

SISTEM PENCEGAH PLAGIARISME

DALAM TUGAS MAHASISWA DENGAN

SNAPSHOTTING

DAN

USER ACTIVITY LOGGING



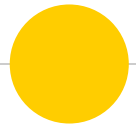
Azzam Syawqi Aziz

155150207111132



Agenda

- **Pendahuluan**
 - Latar Belakang & Rumusan Masalah & Tujuan
- **Landasan Kepustakaan**
 - Kajian Pustaka & Landasan Teori
- **Metodologi Penelitian**
- **Pembahasan Hasil**
 - Rekayasa Kebutuhan & Perancangan & Implementasi & Pengujian
- **Kesimpulan & Saran**



Pendahuluan



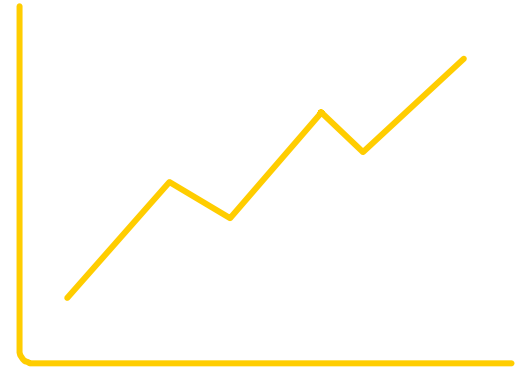
Motivasi Plagiarisme

Sumber daya internet dan kemudahan informasi.

(Born, 2003)

Bekerja paruh waktu dan dilema sosial.

(Park, 2004)





Akibat Plagiarisme

Tidak hanya mahasiswa, peneliti dan dosen dari universitas-universitas ternama.

(Agustina & Raharjo, 2017)

Karier tokoh-tokoh besar hancur.

Kiss (2013)



State-of-the-art

Plagiarism Detection

Plagiarism Prevention



Kelemahan Plagiarism Detection

- ◉ Paradigma **polisi-kriminal** (Howard, 2002)
- ◉ Pola pikir **nilai *oriented*** (Dweck & Leggett, 1988)
- ◉ Mencari **cara-cara baru** agar tidak terdeteksi PDS (Kiss, 2013)
- ◉ Tidak dapat melacak **bantuan eksternal** (Hellas, Leinonen, & Ihantola, 2017)



Kelemahan Plagiarism Detection (I)

- ⦿ Lemah dalam:
 - Dokumen **terjemahan** (Meuschke & Gipp, 2013)
 - Berbagai **gaya sitiran** (Modiba, Pieterse, & Haskins, 2016)
 - Berbagai **bahasa** (Martins, et al., 2014)
- ⦿ **Harga** tidak terjangkau (Agustina & Raharjo, 2017; Modiba, Pieterse, & Haskins, 2016)
- ⦿ Pelanggaran **hak intelektual** dan hak milik (Park, 2004)



Urgensi untuk Plagiarism Prevention

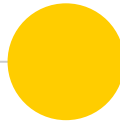
PDS (Plagiarism Detection Software) **tidak dapat mendeteksi semua kasus** plagiarisme. (Martins, et al., 2014)

Kemampuan *plagiarism prevention* **tidak dapat dilakukan oleh PDS**. (Hellas, Leinonen, & Ihantola, 2017)

Plagiarism prevention **sangat diutamakan**.
(Garner, et al., 2012)



Plagiarism Prevention





***State-of-art* Plagiarism Prevention**

Plagiarism in Take-home Exams: Helpseeking, Collaboration, and Systematic Cheating.

Hellas, Leinonen, & Ihantola, 2017

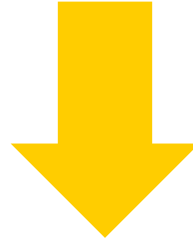


Kelemahan & Solusi

Mengabaikan **proses**
pengerjaan



Membeli tugas
(Leung & Cheng, 2017)



Snapshotting



Kelemahan & Solusi (I)

Analisis hanya **di akhir**

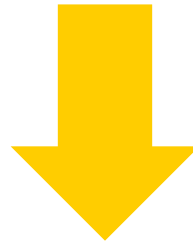


Kecurangan **selama** mengerjakan
(Hellas, Leinonen, & Ihantola, 2017)

Tidak memiliki **log**



Tidak dapat menilai **usaha**
(Hellas, Leinonen, & Ihantola, 2017)



User Activity Logging

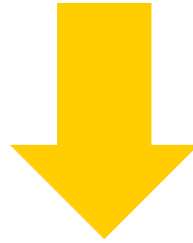


Kelemahan & Solusi (II)

Terikat suatu *platform*



Bentuk tugas & *software* **terbatas**



Platform agnostic *software*



Rumusan Masalah & Tujuan

Rumusan Masalah

- Hasil analisis kebutuhan sistem
- Hasil perancangan & implementasi sistem



Tujuan

- Menganalisis kebutuhan yang diperlukan sistem
- Merancang & mengimplementasikan sistem sesuai analisis kebutuhan



Rumusan Masalah & Tujuan (I)

Rumusan Masalah

- Hasil **pengujian** sistem



Tujuan

- **Memastikan** sistem sesuai dengan hasil rancangan dan kebutuhan sebelumnya.



Landasan Kepustakaan

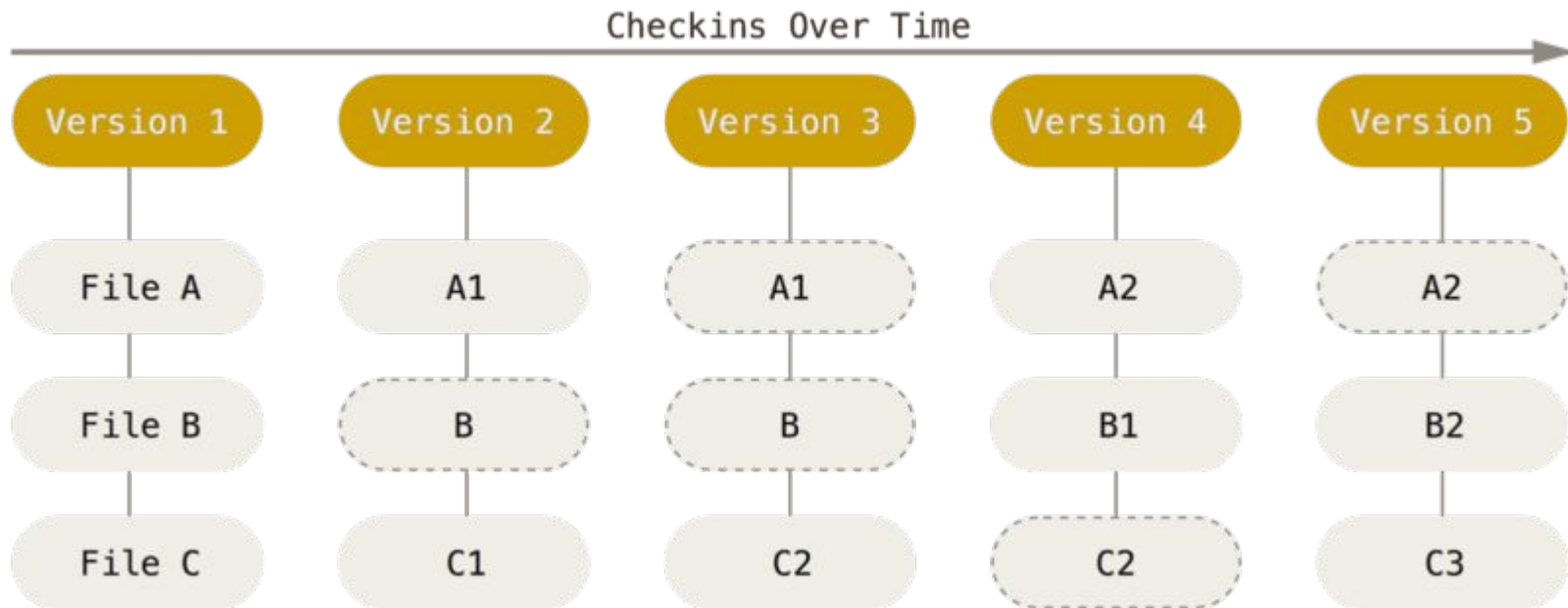


Plagiarism in Take-home Exams: Helpseeking, Collaboration, and Systematic Cheating.

Hellas, Leinonen, & Ihantola, 2017



Snapshotting



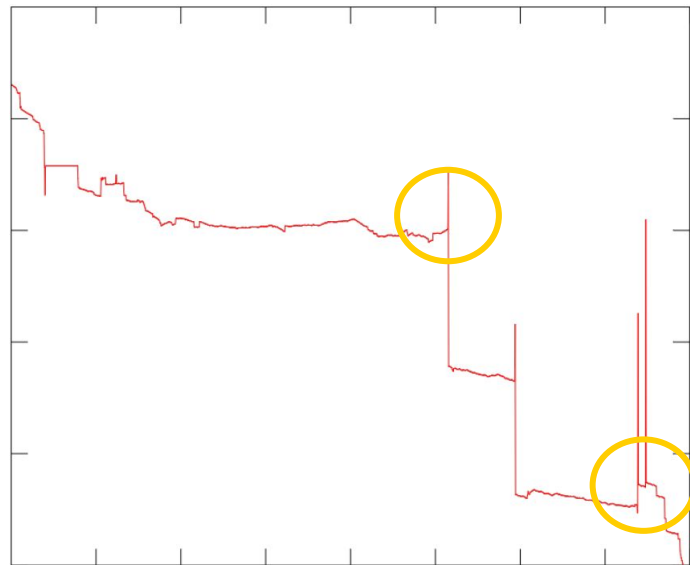


User Activity Logging



● Algoritme Edit-distance

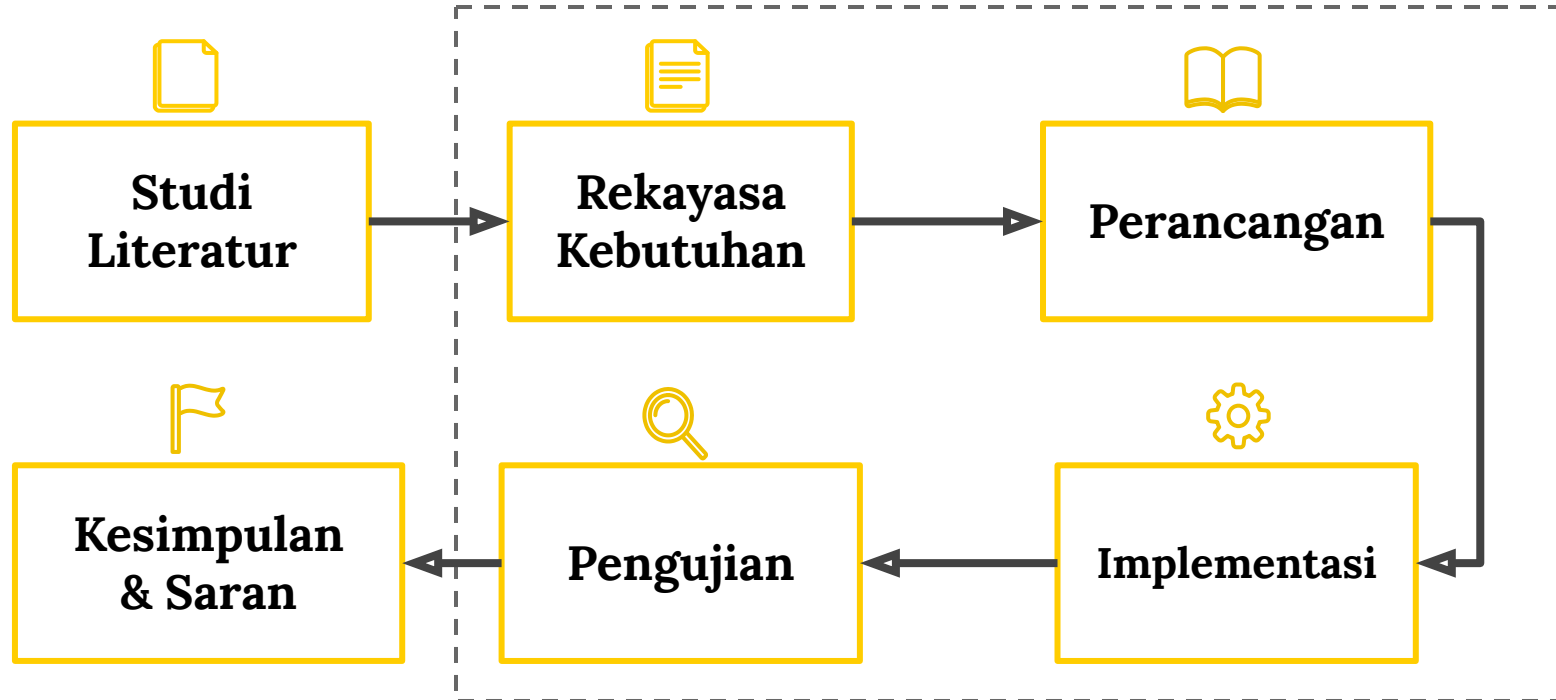
- 1) **tekkom** → fekkom (“t” → “f”)
- 2) fekkom → fikkom (“e” → “i”)
- 3) fikkom → **filkom** (“k” → “l”)





Metodologi Penelitian

Waterfall Model

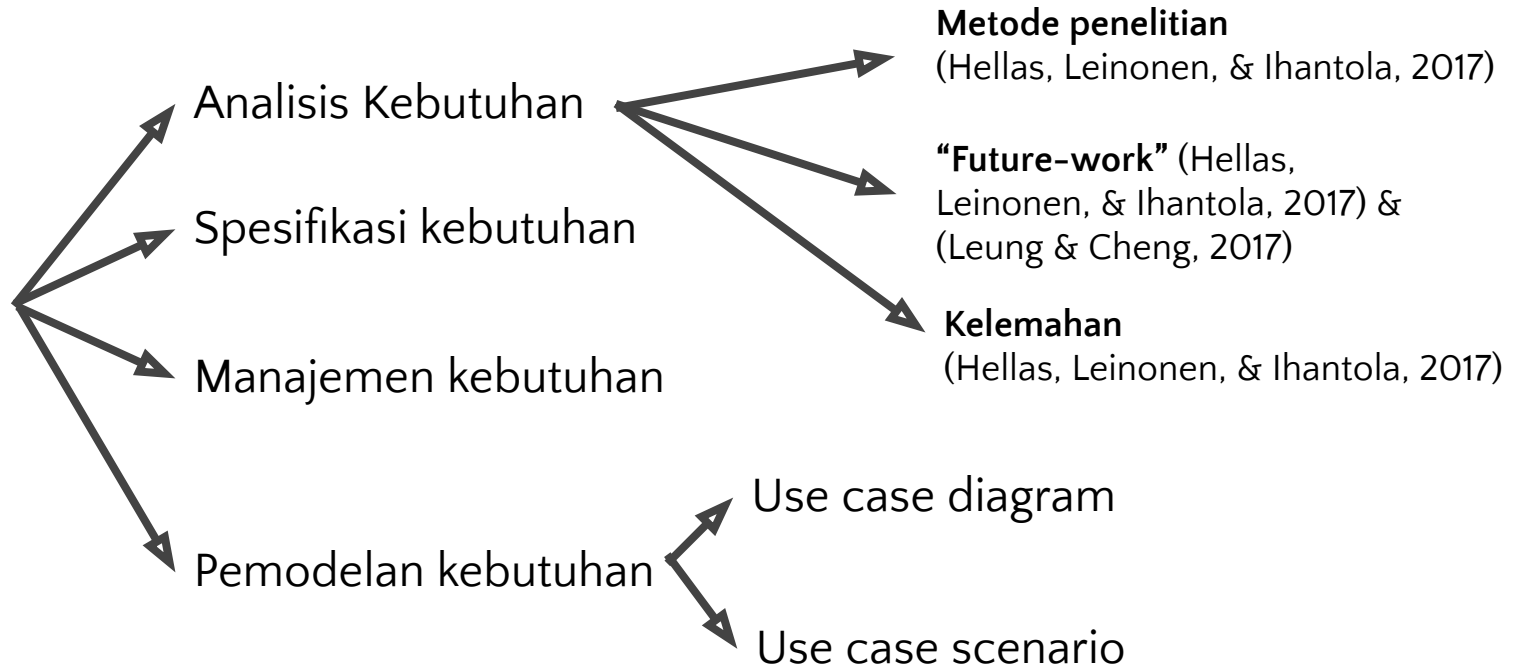




Metodologi Penelitian



Rekayasa Kebutuhan

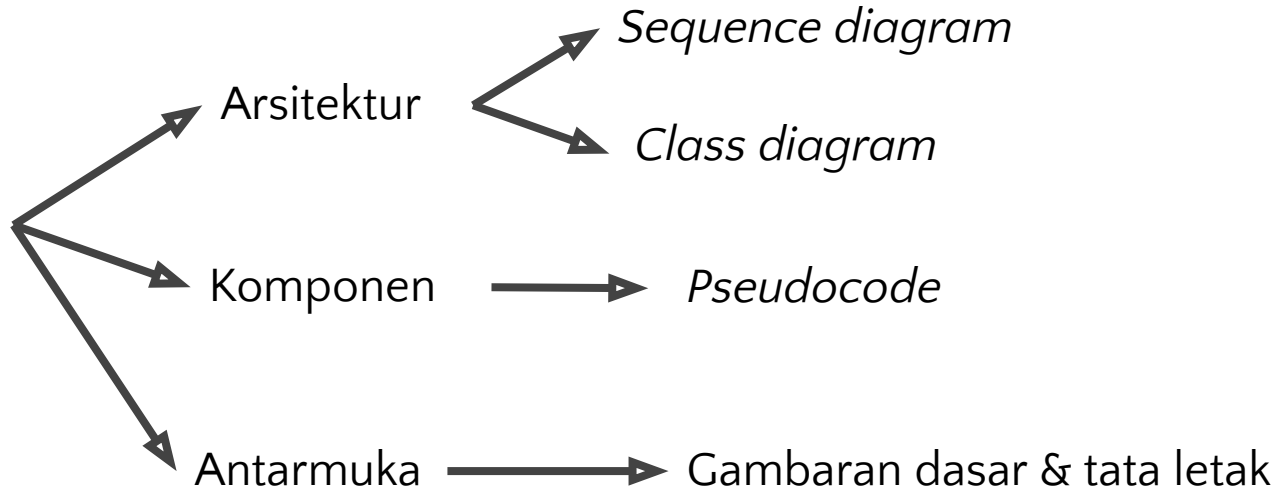




Metodologi Penelitian




Perancangan





Metodologi Penelitian


Implementasi

Kode Program → *Working code (Python)*

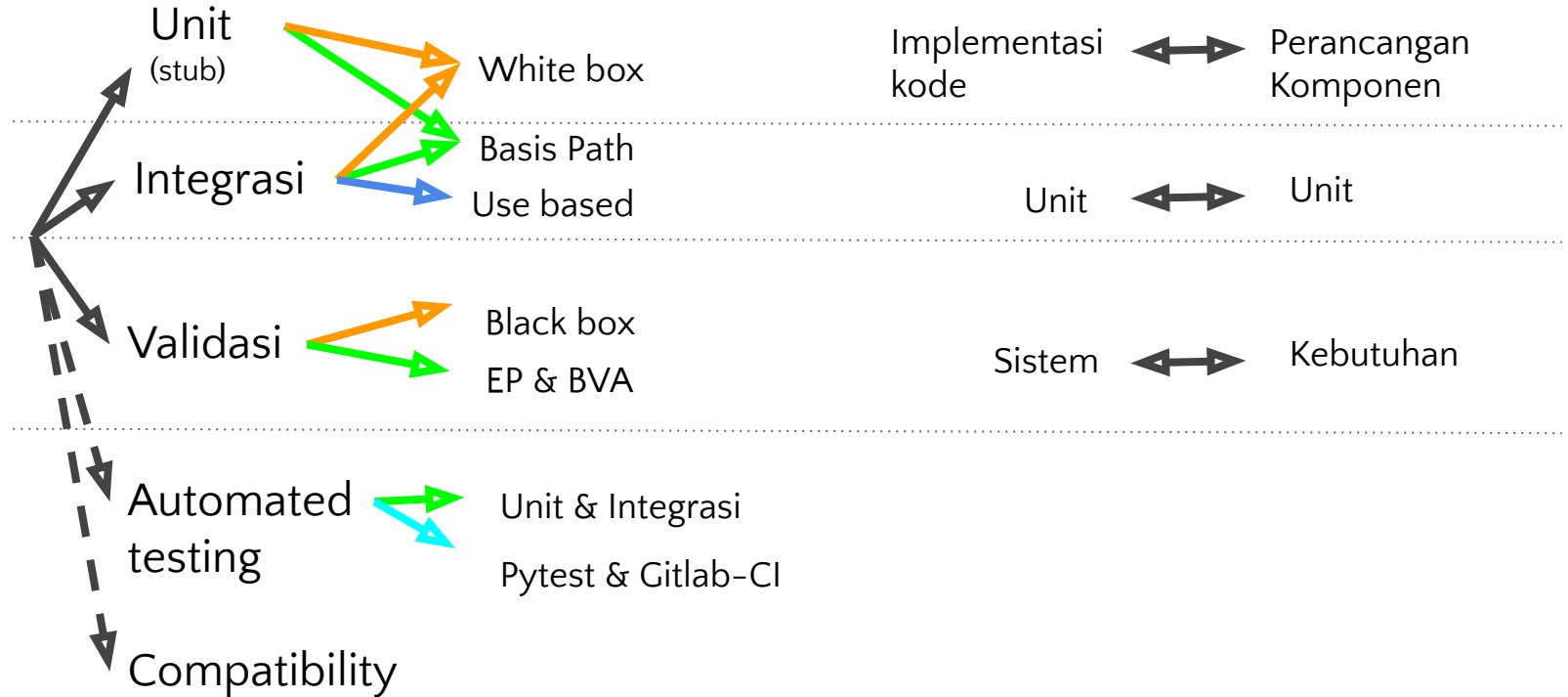
Antarmuka → GUI (Qt)

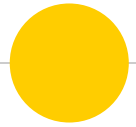


Metodologi Penelitian



Pengujian

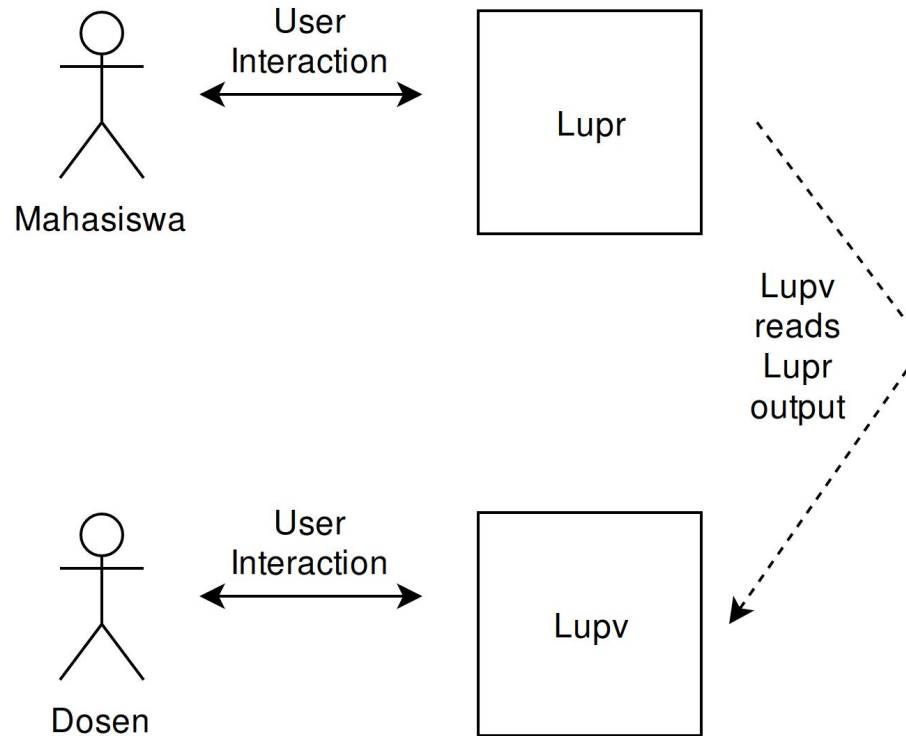




Rekayasa Kebutuhan

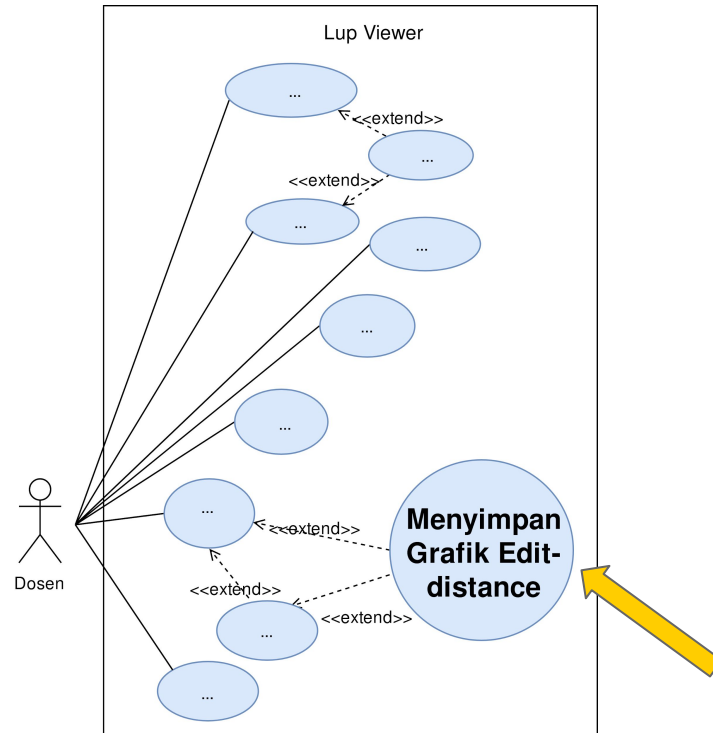


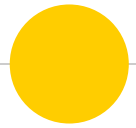
Deskripsi Sistem





Rekayasa Kebutuhan

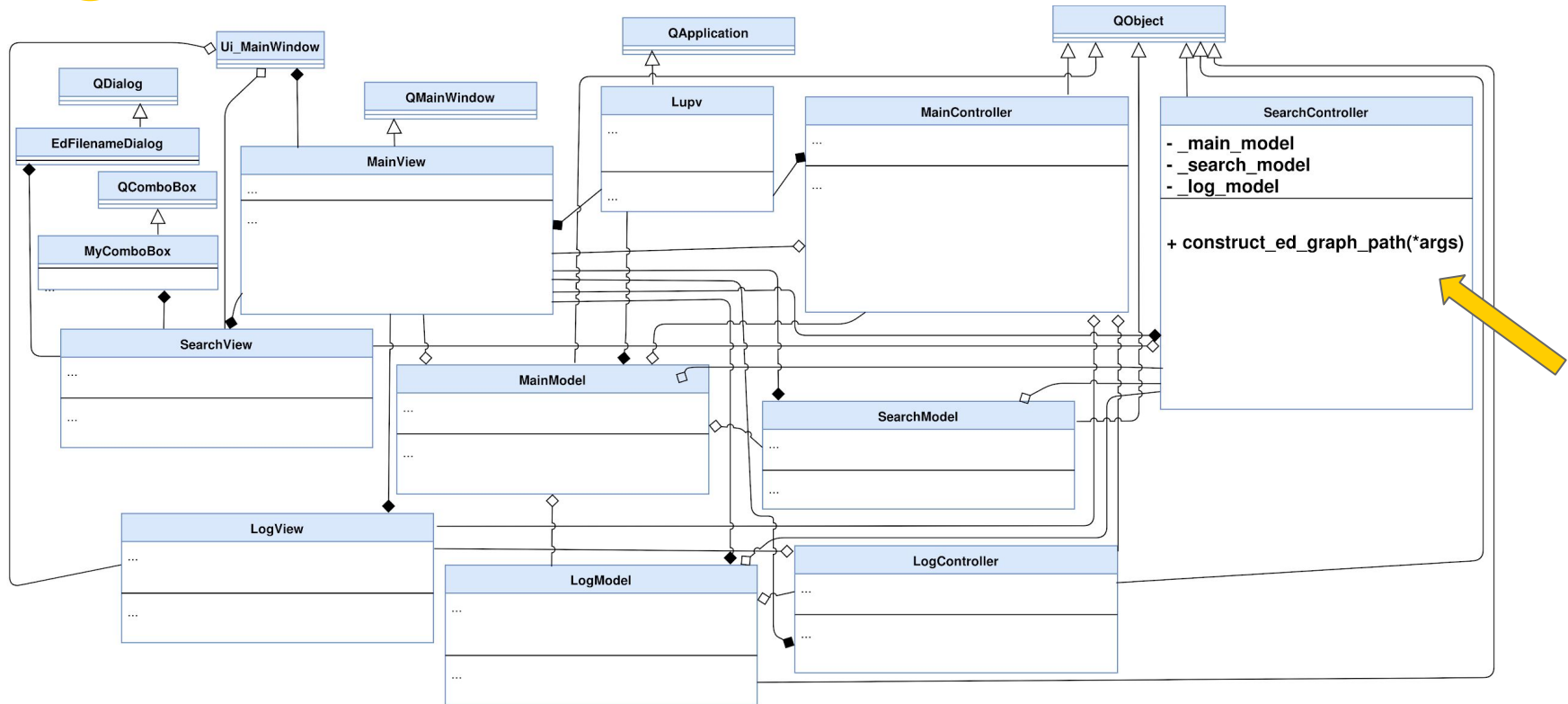




Perancangan



Perancangan Arsitektur





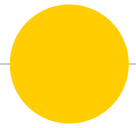
Perancangan Komponen

No	construct_ed_graph_path
1	START
2	CALL main_model RETURNING record_path
3	
4	IF passed_argument == 1
5	SET graph_fmt to argument + ".png"
6	ELSE
7	SET graph_fmt to argument + "_" + ".png"
8	ENDIF
9	SET graph_path record_path + "lupv_notes" + graph_fmt
10	RETURN graph_path
11	END



Perancangan Antarmuka





Implementasi

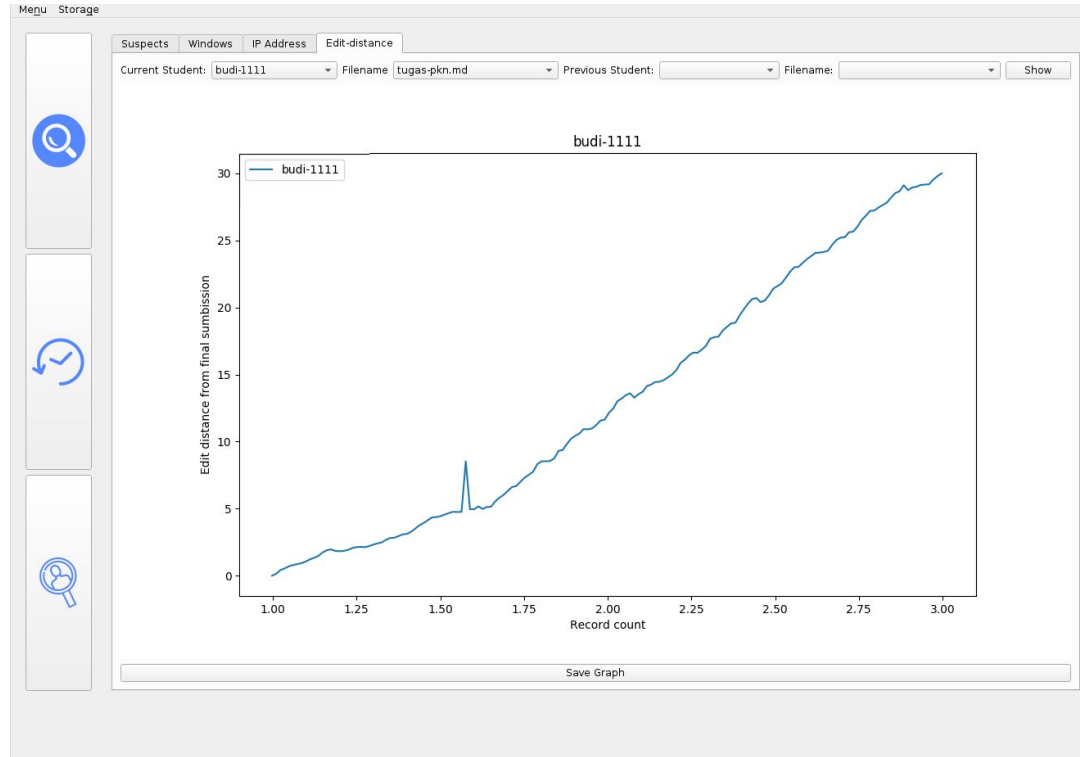


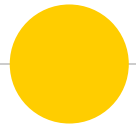
Implementasi Komponen

No	construct_ed_graph_path
1	<pre>def construct_ed_graph_path(self, *args):</pre>
2	<pre> record_path = self._main_model.record_path</pre>
3	
4	<pre> if len(args) == 1:</pre>
5	<pre> graph_fmt = "{}.png".format(args[0])</pre>
6	<pre> else:</pre>
7	<pre> names = "_".join(args)</pre>
8	<pre> graph_fmt = "{}.png".format(names)</pre>
9	
10	<pre> graph_path = join(record_path, "lupv-notes", graph_fmt)</pre>
11	<pre> return graph_path</pre>



Implementasi Antarmuka





Pengujian



Pengujian

Unit
(stub)



- Metode: **White box**
- Teknik: **Basis Path**
- Hasil : **Valid + 100% code coverage**

Integrasi



- Metode: **White box**
- Teknik: **Basis Path**
- Pendekatan: **Use based**
- Hasil: **Valid**

Validasi



- Metode: **Black box**
- Teknik: **EP & BVA**
- Hasil: **Valid**



Hasil Pengujian Unit

Name	Stmts	Miss	Cover
-----	-----	-----	-----
Lupv/__init__.py	0	0	100%
Lupv/controllers/__init__.py	0	0	100%
Lupv/controllers/log.py	64	0	100%
Lupv/controllers/main.py	54	0	100%
Lupv/controllers/search.py	172	0	100%
Lupv/models/__init__.py	0	0	100%
Lupv/models/logs.py	75	0	100%
Lupv/models/main.py	42	0	100%
Lupv/models/search.py	30	0	100%
-----	-----	-----	-----
TOTAL	437	0	100%
===== 91 passed in 6.45 seconds			



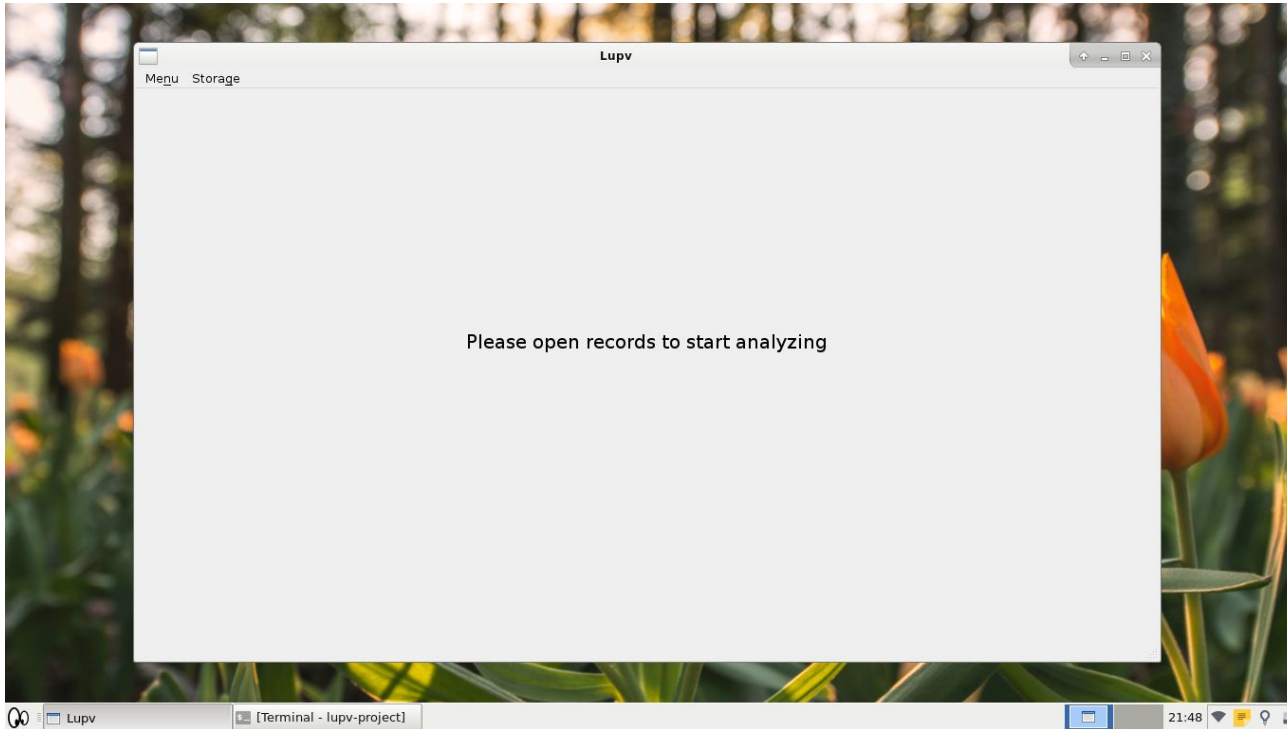
Automated Testing

```
tests/test_search_controller.py::TestSearchController::test_student_directories_iterator PASSED
tests/test_search_controller.py::TestSearchController::test_record_iterator PASSED
tests/test_search_controller.py::TestSearchController::test_analyze_suspects PASSED
tests/test_search_controller.py::TestSearchController::test_group_by_name PASSED
tests/test_search_controller.py::TestSearchController::test_get_suspects PASSED
tests/test_search_controller.py::TestSearchController::test_get_student_ips PASSED
tests/test_search_controller.py::TestSearchController::test_group_by_ip PASSED
tests/test_search_controller.py::TestSearchController::test_multigroup_child PASSED
tests/test_search_controller.py::TestSearchController::test_get_student_ip_groups PASSED
tests/test_search_controller.py::TestSearchController::test_idx_of_substring PASSED
tests/test_search_controller.py::TestSearchController::test_collect_student_windows PASSED
tests/test_search_controller.py::TestSearchController::test_get_student_windows PASSED
tests/test_search_controller.py::TestSearchController::test_populate_student_dirs PASSED
tests/test_search_controller.py::TestSearchController::test_load_prev_editdistances PASSED
tests/test_search_controller.py::TestSearchController::test_get_prev_student_names PASSED
tests/test_search_controller.py::TestSearchController::test_get_prev_filename_sample PASSED
tests/test_search_controller.py::TestSearchController::test_calc_prev_editdistances PASSED
tests/test_search_controller.py::TestSearchController::test__get_student_records PASSED
tests/test_search_controller.py::TestSearchController::test_calc_editdistances PASSED
tests/test_search_controller.py::TestSearchController::test_create_lupvnotes_dir PASSED
tests/test_search_controller.py::TestSearchController::test_construct_ed_graph_path PASSED
tests/test_search_controller.py::TestSearchController::test_construct_editdistance_path PASSED
tests/test_search_controller.py::TestSearchController::test_export_editdistance PASSED
```

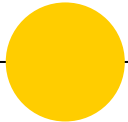
===== 91 passed in 8.62 seconds =====



Compatibility Testing



Kesimpulan & Saran





Kesimpulan

Rekayasa
Kebutuhan



- 2 Aktor
- 2 Kebutuhan untuk *Lup Recorder*
- 10 Kebutuhan untuk *Lup Viewer*
- 1 Kebutuhan non-fungsional

Perancangan
&
Implementasi



- 6 *class* untuk *Lup Recorder*
- 12 *class* untuk *Lup Viewer*
- *Pseudocode* → *Working code (Python)*
- *Gambaran* → *GUI (Qt)*

Pengujian



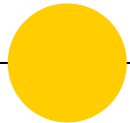
- Unit, integrasi, validasi, *automated*, *compatibility*.
- valid



Saran

- Tidak menyimpan data secara lokal, melainkan menggunakan **penyimpanan server**.
- Menambah **sistem operasi yang didukung** dengan melakukan *porting*.

Demo Aplikasi





Terima Kasih!



Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by SlidesCarnival
- Photographs by Unsplash