# Google Sprint Design for Independent Learning-Independent Campus Application UX Design

Rufman Iman Akbar<sup>\*1</sup>, Johannes Hamonangan Siregar<sup>2</sup>, Chaerul Anwar<sup>3</sup>

<sup>1,2,3</sup>Universitas Pembangunan Jaya; Tangerang Selatan, Banten <sup>1,2,3</sup>Study Program Information System, Univ Pembangunan Jaya e-mail: \*1**rufman.iman@upj.ac.id**, <sup>2</sup>johannes.siregar@upj.ac.id, <sup>3</sup>chaerul.anwar@upj.ac.id

## Abstrak

Mahasiswa harus memiliki pemahaman yang baik mengenai Kebijakan Merdeka Belajar Kampus Merdeka yang dicanangkan oleh Kemendikbud pada tahun 2020. Mahasiswa enggan mengikuti program karena kurangnya pengetahuan dan informasi yang salah tentang kegiatan tersebut, sehingga diperlukan adanya sistem informasi untuk mempersiapkan dan menangani program-program tersebut. Tujuan dari penelitian ini adalah untuk membuat desain UX untuk sistem informasi yang akan memungkinkan mahasiswa dalam memahami kebijakan program dan berpartisipasi dalam kegiatan program. Teknik penelitian ini berfokus pada pembuatan desain UX yang memenuhi persyaratan kebijakan dengan tetap mempertimbangkan kebutuhan mahasiswa. Populasi data diambil dari mahasiswa Jurusan Sistem Informasi Universitas Pembangunan Jaya. Google Sprint Design adalah metodologi desain UX yang digunakan dalam penelitian ini. Enam fase proses desain Sprint Google adalah Memahami, Menentukan, Membuat Sketsa, Memutuskan, Membuat Prototipe, dan Memvalidasi. Tim pengembangan aplikasi menggunakan hasil desain UX, dan terbukti efektif. Telah ditunjukkan dalam penelitian ini bahwa hasil desain dapat memenuhi kebutuhan pemangku kepentingan system.

Kata kunci— Disain Sprint Google, UX Disain, Merdeka Belajar Kampus Merdeka

# Abstract

Students must have a solid understanding of the Independent Learning-Independent Campus Policy, which was introduced by the Ministry of Education, Culture, Research, and Technology in 2020. Students are unwilling to participate in programmes due to a lack of knowledge and false information about it, so an information system is needed to prepare and handle these programmes. The goal of this study is to create an UX design for information system that will enable students in understanding programme policies and participating in programme activities. The technique of this study focuses on creating UX design that satisfy the policy's requirements while taking into account the needs of students. Students from Universitas Pembangunan Jaya's Department of Information Systems make up the data population. Google Sprint Design is the UX design methodology employed in this study. The six phases of the Google Sprint design process are Understand, Define, Sketch, Decide, Prototype, and Validate. The application development team uses the UX design outcomes after they have been

demonstrated to be effective. It has been demonstrated in this study that design outcomes can take system stakeholders' needs into account.

Keywords— Google Sprint Design, UX Design, Independent Learning-Independent Campus

#### 1. INTRODUCTION

The modernization of information technology has altered society's way of life and means of doing business. Artificial intelligence (AI) technology has made it more realistic to use current computer hardware for information and communication purposes. The Industrial Revolution 4.0 period, which is the result of the various changes brought about by this circumstance and is currently in effect, has the potential to significantly alter a wide range of industries and will fundamentally alter the nature of employment[1]. The idea of Society 5.0 is emerging for the future of human life and society and aims to develop not only the industry through technology but also the society for living spaces and public behaviours. These adjustments have led to the creation of numerous new occupations based on human resource innovation and creativity using current information technology. Higher education must take seriously the demand for human resources for these new positions by implementing educational innovations that will help students become capable of producing learning outcomes with the value of fresh and innovative ideas[2].

It's crucial to incorporate innovation across the board when it comes to the delivery of learning activities, particularly as higher education develops. The Indonesian government is aware of the value of higher education in developing and implementing cutting-edge learning methodologies to meet the demands of the labour market of today. The Ministry of Education, Culture, Research and Technology (MoCERT) is aware of the necessity for higher education to create and apply cutting-edge learning strategies in terms of national education[3]. The Merdeka Belajar Kampus Merdeka Programme (MBKM), also known as the Independent Learning-Independent Campus Policy, was developed in February 2020 to address these requests. This policy will encourage students to acquire a variety of knowledge that will be valuable in their future employment. Pertaining to the policy "The Right to Study Three Semesters Outside of Their Study Programme" and its improvements in learning for students. Students can participate in 8 different types of MBKM activities outside of their academic programmes and institutions of higher learning, including 1) student exchange, 2) internship or work experience, 3) teaching campus, 4) research, 5) the Project is Humanity, 6) entrepreneurial activities, 7) independent studies/projects, and 8) building villages or humanitarian programmes[4].

The MoCERT for MBKM policy is followed by Universitas Pembangunan Jaya (UPJ), a higher education institution. UPJ grants responsibility for the technical implementation of choosing MBKM activities to the Department of Study programme. For the Department of Information Systems (SIF) UPJ, it has been decided which required courses for semesters 6, 7, and 8 as well as elective courses can be compared to MBKM programme activities. The justification is that students who plan to work in the information technology (IT) industry must have experience with real-world projects, not just classroom simulations. Once they have gained experience working hard, the kids will be able to complete their tasks swiftly. Students will have more portfolios required for employment in the IT area thanks to the job experience they Student Exchanges, Internships/Work Practises, have earned. Teaching Campus, Research/Research, and Independent Studies/Projects are among the 8 types of MBKM activities in which SIF students have engaged[5]. The policies of the MBKM activity

programmes were not sufficiently understood, according to observations of students. Utilising questionnaires and interviews, information about the MBKM program's comprehension by SIF students was gathered. The SIF's implementation of the MBKM programme is crucial for the subsequent student learning process. The students' comprehension of MBKM needs to be strengthened so that they can appreciate its significance and use their knowledge and abilities in a way that will be helpful once they graduate.

There is a lot of study on the MBKM programme that takes statistical significance into account, but there isn't nearly as much that looks at information systems as potential answers. The perception of the academic community about readiness and understanding for the implementation of MBKM is taken into account. Data quantitatively shown, as a consequence of the study, that the academic community is quite understanding and prepared to adopt the MBKM programme. The Programme for International Student Assessment (PISA) and UNESCO indicators' Likert scale scores are used to demonstrate the degree of identification, application, and reasoning support for the development of social skills[6]. The statistical evaluation of the MBKM program's adoption, socialisation, and implementation success is taken into account in. The soft and hard skills of graduates are improved, and they are more prepared, up to date, and capable of leadership. It takes into account how higher education policies and plans interact with the industrial sector[7]. This qualitative research shows a favourable preference for curriculum revitalization and concentration on MBKM, which is relevant to higher education strategies for engaging the industrial sector and the labour market. To accomplish the Sustainable Development Goals, it is important to investigate the connection between MBKM and high-quality education. The use of a qualitative analysis method reveals that MBKM is evolving into a strategy for policy adaptation that produces high-quality employee benefits in accordance with the standards for SDGs education. It takes into account preparations, implementation challenges, and the extent of academic involvement in MBKM. As a result of the implementation of MBKM, descriptive study was undertaken, and this research can be utilised as a benchmark for MBKM programmes in the future. In particular, it addresses how to get ready for the MBKM policy's implementation in higher education with regard to graduates' employability[8]. The MBKM programme might be a viable way to reduce Indonesia's unemployment rate. In order to evaluate how the MBKM programme has improved students' hard and soft skills in terms of performance. The findings of the descriptive statistics and quantitative analysis suggest that the application of MBKM increases college good category grades. Describe the function of the library in assisting MBKM. Data from the literature were gathered and examined in this qualitative study[9].

Specifically, the results show that collection numbering and form enrichment, active contact, fostering a pleasant learning environment, librarianship or subject referencing, accreditation assistance, bibliometrics, and trained librarians are activities that can be applied inside the library. The purpose of the study is to ascertain whether academic stress has an impact on student learning outcomes in. Distribution of questionnaires to respondents served as the primary method of data collection for this observational, cross-sectional design. An institutional model for the MBKM program's execution must be created in order to determine who is involved and how relationships are impacted. The results of the descriptive and qualitative approach show that both internal and external stakeholders were involved in the execution of his MBKM. The MBKM program's criteria, which cover learning planning, learning procedures, evaluation, and assessment of learning delivery, should be modified in order to create the curriculum. The implementation of the designed curriculum by modifying the MBKM policy is crucial because it engages external partners in achieving learning outcomes in higher education[10]. A qualitative research approach utilising a literature study was utilised. It's crucial to take into account the information provided by the MBKM program's external

partner. Additionally, it was done to check students' social skills during teaching campus events. Information systems-related research has been done in relation to the MBKM programme. produced a prototype for the idea of employing the learning guidance information system as a platform for monitoring student guidance in. The approach uses design thinking and incorporates MBKM data.

Based on the problems above, this research aims to help create UX designs that can be used in building mobile applications to support the MBKM. The UX design will be made using the Google Sprint design methodology. After being equipped with a UI design, this UX design will be the basis for developing this MBKM support system. The Design Sprint follows six phases: Understand, Define, Sketch, Decide, Prototype, and Validate[11].

The remaining portions of the research are organised as follows in this publication. The Google sprint design technique is the subject of this study's methodology, which is presented in Section Methodology and is explained in precise, step-by-step detail. The section titled "Result and Discussion" contains the study's findings. Finally, the research's conclusion is presented in Section Conclusion.

#### 2. RESEARCH METHODS

This study uses the Google Design sprint methodology to generate application UX designs. The team consists of four personnel, one chairman and three members. Google Design Sprint is a product development methodology developed by Google to help teams design, validate, and test product concepts quickly and effectively in a short time. The Design Sprint follows six phases: Understand, Define, Sketch, Decide, Prototype, and Validate[11].



Figure 1. Google Design Sprint phase (https://designsprintkit.withgoogle.com/)

First is phase 1: Understand. The team will develop a shared knowledge base among all participants during the Understand phase. Knowledge experts from throughout the company are asked to describe the problem space from a business, user, competitive, and technological aspects using the Lightning Talk technique.

Next phase is phase 2: Define. The team reviews what they discovered during the Understand phase to choose focus during the Define phase. To do this, it is necessary to specify the precise context and desired effects of potential solutions. The final step of the phase involves deciding on your Sprint's specific emphasis as well as its goals, success metrics, and signals.

Phase 3: Sketch. The Design Sprint team produces and shares a wide range of ideas individually during the Sketch phase. The team will begin by looking for ideas, such as solutions in unconventional settings. Following that, each participant in the Design Sprint will independently produce ideas for consideration. The team will next distil ideas into a single, clearly stated Solution Sketch for each individual.

Phase 4: Decide. The Design Sprint team determines the direction or concept to be prototyped during the Decide phase. Each member will present their Solution Sketch, and the group will use decision-making procedures to reach agreement on a single concept. The ultimate goal will be to address the Design Sprint's primary emphasis.

Phase 5: Prototype. The Design Sprint team determines the direction or concept to be prototyped during the Decide phase. Each member will present their Solution Sketch, and the group will use decision-making procedures to reach agreement on a single concept. The ultimate goal will be to address the Design Sprint's primary emphasis.

The las phase is phase 6: Validate. The Design Sprint team will present the concept to users during the Validate phase; this is the crucial moment! When users interact with your prototype, the team will gather their input. If necessary, the team will also review stakeholder and technical feasibility. We'll conclude our sprint with a notion that has been proven correct or one that needs further development. In any case, we've advanced.

The team runs all phases to get the UX design results. The results of this design will be submitted to the application development team to be made into the final result. This paper will explain these stages in the MBKM system development environment.

#### 3. RESULT AND DISCUSSION

This development's initial stage is well understood. A shared knowledge of the initiatives supporting MBKM on campus is developed during this phase. A number of experts who were familiar with the MBKM concept, individuals whose work would be relevant to MBKM, and individuals who would subsequently be involved in creating and implementing this activity were invited to the conversation[12].

The discussion technique makes use of the Lightning Talk concept by fusing the opinions of subject matter experts and MBKM activity actors to be understood by the entire team. The group is in charge of UI and UX design, as well as the group that will create the applications. The comprehension of the members of the development team is improving and is generally consistent after multiple meetings.

In the second phase, the define phase - the team evaluates everything learned in the previous step and tries to focus on the essentials. In this phase, the team formulates specific things and determines the needed outcomes. The main activities in MBKM, which are the main focus, are:

- a. Student exchange
- b. Internship/Work Practice
- c. Teaching Assistant in the Education Unit
- d. Research.
- e. Humanity Project
- f. Entrepreneurial Activities
- g. Independent Study/Project
- h. Building Villages / Thematic Real Work Classes

Each activity has its UX made in detail - mainly related to how the action is taken and the needs that need to be prepared, and also mapped out the outputs required in the report[13].

Student exchanges are held to shape some of the attitudes of students as stipulated in the Regulation of the Minister of Education and Culture (Permendikbud) Number 3 of 2020,

namely respect for cultural diversity, views, religions, and beliefs, as well as other people's original opinions or findings; and cooperate and have social sensitivity and concern for society and the environment. There are many student exchanges with complete credit transfers carried out with overseas university partners. However, the number of credit transfer systems between universities within the country is still minimal[14].

The internship program provides sufficient experience for students and direct learning in the workplace (experiential learning). During the internship, students will gain hard skills (skills, complex problem solving, analytical skills) and soft skills (professional/work ethics, communication, cooperation). Meanwhile, the industry gets talent that, if suitable, can later be recruited immediately, thus reducing recruitment and initial/induction training costs.

Teaching Campus, primary and secondary education quality in Indonesia is still deficient (PISA 2018 ranks Indonesia at number 7 from the bottom). The number of education units in Indonesia is vast, and there are various problems, both formal, non-formal, and informal education units. Students in educational units such as elementary, middle, and high schools carry out learning activities through teaching assistance—schools where teaching practice can be located in cities or remote areas[15][16].

For students who are passionate about being researchers, students can realize independent learning through research activities at research institutes/study centers. Through research, students can develop a critical way of thinking, which is very much needed for various scientific groups at the higher education level. With critical thinking skills, students will deepen, understand, and be able to do research methods better. For students interested and wanting to work in the research field, the opportunity to intern in a research center laboratory is their dream. In addition, research laboratories/institutions sometimes lack research assistants when working on short-term research projects (1 semester -1 year).

Humanity Project. Indonesia has experienced many natural disasters, whether in the form of earthquakes, volcanic eruptions, tsunamis, hydrological disasters, etc. Universities have so far helped overcome disasters through humanitarian programs. So far, student involvement is voluntary and only short-term. In addition, many international institutions (UNESCO, UNICEF, WHO, and so on) have conducted in-depth studies and made development pilot projects in Indonesia and other developing countries. Students with a youthful spirit, scientific competence, and interest can become "foot soldiers" in humanitarian and other development projects in Indonesia and abroad[17].

Entrepreneurial Activities. Based on the Global Entrepreneurship Index (GEI) in 2018, Indonesia only has a score of 21% of entrepreneurs from various fields of work, or ranks 94 out of 137 countries surveyed. Meanwhile, according to research from the IDN Research Institute in 2019, 69.1% of millennials in Indonesia have an interest in entrepreneurship. Unfortunately, the entrepreneurial potential of the millennial generation has not been appropriately managed so far. The Merdeka Campus policy encourages the development of student entrepreneurial interest with appropriate learning activity programs.[18]

Independent Study, many students are passionate about creating outstanding works contested at the international level or positioned from innovative ideas. Ideally, independent studies/projects are carried out to complement the curriculum already taken by students. Universities or faculties can also conduct independent studies to complete topics not included in the class schedule but are still available in the study program or faculty syllabus. Students can carry out independent project activities through interdisciplinary group work.

Building Villages / Thematic Real Work Classes. Thematic Real Work Lectures (KKNT) is a form of education that provides learning experiences for students to live in the community outside the campus, which directly together with the district, identify potential and deal with problems so that they are expected to be able to develop village/regional potential and

concoct solutions for issues in the village. KKNT activities are expected to hone partnership soft skills, cross-disciplinary/scientific (cross-competence) teamwork, and student leadership in managing development programs in rural areas. So far, universities have implemented the KKNT program; it's just that the Semester Credit Units (SKS) cannot or can be recognized according to the independent campus program, whose credit recognition is equivalent to 6-12 months or 20-40 SKS, with its implementation based on several models.[19]

In the third phase, all members of the UX design team make sketches according to their respective understandings. The drawings' results are then discussed to have the best and most realistic solution. Graphics made - using the Figma application, then modified and made into one sketch that team members can access and adjust based on agreement.[20]

Here are some examples of refined UX designs for the MBKM application. Sign-in or sign-up screen, options for using the Facebook, Google Mail, or Twitter apps to sign in, and examples of activity selection screens that students can follow.



Figure 2. Sign in screens and Boarding Screen

In the fourth decision stage, the team will finalize the UX design by refining the concept and concept and making a prototype. The group agrees on the chosen UX design. In the pictures, some examples of UX designs. The design is based on the team's agreement as the focus of the design sprint.

Furthermore, in the prototyping section, the sprint design team determines the detailed prototyping concept according to the phase decision. The group discussed the ideas made by each member, and the final result was a sketched solution that was mutually agreed upon. This is the primary goal of a design sprint that is executed in a very short time.

After completing the agreed-upon prototype, the team will present the UX design to users and stakeholders. The team gets input from actual system users, and after repairs - it is shown again in front of the stakeholders and the system development team. The final result obtained is a validated UX design.

The team then submit these results to the UI design team and then to the application development team. The UI design team and application developers continue to consult with the UX development team in completing this MBKM-supporting application. Based on the projects

carried out, no significant problems were found when the design was submitted to the UI development team and the application development team.

In this study, the team can complete UX design in less than one week with good UX design results. The design results can be used by the UI development team (to refine the design) and then used by the application development team without significant difficulties. This research proves that if used correctly, Google Sprint design can produce excellent and easy-to-understand designs. This also proves that the team can use Google Sprint Design to complete UX designs quickly but also has good quality. The team consists of four personnel, one chairman and three members. Using Fixma for design and also collaboration between team members.



Figure 3. Selected screens after fifth phase

### 4. CONCLUSION

Based on the research that has been done, it is proven that the Google sprint design, which consists of six phases: Understand, Define, Sketch, Decide, Prototype, and Validate, can be used to carry out UX designs in a relatively short time. These phases can produce a good design and be understood by the UI development team and application developers. The Google sprint design method can also be worked on in a team consisting of one chairperson and three members to collaborate. The use of the Figma Design application also contributes to making work easier.

The research team proved that the Google Sprint design method is suitable for UX design, using a web-based application (Figma Design) and working collaboratively within the team. The application built in this study is an application to support MBKM activities, with the main users being students and support from a team of education staff on campus.

## 5. RECOMMENDATION

Recommendations for further research are for larger applications, for example, a campus Academic Information System or Learning Management System. Applications have more complex features and more users. In addition, the material involved is also relatively more. By implementing this large application, you can see how capable Google Sprint design is when dealing with complex applications.

Another thing that can be applied is using a relatively large design team involving more than ten people, for example. Members can be divided into small teams, and teams can test whether collaboration can occur properly using this Google Sprint design.

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