

PERTEMUAN 3
PERCABANGAN DAN PERULANGAN
PEMROGRAMAN MOBILE



GALUNG ERLYAN TAMA (12)


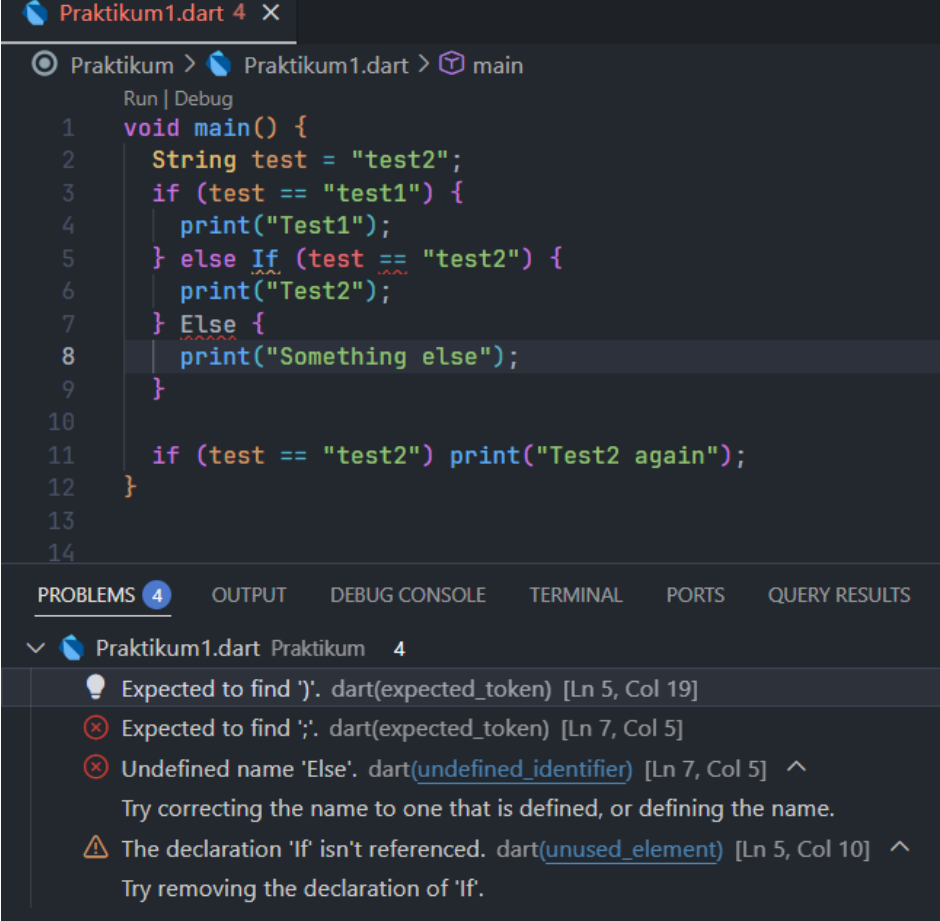
2341720054

TI-3E

JURUSAN TEKNOLOGI INFORMASI
D-IV TEKNIK INFORMATIKA
POLITEKNIK NEGERI MALANG

2025

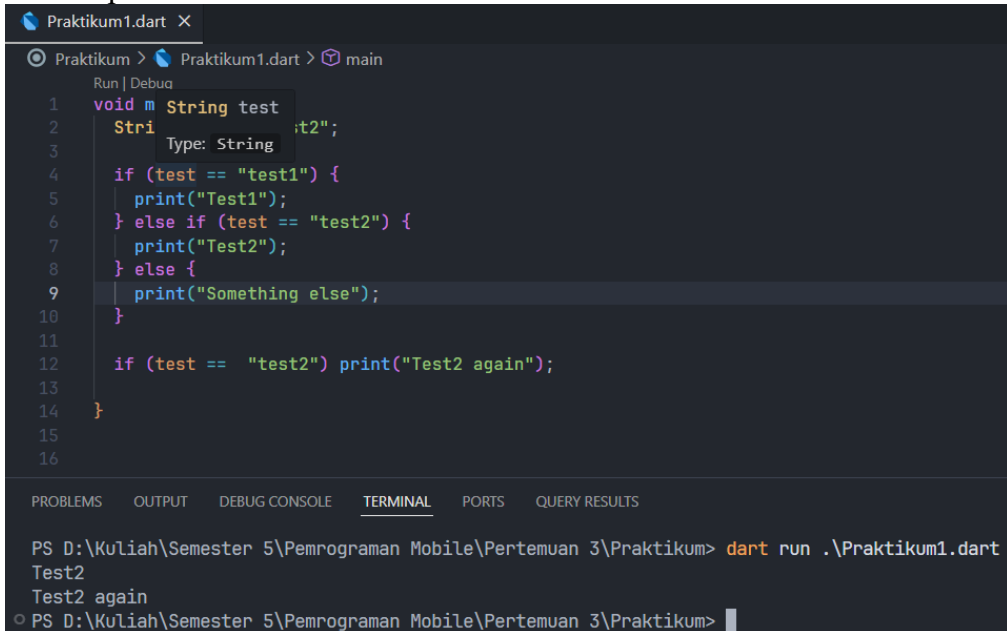
1. Praktikum 1: Menerapkan Control Flows ("if/else")

No	Penjelasan
1	Ketik atau salin kode program berikut ke dalam fungsi main()
	 <pre> 1 void main() { 2 String test = "test2"; 3 if (test == "test1") { 4 print("Test1"); 5 } else if (test == "test2") { 6 print("Test2"); 7 } else { 8 print("Something else"); 9 } 10 11 if (test == "test2") print("Test2 again"); 12 } </pre>
2	Silakan coba eksekusi (Run) kode pada langkah 1 tersebut. Apa yang terjadi? Jelaskan!
	<p>Sebelum run ada peringatan error</p>  <pre> 1 void main() { 2 String test = "test2"; 3 if (test == "test1") { 4 print("Test1"); 5 } else if (test == "test2") { 6 print("Test2"); 7 } Else { 8 print("Something else"); 9 } 10 11 if (test == "test2") print("Test2 again"); 12 } </pre> <p>PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS</p> <p>Praktikum1.dart Praktikum 4</p> <ul style="list-style-type: none"> Expected to find ')'. dart(expected_token) [Ln 5, Col 19] Expected to find ';'. dart(expected_token) [Ln 7, Col 5] Undefined name 'Else'. dart(undefined_identifier) [Ln 7, Col 5] ^ Try correcting the name to one that is defined, or defining the name. The declaration 'If' isn't referenced. dart(unused_element) [Ln 5, Col 10] ^ Try removing the declaration of 'If'. <p>Sesudah run :</p>

```
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum1.dart
Praktikum1.dart:5:19: Error: Expected ')' before this.
} else If (test == "test2") {
      ^
Praktikum1.dart:7:5: Error: Expected ';' after this.
} Else {
  ^^^^^
Praktikum1.dart:7:5: Error: Undefined name 'Else'.
} Else {
  ^^^^^
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum>
```

Error tersebut terjadi pertama karena else If yang seharusnya kecil ditulis besar dan else yang ditulis besar

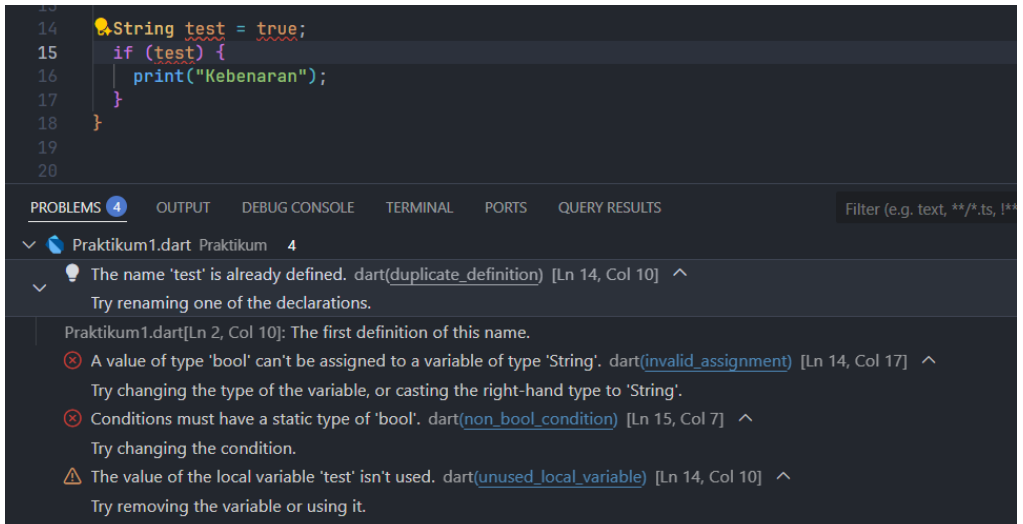
Setelah perbaikan :



```
Praktikum1.dart X
Praktikum > Praktikum1.dart > main
Run | Debug
1 void m String test
2   String test = "test2";
3   Type: String
4   if (test == "test1") {
5     print("Test1");
6   } else if (test == "test2") {
7     print("Test2");
8   } else {
9     print("Something else");
10  }
11
12  if (test == "test2") print("Test2 again");
13
14 }
15
16
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum1.dart
Test2
Test2 again
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum>
```

3. Tambahkan kode program berikut, lalu coba eksekusi (Run) kode Anda.

Sebelum run :



```
14 String test = true;
15 if (test) {
16   print("Kebenaran");
17 }
18 }
19
20
PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS Filter (e.g. text, **/*.ts, !**)
Praktikum1.dart Praktikum 4
The name 'test' is already defined. dart(duplicate_definition) [Ln 14, Col 10] ^
Try renaming one of the declarations.
Praktikum1.dart[Ln 2, Col 10]: The first definition of this name.
A value of type 'bool' can't be assigned to a variable of type 'String'. dart(invalid_assignment) [Ln 14, Col 17] ^
Try changing the type of the variable, or casting the right-hand type to 'String'.
Conditions must have a static type of 'bool'. dart(non_bool_condition) [Ln 15, Col 7] ^
Try changing the condition.
The value of the local variable 'test' isn't used. dart(unused_local_variable) [Ln 14, Col 10] ^
Try removing the variable or using it.
```

Sesudah run Sebelum diperbaiki :

```

PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum1.dart
Praktikum1.dart:14:10: Error: 'test' is already declared in this scope.
String test = true;
      ^
Praktikum1.dart:2:10: Context: Previous declaration of 'test'.
String test = "test2";
      ^
Praktikum1.dart:15:7: Error: A value of type 'String' can't be assigned to a variable of type 'bool'.
if (test) {
    ^
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum>

```

Sesudah diperbaiki :

```

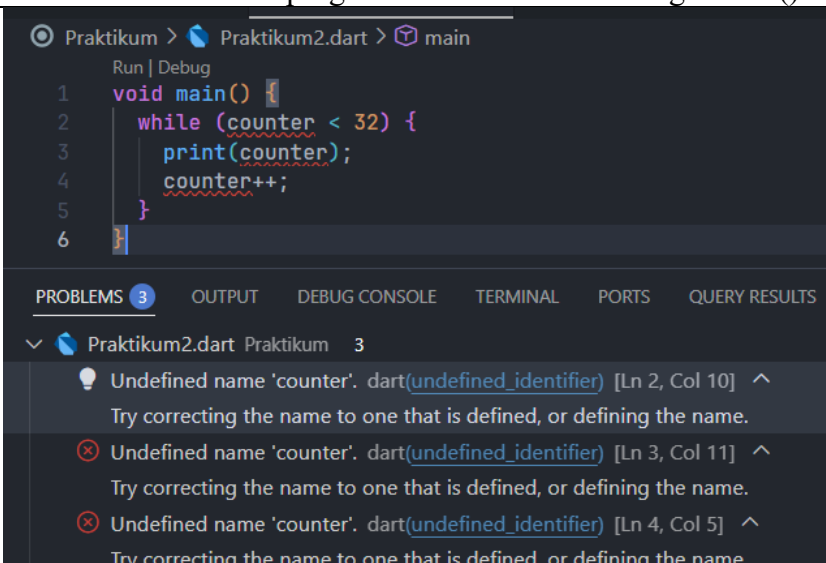
Praktikum > Praktikum1.dart > main
Run | Debug
1 void main() {
2   String test = "test2";
3
4   if (test == "test1") {
5     print("Test1");
6   } else if (test == "test2") {
7     print("Test2");
8   } else {
9     print("Something else");
10  }
11
12  if (test == "test2") print("Test2 again");
13
14  bool test2 = true;
15  if (test2) {
16    print("Kebenaran");
17  }
18 }
19
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS

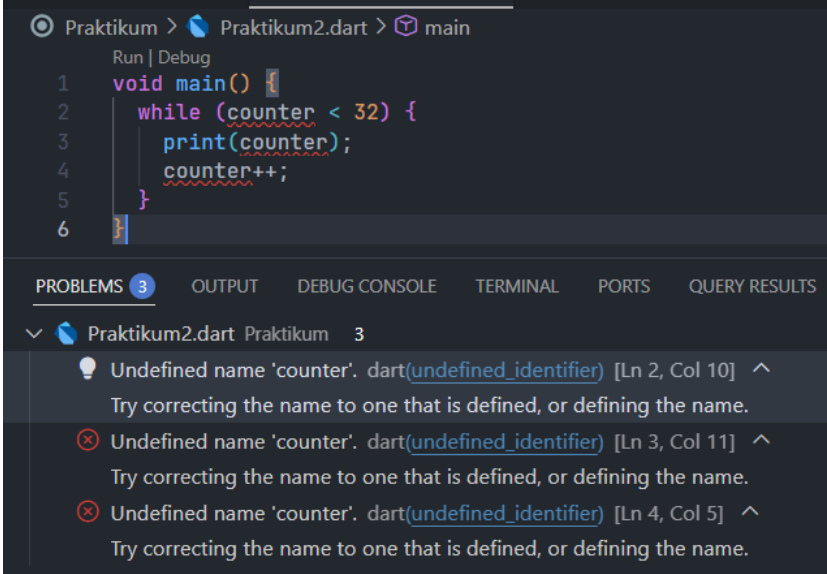
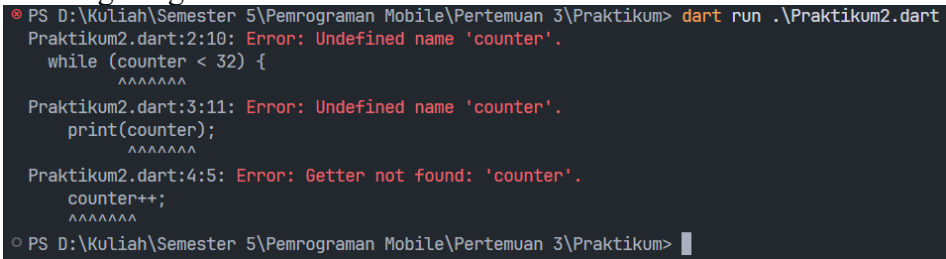
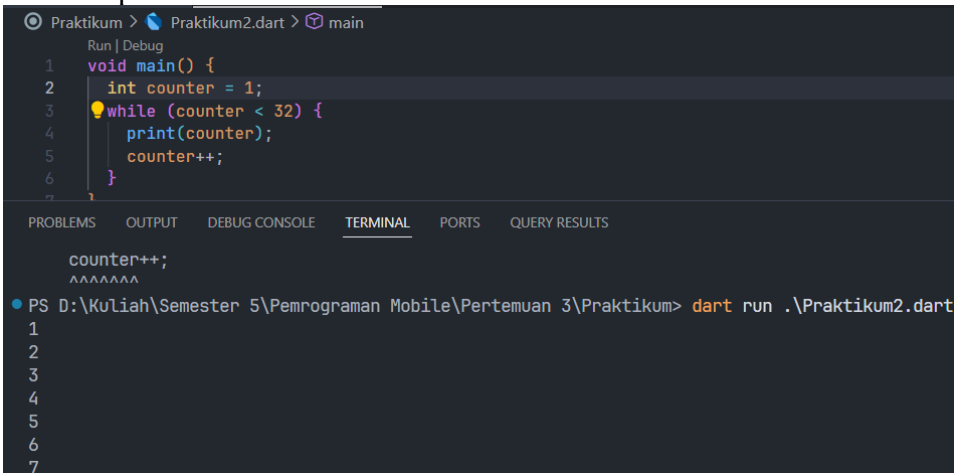
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum1.dart
Test2
Test2 again
Kebenaran
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum>

```

Error tersebut karena variable test yang sudah ada dideklarasikan ulang yang mana ini tidak bisa dilakukan karena berada pada scope main atau scope yang sama, kemudian terdapat error deklarasi string namun nilai assign nya adalah Boolean, setelah diperbaiki dengan mengganti menjadi nama variable yang berbeda dan mengganti string dengan bool.

2. Praktikum 2: Menerapkan Perulangan "while" dan "do-while"

No	Penjelasan
1	Ketik atau salin kode program berikut ke dalam fungsi main()
	 <pre> Praktikum > Praktikum2.dart > main Run Debug 1 void main() { 2 while (counter < 32) { 3 print(counter); 4 counter++; 5 } 6 } 7 PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS Praktikum2.dart Praktikum 3 Undefined name 'counter'. dart(undefined_identifier) [Ln 2, Col 10] ^ Try correcting the name to one that is defined, or defining the name. Undefined name 'counter'. dart(undefined_identifier) [Ln 3, Col 11] ^ Try correcting the name to one that is defined, or defining the name. Undefined name 'counter'. dart(undefined_identifier) [Ln 4, Col 5] ^ Try correcting the name to one that is defined, or defining the name. </pre>

2	Silakan coba eksekusi (Run) kode pada langkah 1 tersebut. Apa yang terjadi? Jelaskan!
	<div>  <pre> Praktikum > Praktikum2.dart > main Run Debug 1 void main() { 2 while (counter < 32) { 3 print(counter); 4 counter++; 5 } 6 } PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS Praktikum2.dart Praktikum 3 Undefined name 'counter'. dart(undefined_identifier) [Ln 2, Col 10] ^ Try correcting the name to one that is defined, or defining the name. Undefined name 'counter'. dart(undefined_identifier) [Ln 3, Col 11] ^ Try correcting the name to one that is defined, or defining the name. Undefined name 'counter'. dart(undefined_identifier) [Ln 4, Col 5] ^ Try correcting the name to one that is defined, or defining the name. </pre> </div> <p>Running dengan error :</p> <div>  <pre> PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum2.dart Praktikum2.dart:2:10: Error: Undefined name 'counter'. while (counter < 32) { ^^^^^^^ Praktikum2.dart:3:11: Error: Undefined name 'counter'. print(counter); ^^^^^^^ Praktikum2.dart:4:5: Error: Getter not found: 'counter'. counter++; ^^^^^^^ PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> </pre> </div> <p>Sesudah perbaikan :</p> <div>  <pre> Praktikum > Praktikum2.dart > main Run Debug 1 void main() { 2 int counter = 1; 3 while (counter < 32) { 4 print(counter); 5 counter++; 6 } 7 } PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS counter++; ^^^^^^^^ PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum2.dart 1 2 3 4 5 6 7 </pre> </div> <p>Error disebabkan karena penggunaan sebuah variable yang belum di deklarasikan dapat di perbaiki dengan mendeklarasikan counter</p>
3	Tambahkan kode program berikut, lalu coba eksekusi (Run) kode Anda.

Praktikum > Praktikum2.dart > main

Run | Debug

```
1 void main() {  
2   int counter = 1;  
3  
4   while (counter < 32) {  
5     print(counter);  
6     counter++;  
7   }  
8  
9   do {  
10    print(counter);  
11    counter++;  
12  } while (counter < 77);  
13 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

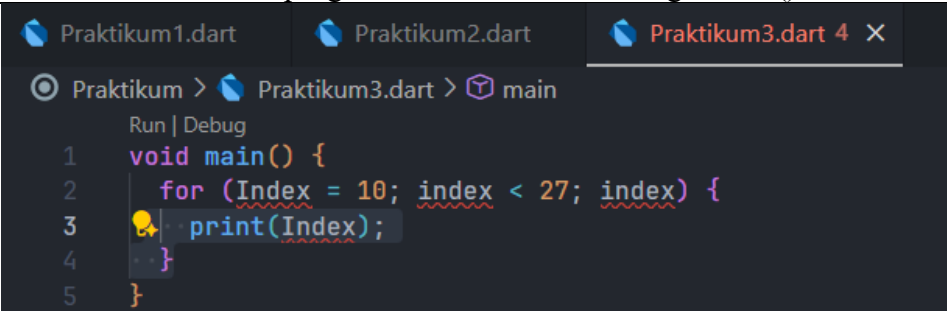
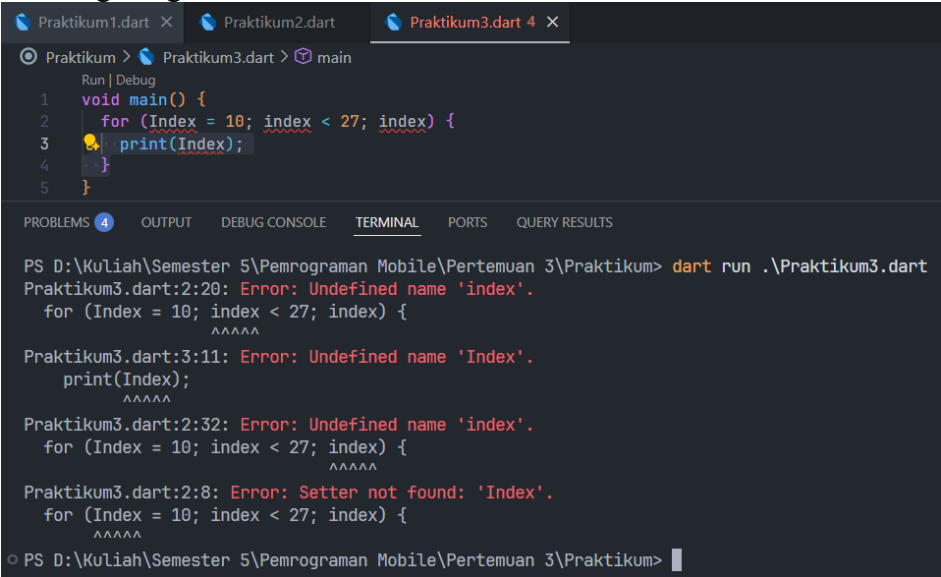
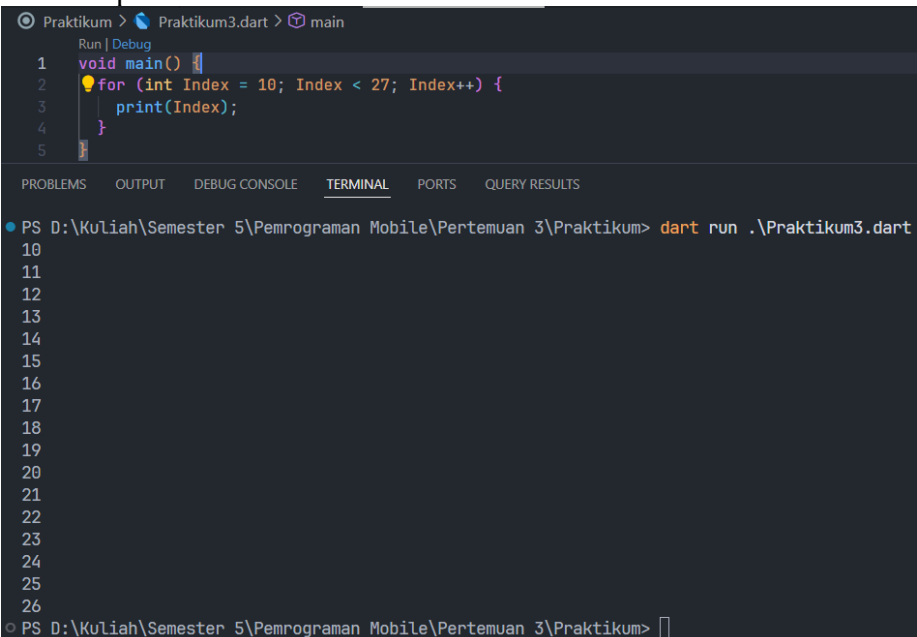
PORTS

QUERY RESULTS

34
35
36
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51
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54

Ini akan melanjutkan looping dari 31 sampai 76 karena looping pertama berhenti di 31 dan looping kedua akan berhenti di 76

3. Praktikum 3: Menerapkan Perulangan "for" dan "break-continue"

No	Penjelasan
1	<p>Ketik atau salin kode program berikut ke dalam fungsi main()</p>  <pre> Praktikum1.dart Praktikum2.dart Praktikum3.dart 4 X Praktikum > Praktikum3.dart > main Run Debug 1 void main() { 2 for (Index = 10; index < 27; index) { 3 print(Index); 4 } 5 } </pre>
2	<p>Silakan coba eksekusi (Run) kode pada langkah 1 tersebut. Apa yang terjadi? Jelaskan!</p> <p>Running dengan error :</p>  <pre> Praktikum1.dart X Praktikum2.dart Praktikum3.dart 4 X Praktikum > Praktikum3.dart > main Run Debug 1 void main() { 2 for (Index = 10; index < 27; index) { 3 print(Index); 4 } 5 } PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum3.dart Praktikum3.dart:2:20: Error: Undefined name 'index'. for (Index = 10; index < 27; index) { ^^^^^ Praktikum3.dart:3:11: Error: Undefined name 'Index'. print(Index); ^^^^^ Praktikum3.dart:2:32: Error: Undefined name 'index'. for (Index = 10; index < 27; index) { ^^^^^ Praktikum3.dart:2:8: Error: Setter not found: 'Index'. for (Index = 10; index < 27; index) { ^^^^^ PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> </pre> <p>Sesudah perbaikan :</p>  <pre> Praktikum > Praktikum3.dart > main Run Debug 1 void main() { 2 for (int Index = 10; Index < 27; Index++) { 3 print(Index); 4 } 5 } PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum3.dart 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> </pre>

	Error terjadi pertama karena perbedaan variable index pada deklarasi dan pemanggilannya kemudian nilai index tidak di update yang menyebabkan infinite loop yang terus melooping nilai 10
--	---

3 Tambahkan kode program berikut, lalu coba eksekusi (Run) kode Anda.

```

Praktikum > Praktikum3.dart > main
Run | Debug
1 void main() {
2   for (int Index = 10; Index < 27; Index++) {
3     If (Index == 21) break;
4     Else If (index > 1 || index < 7) continue;
5     print(index);
6   }
7 }

PROBLEMS 10 OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS

Praktikum3.dart:3:5: Error: Method not found: 'If'.
  If (Index == 21) break;
  ^^

Praktikum3.dart:3:20: Error: Expected ';' after this.
  If (Index == 21) break;
                   ^

Praktikum3.dart:4:5: Error: 'Else' isn't a type.
  Else If (index > 1 || index < 7) continue;
  ^^^^^

Praktikum3.dart:3:5: Error: Local variable 'If' can't be referenced before it is declared.
  If (Index == 21) break;
  ^^

Praktikum3.dart:4:10: Context: This is the declaration of the variable 'If'.
  Else If (index > 1 || index < 7) continue;
  ^^

Praktikum3.dart:4:10: Error: Expected ';' after this.
  Else If (index > 1 || index < 7) continue;
  ^^

Praktikum3.dart:4:14: Error: Undefined name 'index'.
  Else If (index > 1 || index < 7) continue;
  ^^^^^^

Praktikum3.dart:4:27: Error: Undefined name 'index'.
  Else If (index > 1 || index < 7) continue;
  ^^^^^^

Praktikum3.dart:4:36: Error: Expected ';' after this.
  Else If (index > 1 || index < 7) continue;
  ^

Praktikum3.dart:5:11: Error: Undefined name 'index'.
  print(index);
  ^^^^^^

PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum>

```

Error disebabkan oleh deklarasi argument yang ada pada if statement dan else if yang ditulis kecil sementara deklarasi nya besar. kemudian else if yang ditulis besar yang seharusnya ditulis kecil. Runtime error akan terjadi dan loop tidak akan jalan karena or operator dalam else if.

```

Praktikum > Praktikum3.dart > main
Run | Debug
1 void main() {
2   for (int Index = 10; Index < 27; Index++) {
3     if (Index == 21) break;
4     else if (Index > 1 && Index < 7) continue;
5     print(Index);
6   }
7 }

```



```

PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum3.dart
10
11
12
13
14
15
16
17
18
19
20
PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum>

```

Jika looping dimulai dari 1 maka 2 – 6 akan di continue (skip), looping berhenti di 20 karena pada saat 21 di break (berhentikan) jika tetap dilanjut akan seperti ini

```

Praktikum > Praktikum3.dart > main
Run | Debug
1 void main() {
2   for (int Index = 1; Index < 27; Index++) {
3     if (Index == 21) break;
4     else if (Index > 1 && Index < 7) continue;
5     print(Index);
6   }
7 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS

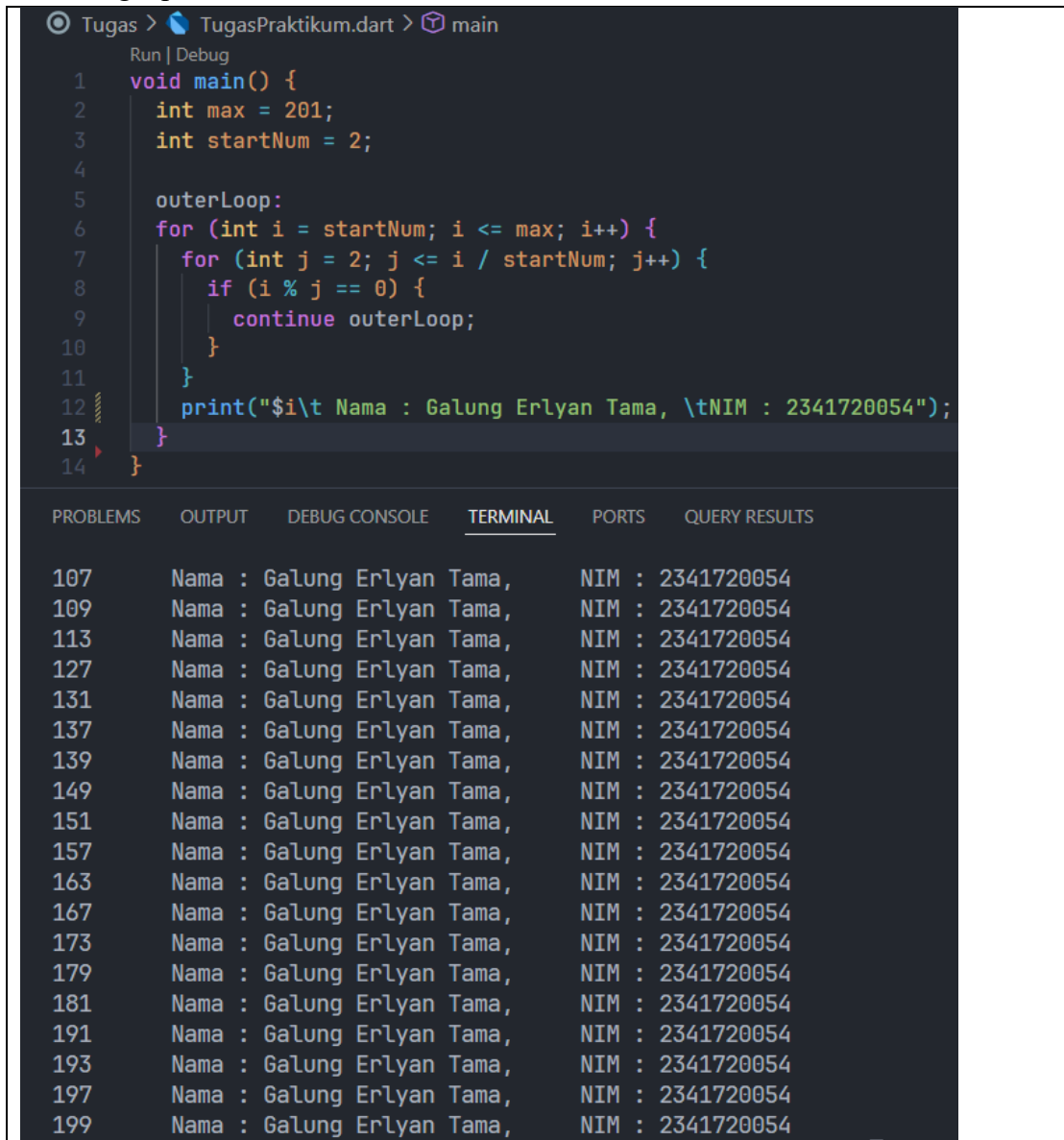
```

PS D:\Kuliah\Semester 5\Pemrograman Mobile\Pertemuan 3\Praktikum> dart run .\Praktikum3.dart
1
7
8
9
10
11
12
13
14
15
16
17
18
19
20

```

4. Tugas Praktikum :

Buatlah sebuah program yang dapat menampilkan bilangan prima dari angka 0 sampai 201 menggunakan Dart. Ketika bilangan prima ditemukan, maka tampilkan nama lengkap dan NIM Anda.



The screenshot shows an IDE window with a Dart file named 'TugasPraktikum.dart'. The code defines a 'main' function that iterates through numbers from 2 to 201, checking for primes. The output console shows the program's execution, displaying the name and NIM for each prime number found.

```
Tugas > TugasPraktikum.dart > main
Run | Debug
1 void main() {
2   int max = 201;
3   int startNum = 2;
4
5   outerLoop:
6   for (int i = startNum; i <= max; i++) {
7     for (int j = 2; j <= i / startNum; j++) {
8       if (i % j == 0) {
9         continue outerLoop;
10      }
11    }
12    print("$i\t Nama : Galung Erlyan Tama, \tNIM : 2341720054");
13  }
14 }
```

PROBLEMS	OUTPUT	DEBUG CONSOLE	TERMINAL	PORTS	QUERY RESULTS
107	Nama : Galung Erlyan Tama,		NIM : 2341720054		
109	Nama : Galung Erlyan Tama,		NIM : 2341720054		
113	Nama : Galung Erlyan Tama,		NIM : 2341720054		
127	Nama : Galung Erlyan Tama,		NIM : 2341720054		
131	Nama : Galung Erlyan Tama,		NIM : 2341720054		
137	Nama : Galung Erlyan Tama,		NIM : 2341720054		
139	Nama : Galung Erlyan Tama,		NIM : 2341720054		
149	Nama : Galung Erlyan Tama,		NIM : 2341720054		
151	Nama : Galung Erlyan Tama,		NIM : 2341720054		
157	Nama : Galung Erlyan Tama,		NIM : 2341720054		
163	Nama : Galung Erlyan Tama,		NIM : 2341720054		
167	Nama : Galung Erlyan Tama,		NIM : 2341720054		
173	Nama : Galung Erlyan Tama,		NIM : 2341720054		
179	Nama : Galung Erlyan Tama,		NIM : 2341720054		
181	Nama : Galung Erlyan Tama,		NIM : 2341720054		
191	Nama : Galung Erlyan Tama,		NIM : 2341720054		
193	Nama : Galung Erlyan Tama,		NIM : 2341720054		
197	Nama : Galung Erlyan Tama,		NIM : 2341720054		
199	Nama : Galung Erlyan Tama,		NIM : 2341720054		

Link Github

https://github.com/GE08T/Pemrograman_Mobile_2025/blob/main/TugasPraktikum.dart