1 D4 - TEKKOM B

PRAKTIKUM BAB POINTER

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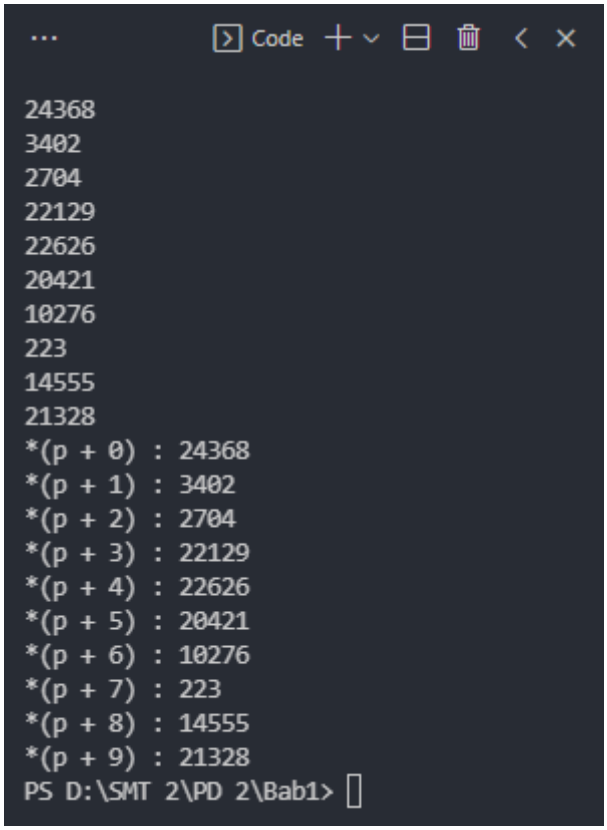
Percobaan 11

```cpp
#include <iostream>
#include <ctime>
using namespace std;

// function to generate and return random numbers.
int * getRandom( )
{
    static int r[10];

    // set the seed
    srand( (unsigned)time( NULL ) );
    for (int i = 0; i < 10; ++i)
    {
        r[i] = rand();
        cout << r[i] << endl;
    }
    return r;
}

// main function to call above defined function.
int main ()
{
// a pointer to an int.
    int *p;
    p = getRandom();
    for ( int i = 0; i < 10; i++ )
    {
        cout << "*(p + " << i << ") : ";
        cout << *(p + i) << endl;
    }
    return 0;
}
```

Output



Analisa

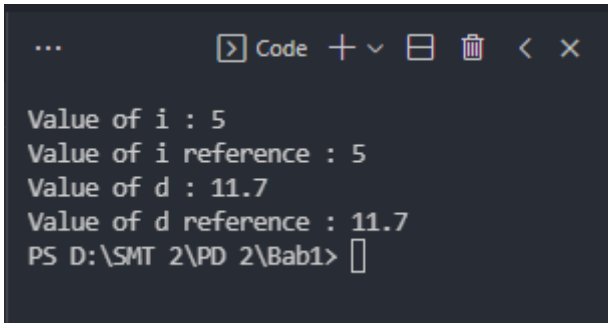
Pada program tersebut terdapat fungsi getRandom() yang berarti mencetak angka random yang kemudian imasukkan ke dalam variabel array. Setelah itu dikembalkan ke dalam fungsi main yang selanjutnya menampilkan output dari fungsi pointer getRandom().

Percobaan 12

```
#include <iostream>
using namespace std;

int main ()
{
    system("cls");
    // declare simple variables
    int i;
    double d;
    // declare reference variables
    int& r = i;
    double& s = d; i = 5;
    cout << "Value of i : " << i << endl;
    cout << "Value of i reference : " << r << endl;
```

```
    d = 11.7;
    cout << "Value of d : " << d << endl;
    cout << "Value of d reference : " << s << endl;
    return 0;
}
```

Output



Analisa

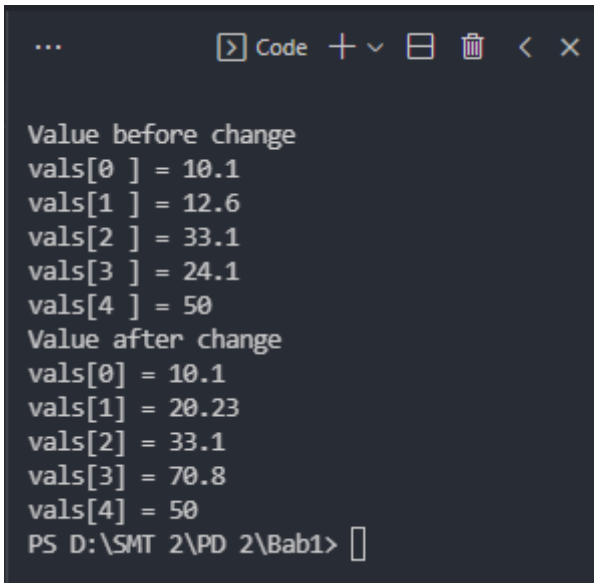
Pada progra tersebut terdapat variabel i yang bertipe integer dan variabel d yang bertipe double. Lalu variabel r dan s dideklarasikan sebagai referensi. Sehingga variabel r memiliki alamat yabg sama dengan variabel i, dan variabel s sama dengan variabel d.

Percobaan 13

```
#include <iostream>
#include <ctime>
using namespace std;

double vals[] = {10.1, 12.6, 33.1, 24.1, 50.0};

double& setValues( int i )
{
    return vals[i]; // return a reference to the ith element
}

// main function to call above defined function.
int main ()
{
    system("cls");
    cout << "Value before change" << endl;
    for ( int i = 0; i < 5; i++ )
    {
        cout << "vals[" << i << " ] = ";
```

```
        cout << vals[i] << endl;
    }
    setValues(1) = 20.23; // change 2nd element
    setValues(3) = 70.8; // change 4th element
    cout << "Value after change" << endl;
    for ( int i = 0; i < 5; i++ )
    {
        cout << "vals[" << i << "] = ";
        cout << vals[i] << endl;
    }
    return 0;
}
```

Output



Analisa

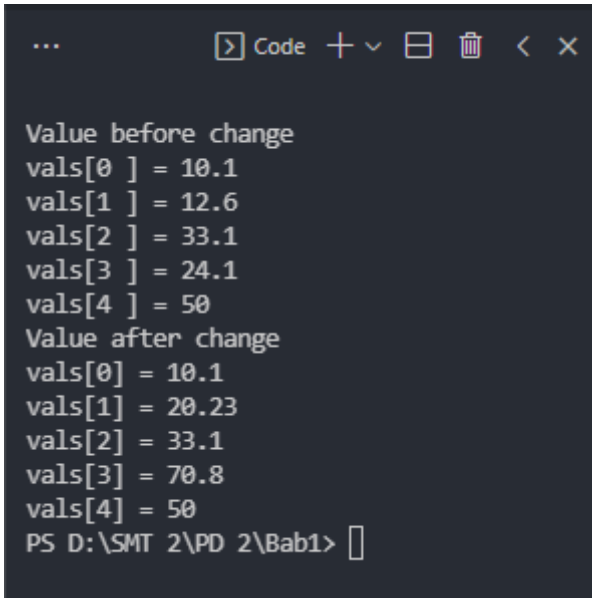
Pada program tersebut berfungsi untuk menukar dua variabel enggunakan fungsi swap dengan fungsi pointer pass by reference. Sehingga pada variabel temp berguna untuk meyimpan salah satu data, lalu kedua variabel di swap/ditukar.

Percobaan 14

```
#include <iostream>
#include <ctime>
using namespace std;

double vals[] = {10.1, 12.6, 33.1, 24.1, 50.0};
```

```
double& setValues( int i )
{
    return vals[i]; // return a reference to the ith element
}

// main function to call above defined function.
int main ()
{
    system("cls");
    cout << "Value before change" << endl;
    for ( int i = 0; i < 5; i++ )
    {
        cout << "vals[" << i << " ] = ";
        cout << vals[i] << endl;
    }
    setValues(1) = 20.23; // change 2nd element
    setValues(3) = 70.8; // change 4th element
    cout << "Value after change" << endl;
    for ( int i = 0; i < 5; i++ )
    {
        cout << "vals[" << i << "] = ";
        cout << vals[i] << endl;
    }
    return 0;
}
```

Output



Analisa

Pada program tersebut terdapat variabel global array double. Terdapat jga variabel setValues() yang berfungsi untuk mereferensikan variabel global yang akan digantikan dengan suatu bilangan. Variabel vals[1] dan vals[3] berubah ubah karena menggunakan fungsi dari setValues().