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| --- | --- |
| **Assignment Case** |  |
| COMP7116 | COMP7116001 | COMP7116016  Computer Vision |
| **Computer Science** | **O233-COMP7116-JS06-01** |
| ***Valid on*** *Odd Semester Year 2022/2023* | **Revision 00** |

1. Seluruh mahasiswa tidak diperkenankan untuk:

*All students are not allowed to:*

* + - Berdiskusi dan/atau bekerja sama dengan mahasiswa lainnya,

*Discuss and/or work together with other student participants,*

* + - Melihat sebagian atau seluruh jawaban mahasiswa lain,

*Seeing a part or the whole answer from another student,*

* + - Membuka dan menyalin dari **BUKU** atau **CATATAN**, **VIDEO** dari pengajar (recording kelas, VBL, Youtube, dsb) dan **REFERENSI** lainnya,

*Open and copy from any resources such as notes, videos (class recording, VBL, Youtube, etc) and other references,*

* + - Membuka dan menyalin jawaban dari internet (google, stackoverflow, dsb),

*Open and copy answer from the internet (google, stackoverflow, etc),*

* + - Mengerjakan soal yang tidak sesuai dengan tema yang ada di soal,

*Working with another theme which is not in accordance with the existing theme in the matter of the case,*

* + - Melakukan tindakan kecurangan lainnya,

*Committing other dishonest actions,*

* + - Secara sengaja maupun tidak sengaja melakukan segala tindakan kelalaian yang menyebabkan hasil karyanya berhasil dicontek oleh orang lain / kelompok lain.

*Accidentally or intentionally conduct any failure action that cause the results of the project was copied by someone else / other groups.*

1. Jika mahasiswa terbukti melakukan tindakan seperti yang dijelaskan butir 1 di atas, maka **nilai mahasiswa** yang melakukan kecurangan (menyontek maupun dicontek) akan di – **NOL** – kan.

*If the student is proved to the actions described in point 1 above, the score of the student which committed dishonest acts (cheating or being cheated) will be “Zero”.*

1. Perhatikan jadwal pengumpulan jawaban, segala jenis pengumpulan jawaban di luar jadwal tidak dilayani.

*Pay attention to the submission schedule, all kinds of submission outside the schedule will not be accepted.*

1. Bila Anda tidak membaca peraturan ini, maka Anda dianggap telah membaca dan menyetujuinya

*If you have missed to read these regulations, so you are considered to have read and agreed on it.*

1. Persentase penilaiaan untuk matakuliah ini adalah sebagai berikut:

*Marking percentage for this subject is described as follows:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| 40% | 60% | - |

1. Software yang digunakan pada matakuliah ini adalah sebagai berikut:

*Software will be used in this subject are described as follows:*

|  |
| --- |
| **Software**  *Software* |
| OpenCV 4.6.0.66  Python 3.7.6  SciKit 0.23.1  Visual Studio Code |

1. Ekstensi file yang harus disertakan dalam pengumpulan tugas mandiri, proyek, dan uap untuk matakuliah ini adalah sebagai berikut:

*File extensions should be included in assignment, project, and final exam collection for this subject are described as follows:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| PY | PY | - |

## Soal

*Case*

**Chocolate Shop**

One day, your friend asks you to buy her favorite chocolate. You go to the nearest chocolate shop, and there are so many chocolates available. Since you’re in a hurry and there are so many chocolates available, you decided to **create a program** to help you find the requested chocolate. Thankfully, the chocolate shop has **all photos** **of the chocolates** they have. The program needs a **feature matching** to **compare** between the **picture of your friend’s favorite chocolate** and **all photos of the chocolates** in the chocolate shop. After the program finished comparing all the chocolate photos, the program also needs to **show the best match** **between all comparisons**.

**Dataset Description**

The dataset consists of:

* **Target.jpg**

Picture of the **object to be found** (***Cadbury Dairy Milk***)

* **Data Folder**

Pictures of **all** **chocolates available in the chocolate shop**

**Preprocessing**

Before being processed, **pictures** from the **Data folder** must be preprocessed using **Grayscale** and **Adaptive Equalize Histogram** with following specifications:

* Clip limit: 2
* Tile grid size: (8,8)

**Feature Detection**

To **detect** features in images, you must use **SIFT** algorithm.

**Feature Matching**

The **object to be found** will be **matched** with **pictures** from the **Data folder**. All **matching results** will be **compared**, and the **best result** will be **shown**.

Graphical user interface

Description automatically generated

**Figure 1. The best result of feature matching**

**References:**

* <https://www.tokopedia.com/diamond-online/kinder-bueno-chocolate-43-g>
* <https://s3.bukalapak.com/img/8843887328/large/SILVERQUEEN_CASHEW_30gr_Coklat_Silver_queen_kacang_mede_30_g.jpg>
* <https://www.vanhoutenchocolates.com/vanhouten/is/image/content/dam/vanhouten-chocolates/en_us/images/products/vh-30g-fruits-nuts-570x5705644.png?hei=570&wid=570&fmt=png-alpha>
* <https://sg-live-01.slatic.net/p/e01325f07c466ce0edf8b5385f4212e9.jpg>
* <https://images.tokopedia.net/img/cache/500-square/VqbcmM/2021/2/8/8abad56c-c5ef-4f3d-8342-fcd799d0e58a.jpg>
* <https://images.tokopedia.net/img/cache/700/product-1/2020/5/2/batch-upload/batch-upload_50b570f9-9747-4cdc-98d9-302d35bccc5d>
* <https://cf.shopee.co.id/file/19cddff138e7635b400f6f5957b2bd4f>
* <https://www.tokopedia.com/onostore20/cokelat-cadbury-dairy-milk-165gr-165gram-165-chocolate?extParam=ivf%3Dfalse%26src%3Dsearch>
* <https://s7d2.scene7.com/is/image/hersheysassets/0_34000_00240_5_701_24000_097_Item_Front?fmt=webp-alpha&hei=412&qlt=75>
* <https://cf.shopee.co.id/file/6273f8838dcb443dbcab3b4686397d76>

**If you do not understand, please ask your assistant! Do not make your own assumption!**