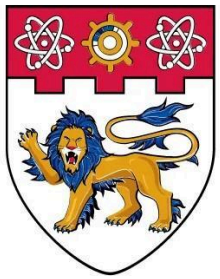


NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

SC2006 – Software Engineering

Lab 3 Deliverables

Lab Group	SCSI-30
Team	TEAM 5
Members	Tan Wei Song Russell Bryan (U2421844K)
	Justin Woon Thean Woon (U244641B)
	Ethan Jared Chong Rui Zhi (U2421895B)
	Evelyn Theresia Cuaca (U2320523L)
	Parvez Kurniawan Wijaya (U2423845G)

Testing

1. Black Box Testing
2. White Box Testing

Equivalence Class Testing

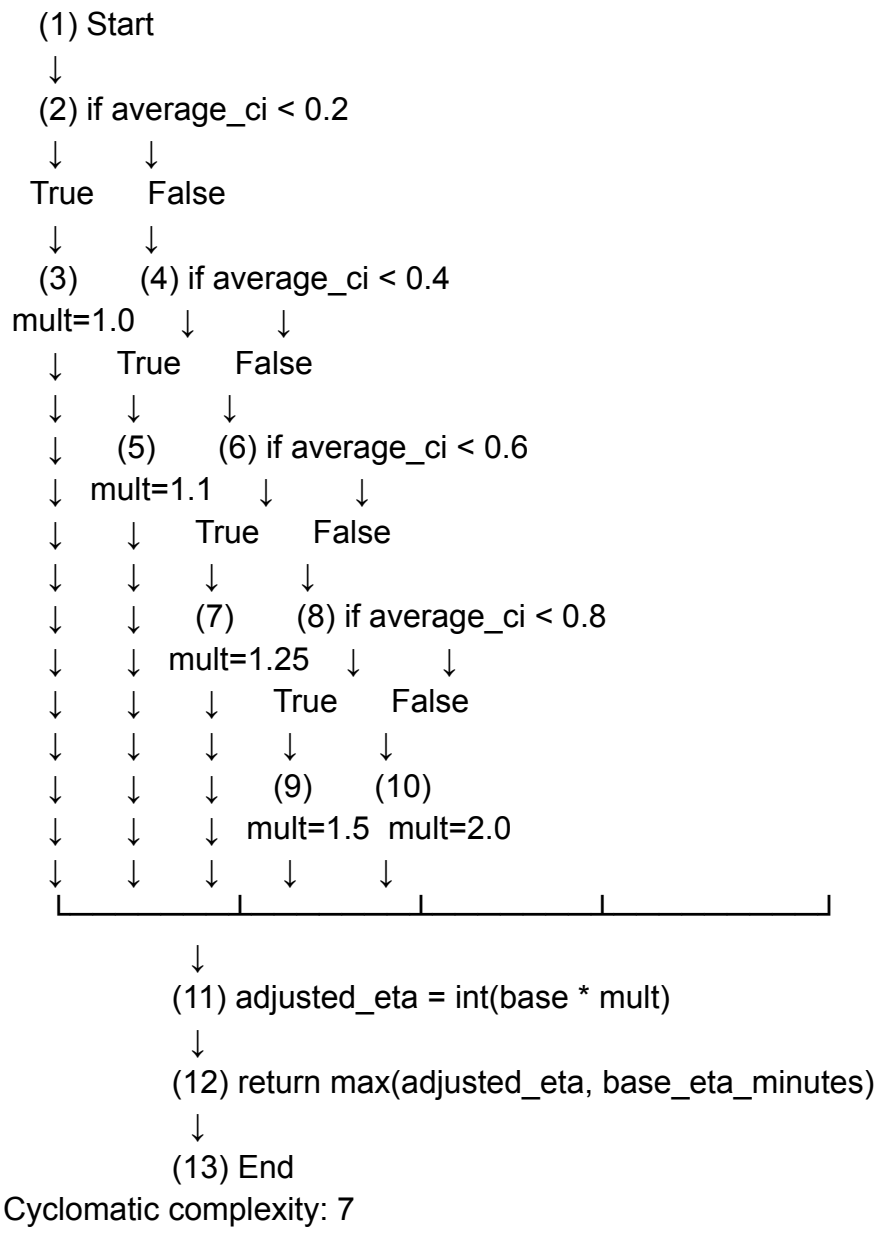
1. Login Validation

Email or Username in the database
Password hashed in database

Test ID	Input		Expected Output	Actual Output	Result	Description
	Email or username	Password				
1.1	Valid Username	Valid Password	200: Display HomePage	200: Display HomePage	Pass	Valid Username Input
1.2	Valid Email	Valid Password	200: Display HomePage	200: Display HomePage	Pass	Valid Email Input
1.3	Invalid Username	Valid Password	401: Unauthorized	401: Unauthorized	Pass	Username not in Database
1.4	Invalid Email	Valid Password	401: Unauthorized	401: Unauthorized	Pass	Email not in Database
1.5	Valid Username	Invalid Password	401: Unauthorized	401: Unauthorized	Pass	Password mismatch username
1.6	Valid Email	Invalid Password	401: Unauthorized	401: Unauthorized	Pass	Password mismatch email

White Box Testing

1. backend/app/services/trafficcams/domain/departure_time_optimizer.py



Cyclomatic complexity: 7

Test Case	CI Value	Base ETA	Expected Multiplier	Expected Result	Path
TC1	0.1	30	1.0	30	1→2(T)→3→11→12→13
TC2	0.3	30	1.1	33	1→2(F)→4(T)→5→11→12→13

TC3	0.5	30	1.25	37	1→2(F)→4(F)→6(T)→7→11→12→13
TC4	0.7	30	1.5	45	1→2(F)→4(F)→6(F)→8(T)→9→11→12→13
TC5	0.9	30	2.0	60	1→2(F)→4(F)→6(F)→8(F)→10→11→12→13
TC6	0.5	40	1.25	50	Tests int() conversion
TC7	1.5	20	2.0	40	Tests max() - adjusted > base

2. backend/app/services/trafficcams/domain/departure_time_optimizer.py
   CFG:
   (1) Start
   ↓
   (2) for camera_info in cameras_near_route
   ↓
   (3) Get ci_state from repository
   ↓
   (4) if ci_state exists
   ↓ ↓
   True False
   ↓ ↓
   (5) (11) ci = 0.3
   if dict? ↓
   ↓ ↓ (12) Append to list
   True False ↓
   ↓ ↓ Loop
   (6) (10)
   Check Use
   keys ci_state.ci
   ↓
   (7) if 'CI' exists
   ↓ ↓

True False
↓ ↓
(8) (9) Check 'ci'
ci=CI ↓
(10) Default 0.3

Cyclomatic complexity: 6

TC	Camera Data Type	Has 'CI'	Has 'ci'	Expected CI
TC1	None	-	-	0.3 (default)
TC2	dict	Yes, valid	-	Value from 'CI'
TC3	dict	Yes, None	-	0.3 (default)
TC4	dict	No	Yes, valid	Value from 'ci'
TC5	dict	No	Yes, None	0.3 (default)
TC6	dict	No	No	0.3 (default)
TC7	CIState object	-	-	ci_state.ci
TC8	Empty cameras list	-	-	avg_ci = 0.0

Demo Script:

Login & Sign In
Home Page

- Live Traffic Alerts
- User Alert (How its reported and the invalid locations)

Search Nearby (Search Mcdonalds or Supermarkets)
Search Destination (Orchard)
DirectionPage

- Drive (data.gov api for traffic camera to calculate best time to travel), Walk (Briefly go thru user suggested route, if uw show, show north hill to wee cho yaw plaza), Cycle, PT -> Navigate
- Closest Carpark -> directions to carpark -> back to location page

ComparePage

- Overview
- Drive and PT Card

SavedPage

- Create List and Saved into that list
- Navigate to the place and delete
- Add work or home - show from home page the navigation button
- Edit work/home and delete

SuggestPage

- Show recommendation of other users
- Like functionality
- Directions
- User add their own recommendation

ProfilePage

- Show MyAccount
- Help Us - See road reports/ can do technical reporting which will submit to the backend
- UserSuggestedRoute
    - Likes
    - View Details
    - Use as Destination (If it works)
    - Create Route
        - Show draw route and track route features
        - Upload and view route