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#1	Nokia library
Project goals	The goal of the project is to create a library web application.
Scope definition	Scope: <ul style="list-style-type: none">• Reservation, booking and prolongation• Books management (add, edit, request new book etc.)• Semi automated book details completion• Data migration from existing library system• User authorization
Requirements	<ul style="list-style-type: none">• Web technologies knowledge• Spring framework (or willingness to learn it)
Author	Mateusz Płuciennik
Team size	3-4

#2	Pattern detector in sound signal
Project goals	Design and implement an application, that for given sound signal (from either a file or microphone input) will detect certain events happening on the recording. Program should expose simple web interface with events statistics in form of a dashboard. The program will be running on Raspberry PI device with microphone attached.
Scope definition	Scope: <ul style="list-style-type: none">• Reading audio input from microphone• Analyzing the signal for occurrence of certain sound events• Gathering basic statistics on a web-based dashboard
Requirements	<ul style="list-style-type: none">• Familiarity with Linux and Raspberry PI• Basic knowledge of signal analysis• At least one of programming languages: Python, Go, Ruby, C++• Base web technologies knowledge
Author	Michał Pawlik, Wojciech Penar, Daniel Woźniak
Team size	2-3

#3	Code review notifications
Project goals	<p>A cross-browser compatible extension built using WebExtension API for code review notifications.</p> <p>Usually version control systems have poor built in system to handle notifications about what is happening in the review where user is participant or owner of it. Some already developed integrations do not meet the development team expectations or just does not exist. Receiving mails as notification is the same uncomfortable as our version control system sends a lot of mails everyday. At some point it is going to be considered as spam and turned off.</p>
Scope definition	<p>The goal is to create a light solution for a browser (which is opened almost all the time) with rich but not disturbing notification system and check-in list to keep those review requests organized and always have them around.</p> <p>The extension is intended to work with GitHub and GitLab git-repository platforms.</p>
Requirements	<ul style="list-style-type: none">• Basic knowledge about JavaScript, HTML, and CSS for being able to write browser extensions.• Willingness to learn.
Author	Maciej Bakowicz
Team size	2-3

#4	Augmented Reality game
Project goals	Implement Augmented reality Tower Defence game for Android system.
Scope definition	Scope: <ul style="list-style-type: none">• Create game map• Place map on flat surface• Gameplay elements• Units behavior• DB to save/load data (optional)• Multiplayer option (player versus player or players vs AI) (optional)
Requirements	<ul style="list-style-type: none">• Basic game engine knowledge - Unity engine, Unreal Engine or equivalent• Some graphics making experience will be plus
Author	Przemysław Podstawa
Team size	3-4

#5	Move up!
Project goals	Web and Android application for setting up collective cycling/running or other sport activities
Scope definition	Scope: <ul style="list-style-type: none">• Account creation• Posting announcements with work out details: when, how long, starting place, recurrence, advancement level etc.• Searching through existing announcements using specific filters and sending requests• Optional: creating a map with possibility to draw one's route and publishing it
Requirements	<ul style="list-style-type: none">• Basic programming knowledge
Author	Mariola Kowalska
Team size	<ul style="list-style-type: none">• 1 – 3 for web application• 4 – 6 for web and Android application

#6	Multiplayer Action race game
Project goals	<p>Create a 2D multiplayer action game where players race through a platformer-style "city" map, trying to get on top of highest buildings and installing BTS-es/Antennas for their team. General rules/ideas:</p> <ul style="list-style-type: none">• A crossover between Icy Tower and Mirror's Edge 2D• Players try to climb up the highest points, but there are difficulties on the way that can cause them to fall down (see Getting Over It with Bennet Foddy)• Players can interrupt others / knock them down on the way• Possible game types: Race to the top, Capture the BTS, Install as many BTSes in a given time
Scope definition	<p>Scope:</p> <ul style="list-style-type: none">• Multiplayer Game engine that allows players to move across a 2D side scroller map, interact with each others and complete objectives• Preferably the game should be runnable in browser• Optional: Map Editor
Requirements	<ul style="list-style-type: none">• Basic knowledge about game development• Basic knowledge about transferring data over network (TCP/UDP)• Familiarity with some game frameworks e.q. Phaser.js, Unity is very welcome
Author	Michał Porzycki
Team size	2-4

#7	Comparing graph databases
Project goals	<p>Based on prepared dataset that describes relations between ancestors (family tree) you will have to present those relations in a tree form, store and transform them using graph databases:</p> <ul style="list-style-type: none">• OrientDB• HGraphDB <p>As a conclusion you should compare those two databases based on performance and convenience for that task.</p>
Scope definition	<p>Following project includes:</p> <ul style="list-style-type: none">• Storing and presenting relation data in tree form in graph databases• Scripts that perform transformations on the data, such as:<ul style="list-style-type: none">– retrieve n-th ancestor/child based on relation column– filter children based on column value– get all elements with given ancestor
Requirements	<ul style="list-style-type: none">• Basic knowledge about databases• Basic knowledge about data structures• Willing to learn new technologies
Author	Filip Płotnicki
Team size	2-4