searches via `getSearchCache()`
- ✅ Returning cached results with `isDuplicate: true`
- ✅ Recording free search transactions (0 credits)
- ✅ Not charging credits for duplicates

Expected Behavior After Fix

Scenario 1: New Search

1. User searches "JohnDoe" (first time)
2. API charges 1 credit
3. **Cooldown starts (30 seconds)**
4. Button disabled during cooldown
5. Results stored in cache

Scenario 2: Duplicate Search (After Cooldown)

1. User searches "JohnDoe" again (after 30 seconds)
2. API returns cached results instantly
3. **No cooldown triggered** ✅
4. **No credit charged** ✅

5. **Button remains enabled** ✅
6. Balance refreshed to confirm no charge

Scenario 3: Duplicate Search (Within Cache Period)

1. User searches "JohnDoe" (day 1)
2. User searches "JohnDoe" again (day 2, within 30-day cache period)
3. API returns cached results
4. **No cooldown triggered** ✅
5. **No credit charged** ✅

Cache Settings

From `/home/ubuntu/roblox-tool/src/app/lib/utils/cache.ts` :

```
export const CACHE_TTL = {
  EXACT_SEARCH: 60 * 60 * 24 * 7,      // 7 days
  FUZZY_SEARCH: 60 * 60 * 24,          // 1 day
  DUPLICATE_SEARCH: 60 * 60 * 24 * 30, // 30 days (in search_cache table)
};
```

Duplicate search prevention lasts 30 days, much longer than the regular cache TTL.

Testing Checklist

- [ ] Search "TestUser" in Smart Match → 1 credit charged, cooldown starts
- [ ] Wait 30 seconds
- [ ] Search "TestUser" again → Results shown immediately, **no cooldown**, **no charge**
- [ ] Check transaction history → Only 1 transaction for "TestUser" (first search)
- [ ] Check console → "Duplicate search detected - no credit charged"
- [ ] Search different name "NewUser" → New cooldown, 1 credit charged
- [ ] Repeat test for Display Name mode

Benefits

✅ **Better UX**: Users can repeat searches without cooldown penalties
✅ **Correct billing**: No duplicate charges for the same search
✅ **Transparent**: Console logs show when searches are cached
✅ **Balance accuracy**: Auto-refresh confirms no charge
✅ **Consistent**: Smart Match and Display Name modes behave identically

Files Modified

1. `/home/ubuntu/roblox-tool/src/app/page.tsx` (lines 208-310)

Build Status

✅ Build successful

```
Route (app)                              Size  First Load JS
┌ ○ /                                  30.8 kB        142 kB
✓ Compiled successfully
```

Fixed on: October 30, 2025

Issue: Duplicate search cooldown blocking user searches

Resolution: Conditional cooldown trigger based on API response