UNIVERSITI TEKNOLOGI MALAYSIA

LAB EXERCISE 1

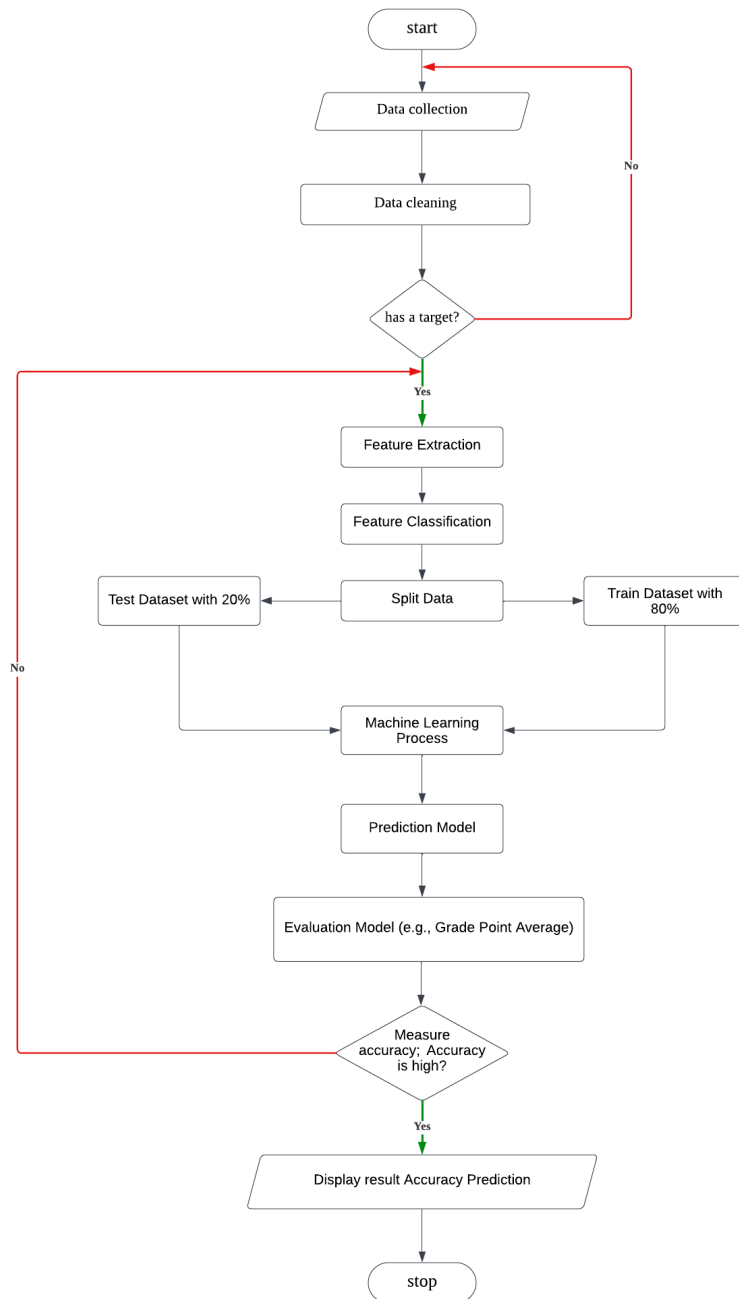### SECJ1013

PROGRAMMING TECHNIQUE 1

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```
                    ┌──────────┐
                    │  start   │
                    └──────────┘
                         │
                         ▼
              ╱──────────────────╲
             │  Data collection   │
              ╲──────────────────╱
                         │
                         ▼
              ┌────────────────────┐
              │   Data cleaning    │
              └────────────────────┘
                         │
                         ▼
                  ◇ has a target? ◇ ──── No
                         │ Yes
                         ▼
              ┌────────────────────┐
              │ Feature Extraction │
              └────────────────────┘
                         │
                         ▼
              ┌──────────────────────┐
              │ Feature Classification│
              └──────────────────────┘
                         │
                         ▼
  ┌──────────────────┐  ┌──────────┐  ┌──────────────────┐
  │ Test Dataset with│◄─│ Split Data│─►│ Train Dataset with│
  │       20%        │  └──────────┘  │        80%        │
  └──────────────────┘                └──────────────────┘
                         │
                         ▼
              ┌────────────────────┐
              │  Machine Learning  │
              │      Process       │
              └────────────────────┘
                         │
                         ▼
              ┌────────────────────┐
              │  Prediction Model  │
              └────────────────────┘
                         │
                         ▼
    ┌──────────────────────────────────────────┐
    │ Evaluation Model (e.g., Grade Point Average)│
    └──────────────────────────────────────────┘
                         │
                         ▼
            ◇ Measure accuracy; Accuracy is high? ◇ ──── No
                         │ Yes
                         ▼
    ╱──────────────────────────────────────────╲
   │    Display result Accuracy Prediction       │
    ╲──────────────────────────────────────────╱
                         │
                         ▼
                    ┌──────────┐
                    │   stop   │
                    └──────────┘
```

SET 2

1. Start

2. deposit = 0.10

3. Get the name, duration, package, customer_Type

4. if package = = 1

4.1 rental = 150

5. else

5.1 rental = 250

6. End If

7. if customer Type = = Regular

7.1 discount = 0.10

8. else

8.1 discount = 0

9. End If

10. price = rental * duration

11. deposit_Payment = deposit * price

12. total_Discount = discount * price

13. balance = price – total_Discount + deposit_Payment

14. Display name, deposit_Payment, total_Discount, balance

15. End

<u>SET 3</u>

1.start

2. set count = 0

3. while count <=4

   3.1 get digit number

   3.2 count = count +1

4. end while

5. product = digit number * digit number * digit number * digit number * digit number

6. if product % 4 == 0

   6.1 display "product is a multiple of 4"

   6.2 else if product % 5 == 0

      6.2.1 display "and 5"

   6.3 else if product % 7 == 0

      6.3.1 display "and 7"

7. end if

8. if product % 5 == 0

   8.1 display "product is a multiple of 5"

   8.2 else if product % 4 == 0

      8.2.1 display "and 4"

   8.3 else if product % 7 == 0

      8.3.1 display "and 7"

9. end if

10. if product % 7 == 0

   10.1 display "product is a multiple of 7"

   10.2 else if product % 5 == 0

      10.2.1 display "and 5"

   10.3 else if product % 4 == 0

      10.3.1 display "and 4"

11. end if

12. stop

```mermaid
flowchart TD
    Start([Start]) --> A[set count = 0]
    A --> B[/get digit number/]
    B --> C[count = count + 1]
    C --> D{count <= 4?}
    D -->|Yes| B
    D -->|No| E[product = digit number * digit number * digit number * digit number * digit number]
    E --> F{product % 2 = 0?}
    F -->|No| G[/display "product is an odd number"/]
    F -->|Yes| H[/display "product is an even number"/]
    G --> I{product % 3 = 0?}
    H --> I
    I -->|No| J{product % 5= 0?}
    I -->|Yes| K[/display "product is muliple of 3"/]
    J -->|Yes| L[/display "product is muliple of 5"/]
    J -->|No| Stop
    K --> M{product % 5= 0?}
    M -->|Yes| N[/display "and multiple of 5"/]
    M -->|No| Stop
    L --> Stop
    N --> Stop([Stop])
```