a.

| TASKS | Weeks | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Defining and Understanding the problem | ▨ | | | | | | | | | | | |
| Planning and design | | | ▨ | ▨ | ▨ | ▨ | | | | | | |
| Implementation | | | | | | | | ▨ | ▨ | | | |
| Testing and Evaluating | | | | | | | | | | ▨ | | |
| Maintanence | | | | | | | | | | | ▨ | ▨ |

▨ = 1 week

b. The use of these tools are important in the modification of an existing solution

The original data dictionary will allow the team to understand the program better. It will have the data types of

the        variables    and         a        brief    description    of     their
purpose.    This        will        help     the      team         when
modifying    the         original    solution    as       it           will
help     them        understand    each   again    the      logic
of     the      original    solution.

The        test        data        is       also     a        useful    asset
to     the      team.       They     ~~run run~~    can      run      desk
checks    on          their       algorithms    and      final    solution
to     check       that        the      original    purpose    of     the
program    remains    intact.

c (1)

| Amount | GST | total | gst-total |
|--------|-----|-------|-----------|
| 22 | 2 | 22 | 2 |
| 33 | 3 | 55 | 5 |
| 11 | 1 | 66 | 6 |
| ZZZ | 0 | ~~66~~ 66 | ~~6~~ 6 |

*ZZZ   sentinal    value,    does    not    execute,    outputs    values

```
(iii)     BEGIN
              OPEN   Transaction
              total = 0
              READ  first  record
              WWW counter = 0
              WHILE  record   NOT  sentinal
                      total = total + Transaction amount
                          increment  counter
                          READ next  record
                  END  WHILE
                  total = total/counter
                  OUTPUT   total
              END
```

d (i) This CASE tool allows the developer to save the changes to the program as a different file. This way, when an error is located, the developer can go back to older versions and trace the cause of the problem and fix it in the later version, or start again from the older version

* (ii) BEGIN linear search

    OPEN version

    current = 1   (result)

    READ first record

    WHILE record NOT sentinel

        IF versionarray [current] > 11000 THEN   [current -1]

           WRITE Results [current A] , versionarray [current]   (this is)

      END IF

    *→ current = current + 2

      READ next record

    END WHILE

  END linear search