Bandit is a source code security analysis tool that scans for known vulnerabilities in code written in python (Static Application Security Testing)

1. Tested as a notebook .ipynb file

Result:

```
PS C:\Users\Yu Hui\Documents\GitHub\ict3104-p2-team08> python -m bandit 3104_T08.ipynb
[main]  INFO    profile include tests: None
[main]  INFO    profile exclude tests: None
[main]  INFO    cli include tests: None
[main]  INFO    cli exclude tests: None
[main]  INFO    running on Python 3.9.13
[node_visitor]  WARNING Unable to find qualified name for module: 3104_T08.ipynb
Run started:2022-11-15 05:59:32.870777

Test results:
        No issues identified.

Code scanned:
        Total lines of code: 962
        Total lines skipped (#nosec): 0

Run metrics:
        Total issues (by severity):
                Undefined: 0
                Low: 0
                Medium: 0
                High: 0
        Total issues (by confidence):
                Undefined: 0
                Low: 0
                Medium: 0
                High: 0
```

2. Download the source code only (as python file)

Result:

```
PS C:\Users\Yu Hui\Downloads> python -m bandit 3104_T08.py
[main]  INFO    profile include tests: None
[main]  INFO    profile exclude tests: None
[main]  INFO    cli include tests: None
[main]  INFO    cli exclude tests: None
[main]  INFO    running on Python 3.9.13
[node_visitor]  WARNING Unable to find qualified name for module: 3104_T08.py
Run started:2022-11-15 06:03:40.242637

Test results:
        No issues identified.

Code scanned:
        Total lines of code: 339
        Total lines skipped (#nosec): 0

Run metrics:
        Total issues (by severity):
                Undefined: 0
                Low: 0
                Medium: 0
                High: 0
        Total issues (by confidence):
                Undefined: 0
                Low: 0
                Medium: 0
                High: 0
Files skipped (0):
```
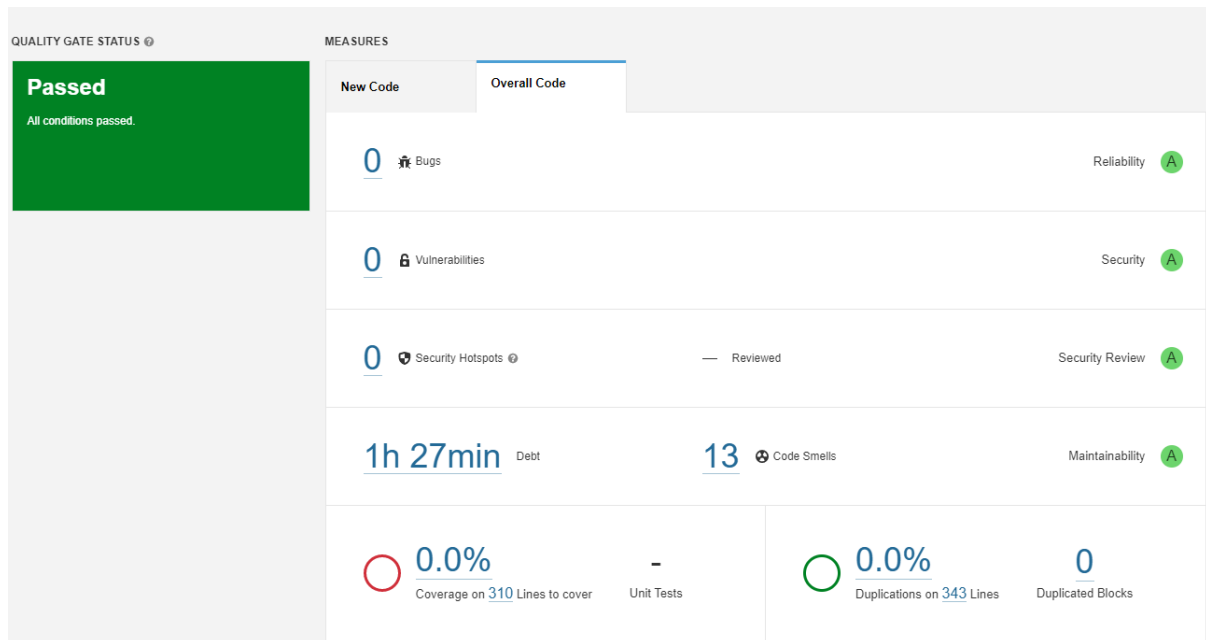
The team also uses SonarQube to further check on the vulnerability of our codes. The results are shown below

Result:

QUALITY GATE STATUS ⓘ	MEASURES			
Passed	New Code	**Overall Code**		
All conditions passed.				

0 🐞 Bugs		Reliability Ⓐ
0 🔒 Vulnerabilities		Security Ⓐ
0 🛡 Security Hotspots ⓘ	— Reviewed	Security Review Ⓐ
1h 27min Debt	**13** ⚙ Code Smells	Maintainability Ⓐ

⭕ **0.0%**	**-**	⭕ **0.0%**	**0**	
Coverage on 310 Lines to cover	Unit Tests	Duplications on 343 Lines	Duplicated Blocks	

Conclusion:

- There is 0 security vulnerability detected on our application.
- Secured and safe as it passes all the vulnerabilities tests by Bandit and SonarQube