

데이터 분석 및 시각화

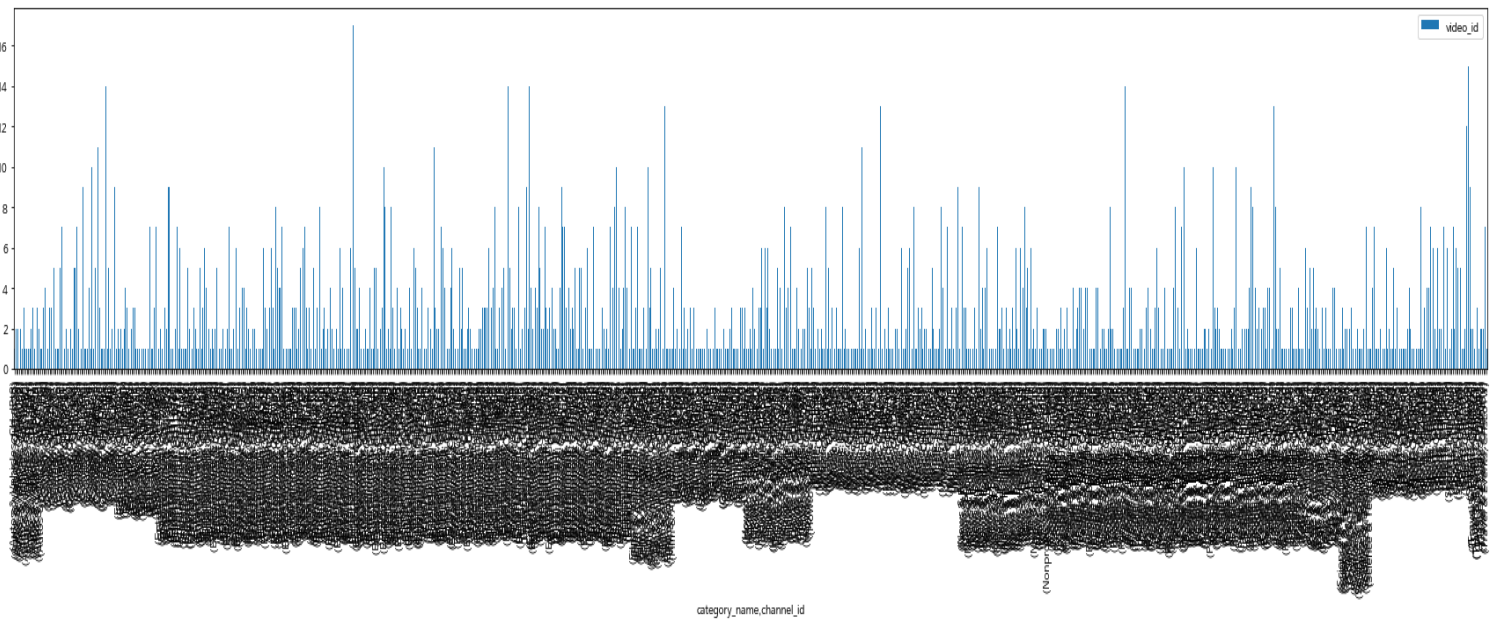
Q1. 데이터 타입별 시각화 (자유양식)

- 전체기간 카테고리->채널->비디오 개수
- 월별 카테고리->채널->비디오 개수
- 월별 TOP10 채널 (분류 기준은 비디오 개수)
- 주별 TOP5 채널 (분류 기준은 비디오 개수)
- 월별 카테고리별 태그 키워드 순위

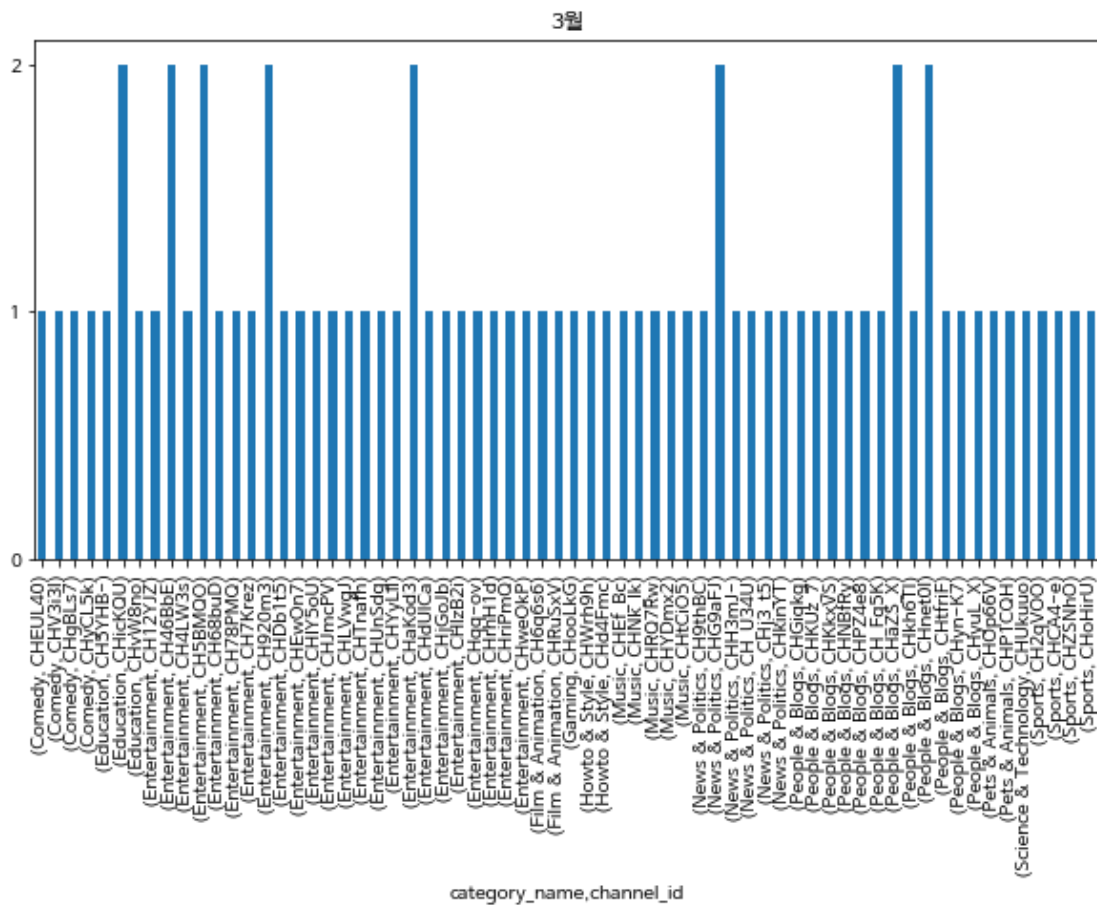
Q2. 각각의 비디오는 시청자의 호응도(engagement)를 판단할수 있는 객관적인 지표 들이 있음 ex) views, likes, dislikes, comments,...

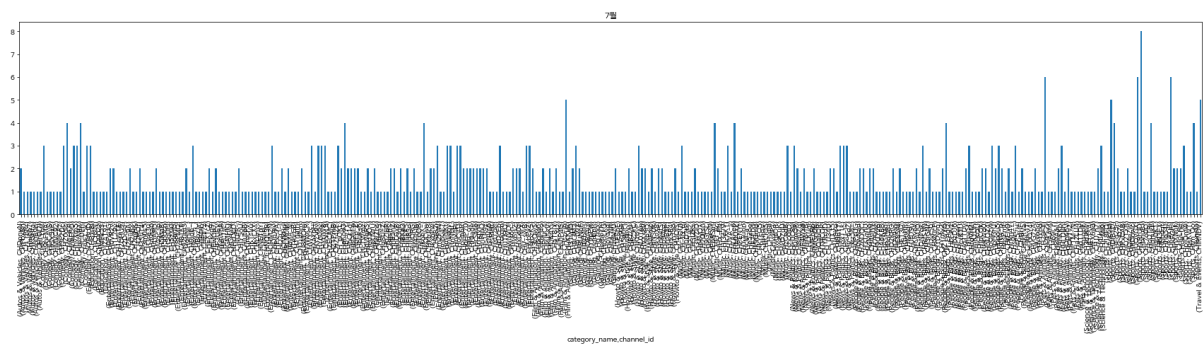
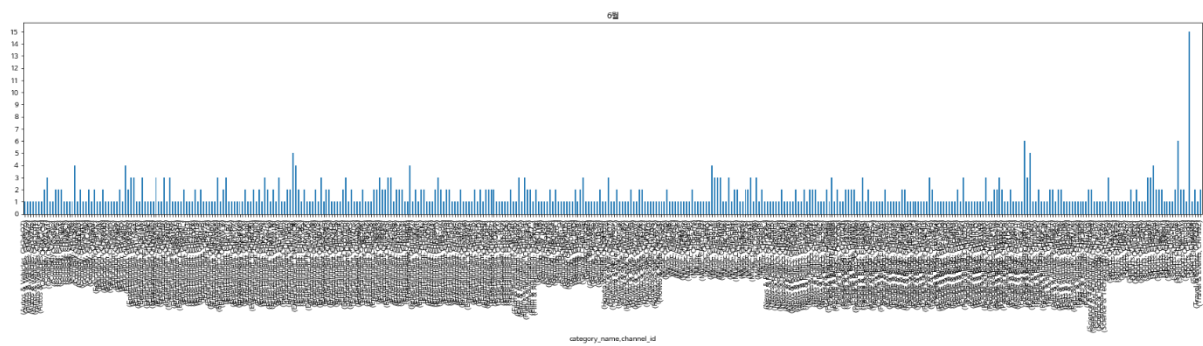
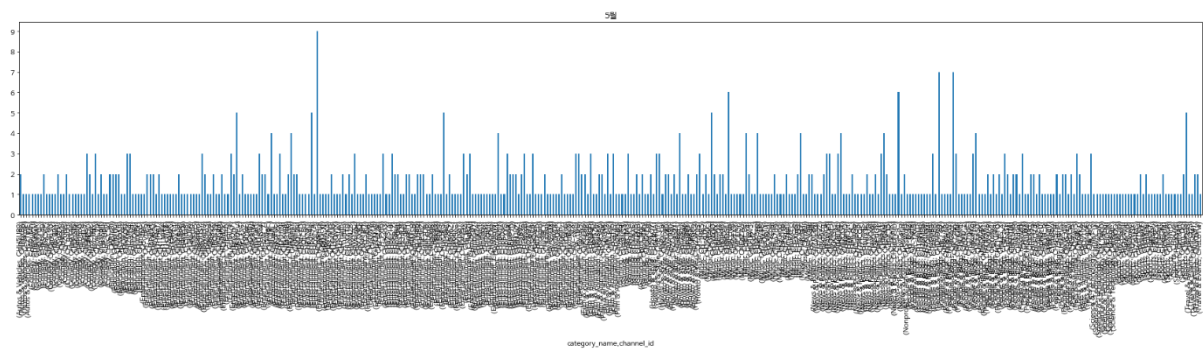
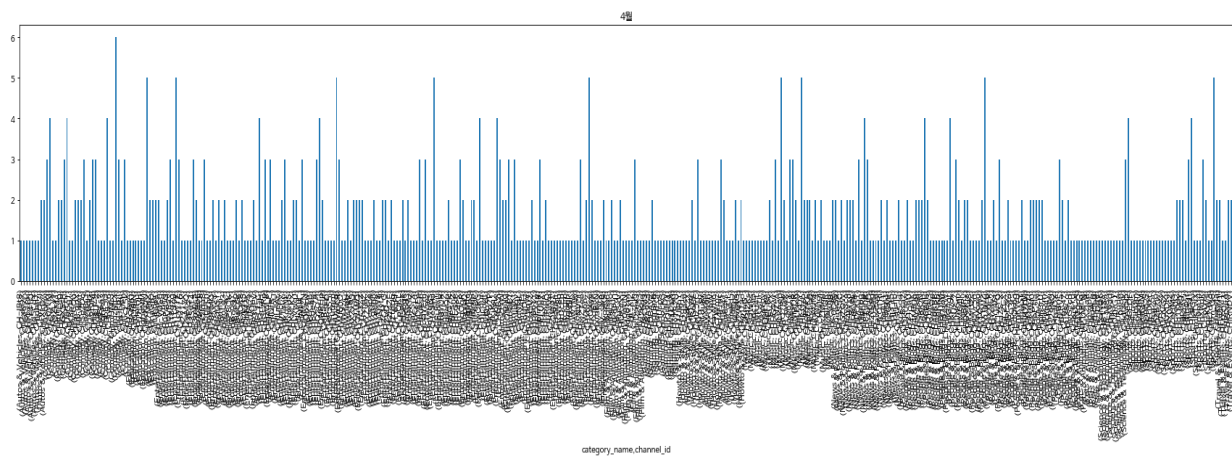
비디오를 인기 동영상 기준에 부합하도록 분류할수 있는 새로운 지표를 개발하고 이 지표를 사용하여 engagement 와 어떤 상관관계가 있는지 설명하시오.

Q1 - 1. 전체기간 카테고리->채널->비디오 개수

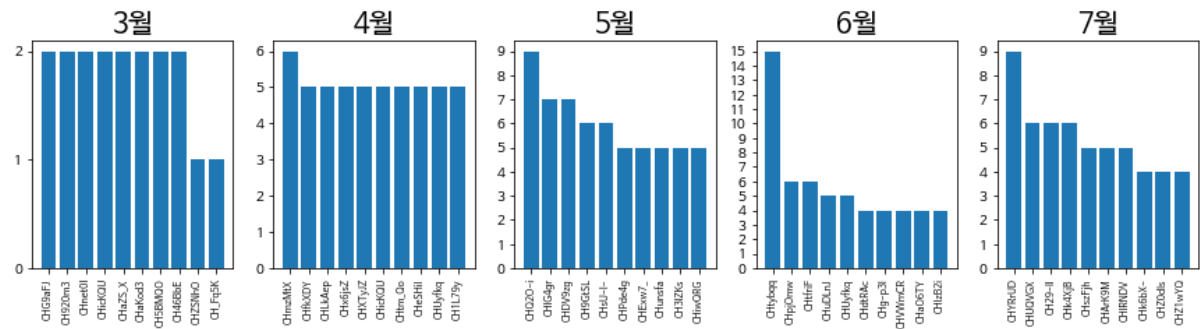


Q1 - 2 월별 카테고리->채널->비디오 개수

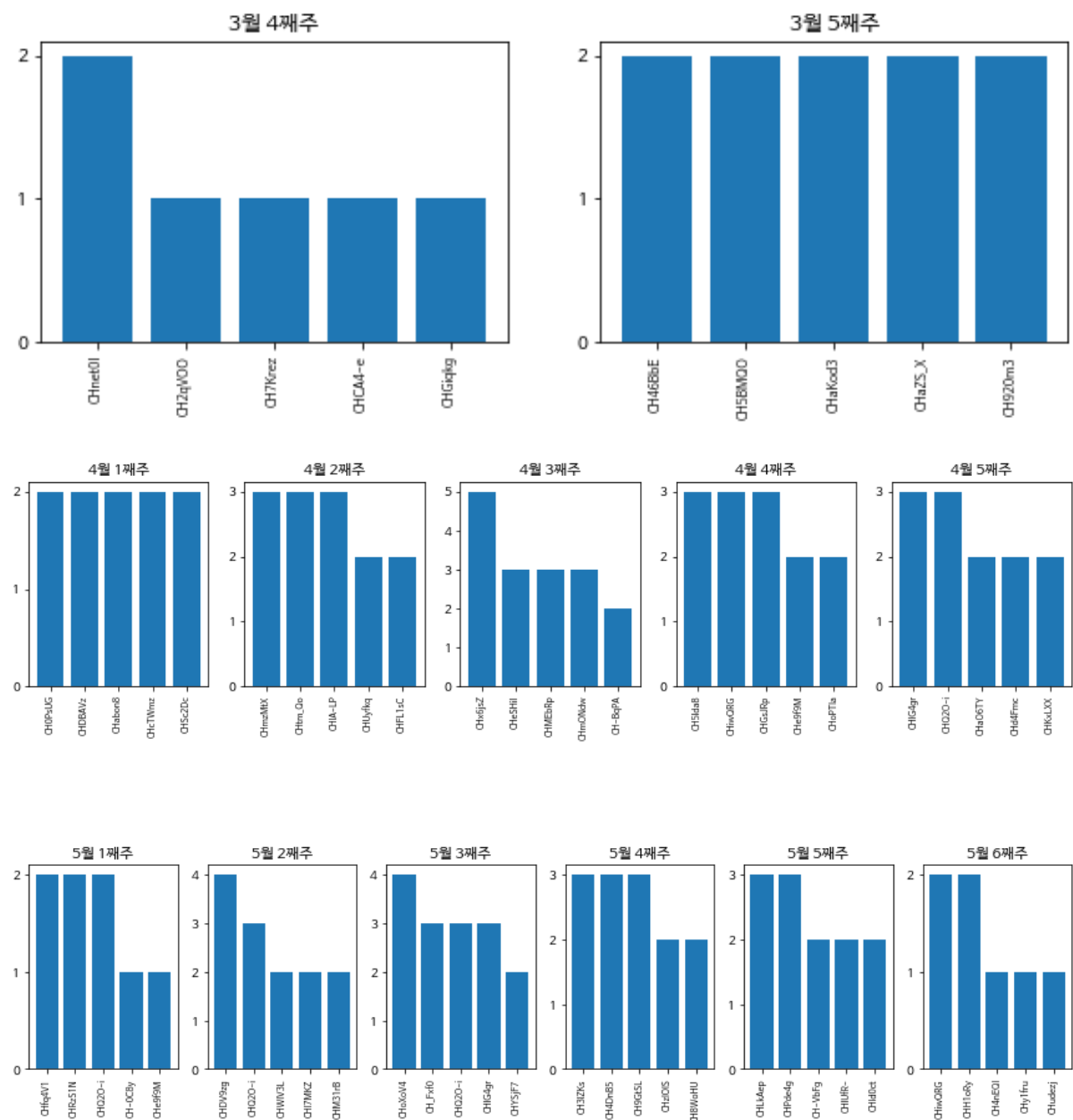


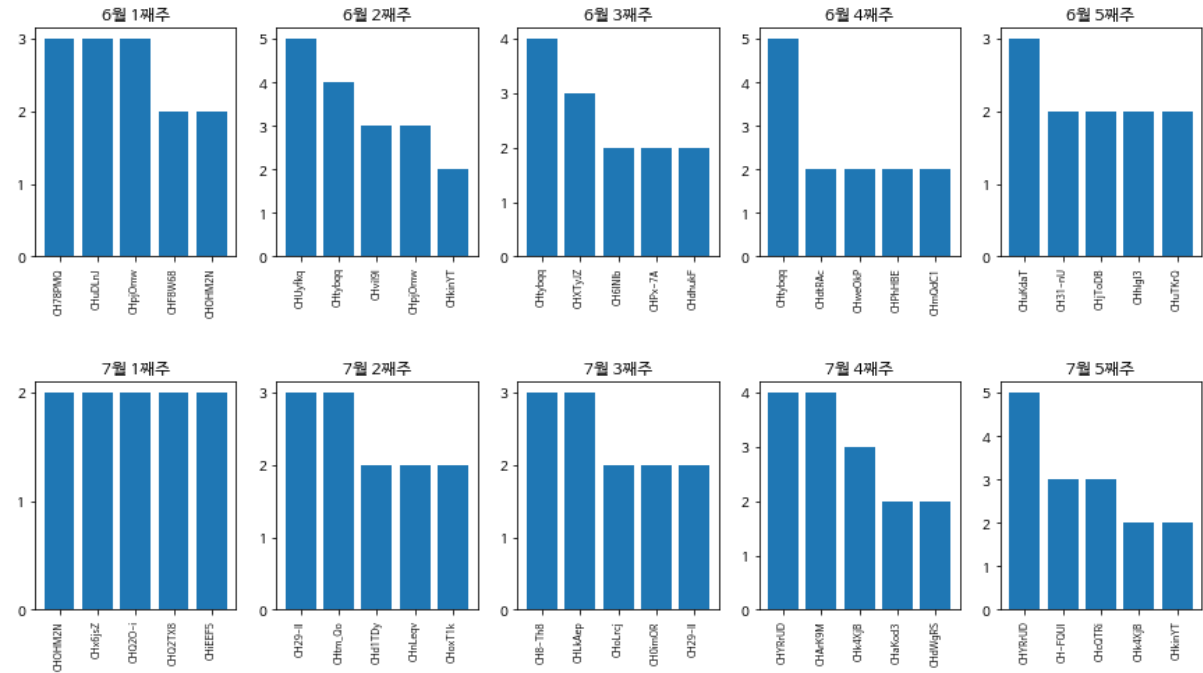


Q1 - 3 월별 TOP10 채널 (분류 기준은 비디오 개수)



Q1 - 4 주별 TOP5 채널 (분류 기준은 비디오 개수)





Q1 - 5 월별 카테고리별 태그 키워드 순위

(너무 많기 때문에 상위 10개 태그만 나타냄)

3월

Entertainment - [(‘유재석’, 4), (‘KBS’, 4), (‘아이유’, 3), (‘kbs’, 3), (‘eng’, 3), (‘idol’, 3), (‘물카’, 3), (‘리얼락’, 2), (‘IU’, 2), (‘LILAC’, 2)]
 People & Blogs - [(‘강철부대’, 2), (‘특수부대’, 2), (‘육군특수전사령부’, 2), (‘특전사’, 2), (‘UOT해군특수전전단’, 2), (‘UOT’, 2), (‘제707특수임무단’, 2), (‘707’, 2), (‘대테러 부대’, 2), (‘해병대’
 News & Politics - [(‘박승홍’, 4), (‘출연료’, 2), (‘MBN’, 1), (‘유희정’, 2), (‘다홍이’, 1), (‘오열’, 1), (‘다홍이’, 1), (‘뉴스파이터’, 1), (‘김영준영커’, 1), (‘SNS’, 1), (‘가죽’, 1)]
 Comedy - [(‘물카’, 3), (‘개방정’, 2), (‘미녀’, 2), (‘개그맨’, 2), (‘웃긴영상’, 2), (‘시트콤’, 2), (‘정승민’, 1), (‘조장남’, 1), (‘존예녀’, 1), (‘디스코’, 1)]
 Education - [(‘조승연’, 1), (‘조승연의 탐구생활’, 1), (‘조승연작가’, 1), (‘조승연 작가’, 1), (‘럭키’, 1), (‘럭키 인디야’, 1), (‘럭키인디야’, 1), (‘럭키 인디야 레스토랑’, 1), (‘조승연 럭키’, 1), (‘Howto & Style - [(‘사나고’, 1), (‘30원’, 1), (‘30pen’, 1), (‘만들기’, 1), (‘making’, 1), (‘3d프린터’, 1), (‘3dprinting’, 1), (‘계란부침’, 1), (‘계란부침 만들기’, 1), (‘계란부침 레시피’, 1)]
 Music - [(‘music’, 2), (‘아이돌’, 2), (‘BAEKHYUN’, 1), (‘Bambi - The 3rd Mini Album’, 1), (‘Bambi’, 1), (‘딩고뮤직’, 1), (‘dingo’, 1), (‘dingomusic’, 1), (‘kpop’, 1), (‘live’, 1)]
 Sports - [(‘골프’, 1), (‘골프레슨’, 1), (‘golf’, 1), (‘golf lesson’, 1), (‘드라이버’, 1), (‘아이언’, 1), (‘골프맨’, 1), (‘조운성프로’, 1), (‘골프스윙’, 1), (‘버거’, 1)]
 Science & Technology - [(‘YTN사이언스’, 1), (‘사이언스투데이’, 1), (‘과학’, 1), (‘뉴스’, 1), (‘사이언스TV’, 1)]
 Gaming - [(‘리그오브레전드’, 1), (‘리그 오브 레전드’, 1), (‘LoL’, 1), (‘Leagueoflegends’, 1), (‘League of Legends’, 1), (‘리엇 게임즈’, 1)]
 Pets & Animals - [(‘고양이’, 2), (‘cat’, 2), (‘하하하’, 1), (‘hahaha’, 1), (‘haha ha’, 1), (‘하하 하’, 1), (‘무’, 1), (‘Mu’, 1), (‘강아지’, 1), (‘puppy’, 1)]
 Film & Animation - [(‘고민론’, 1), (‘사연론’, 1), (‘썰론’, 1), (‘사이다론’, 1), (‘영상론’, 1), (‘animation’, 1), (‘animations’, 1), (‘Cartoon’, 1), (‘korean animation’, 1), (‘comics’, 1)]

4월

Entertainment - [(‘예능’, 24), (‘먹방’, 22), (‘브레이브걸스’, 20), (‘플린’, 19), (‘유재석’, 18), (‘복걸’, 17), (‘유나’, 17), (‘유정’, 16), (‘민영’, 16), (‘은지’, 15)]
 People & Blogs - [(‘먹방’, 14), (‘브이로그’, 10), (‘vlog’, 9), (‘korean’, 7), (‘맛집’, 7), (‘mukbang’, 6), (‘요리’, 6), (‘중소기업드라마’, 4), (‘streetfood’, 4), (‘korean street food’, 4)]
 Sports - [(‘손흥민’, 11), (‘토너먼트’, 10), (‘축구’, 7), (‘스포츠비’, 6), (‘SPOTV’, 6), (‘팬유’, 5), (‘무리뉴’, 5), (‘하이라이트’, 5), (‘큐현진’, 5), (‘토티’, 5)]
 Comedy - [(‘물카’, 12), (‘물레카메라’, 8), (‘개그맨’, 6), (‘레전드’, 6), (‘웃소’, 6), (‘보물섬’, 5), (‘장난’, 5), (‘prank’, 5), (‘풍채놀이’, 5), (‘웃긴영상’, 5)]
 Music - [(‘SEVENTEEN’, 8), (‘BTS’, 8), (‘세븐틴’, 7), (‘방탄소년단’, 6), (‘BANGTAN’, 6), (‘HIPHOP’, 5), (‘알림’, 5), (‘RM’, 5), (‘슈가’, 5)]
 Howto & Style - [(‘사나고’, 4), (‘만들기’, 4), (‘3D펜’, 3), (‘3Dpen’, 3), (‘making’, 3), (‘3d프린터’, 3), (‘3dprinting’, 3), (‘계란’, 2), (‘달걀’, 2), (‘계란만드는법’, 2)]
 Film & Animation - [(‘만화’, 4), (‘더빙’, 4), (‘영상론’, 3), (‘팔론’, 3), (‘애니메이션’, 3), (‘빙론’, 3), (‘yt:occon’, 3), (‘사연론’, 2)]
 News & Politics - [(‘뉴스’, 8), (‘news’, 5), (‘중식’, 5), (‘ET’, 5), (‘준여경’, 4), (‘News Network’, 4), (‘SBS VIDEOMUG’, 4), (‘VIDEOMUG’, 4), (‘비디오머그’, 4), (‘KBS’, 4)]
 Gaming - [(‘리그오브레전드’, 4), (‘먹방’, 3), (‘알론’, 2), (‘플’, 2), (‘괴물워’, 2), (‘원랑’, 2), (‘트위터’, 2), (‘넷마블’, 1), (‘모바일’, 1), (‘게임’, 1)]
 Pets & Animals - [(‘브이로그’, 4), (‘일상’, 4), (‘애니멀’, 1), (‘애니멀박’, 1), (‘동물농장’, 1), (‘TV동물농장’, 1), (‘동물농장 애니멀박’, 1), (‘sbs animal farm’, 1), (‘Education - [(‘주식’, 3), (‘투자’, 3), (‘아이템’, 2), (‘아이템의인벤토리’, 2), (‘드림’, 2), (‘유래’, 2), (‘어디서’, 2), (‘재테크’, 2), (‘카카오’, 2), (‘삼성전자’, 2)]
 Travel & Events - [(‘배트스’, 2), (‘국제커피’, 2), (‘에티오피아’, 2), (‘에티오피아 여행’, 2), (‘아프리카 여행’, 2), (‘팔리핀’, 2), (‘세부’, 2), (‘먹방’, 2), (‘여행’, 2), (‘꾸미안’, 1)]
 Autos & Vehicles - [(‘K8’, 5), (‘자동차’, 4), (‘기아’, 4), (‘기아’, 4), (‘시승기’, 4), (‘Kia’, 2), (‘기아K8’, 2), (‘K7’, 2), (‘비런내PD’, 2), (‘술집’, 2)]
 Science & Technology - [(‘아이맥’, 4), (‘애플’, 4), (‘Apple’, 3), (‘에어태그’, 3), (‘아이패드 프로 5세대’, 3), (‘Apple Event’, 2), (‘iMac’, 2), (‘아이패드’, 2), (‘아이패드프로’, 2), (‘아이패드프로’

5월

Science & Technology - [(‘애플’, 3), (‘shorts’, 2), (‘아이맥’, 2), (‘apple’, 2), (‘아이패드 프로 12.9’, 2), (‘귀상어’, 1), (‘머리’, 1), (‘상어’, 1), (‘진화’, 1), (‘부력’, 1)]
 Entertainment - [(‘tvN’, 19), (‘먹방’, 16), (‘방탄소년단’, 14), (‘피오’, 12), (‘패션’, 11), (‘라면’, 11), (‘이수근’, 11), (‘BTS’, 10), (‘불면워하니’, 10), (‘LIPD’, 10)]
 Howto & Style - [(‘요리’, 4), (‘간단요리’, 3), (‘양배추’, 3), (‘굴림’, 3), (‘쉬운요리’, 3), (‘초보요리’, 3), (‘할계해오 맛나요리’, 3), (‘한식’, 3), (‘간단한 요리’, 2), (‘하체비만’, 2)]
 News & Politics - [(‘뉴스’, 20), (‘손정민’, 13), (‘의대생’, 7), (‘CCTV’, 6), (‘코로나19’, 6), (‘JTBC’, 6), (‘JTBC NEWS’, 6), (‘뉴스룸’, 6), (‘순석희’, 6), (‘newsroom’, 6)]
 Gaming - [(‘먹방’, 5), (‘웃긴’, 4), (‘재밌는’, 4), (‘아프리카TV’, 3), (‘해남’, 3), (‘빙맛’, 3), (‘배틀그라운드’, 3), (‘취한무드’, 2), (‘취무드’, 2), (‘취한무드들’, 2)]
 Music - [(‘BTS’, 15), (‘방탄소년단’, 13), (‘aespa’, 11), (‘BANGTAN’, 10), (‘음악’, 9), (‘라이브’, 9), (‘에스파’, 9), (‘kpop’, 7), (‘아이돌’, 7), (‘방탄’, 7)]
 Comedy - [(‘물카’, 10), (‘피식대학’, 5), (‘미녀’, 5), (‘개그맨’, 5), (‘더빙’, 5), (‘참교육’, 5), (‘개방정’, 4), (‘웃긴영상’, 4), (‘물레카메라’, 4), (‘핫소’, 4)]
 Sports - [(‘메이저리그’, 6), (‘큐현진’, 6), (‘토티’, 6), (‘토티볼투게이스’, 6), (‘nib’, 5), (‘조미에’, 5), (‘블루제이스’, 5), (‘조미에의 MLB현장’, 5), (‘축구’, 4), (‘팬시티’, 4)]
 Film & Animation - [(‘영상론’, 6), (‘썰론’, 5), (‘애니메이션’, 4), (‘애니멀박’, 4), (‘동물농장’, 3), (‘일상’, 3), (‘마블’, 3), (‘마블 영화’, 3), (‘플래워도’, 3), (‘팔론’, 3), (‘만화’, 3)]
 Pets & Animals - [(‘animalis’, 6), (‘animal farm’, 6), (‘애니멀박’, 6), (‘동물농장’, 3), (‘동물영상’, 3), (‘강아지’, 4), (‘cute dogs’, 4), (‘진솔스’, 3), (‘jinsols’, 3), (‘jinsols’, 3)]
 People & Blogs - [(‘먹방’, 16), (‘미녀게임’, 6), (‘mukbang’, 6), (‘진솔진’, 5), (‘핫소’, 5), (‘브이로그’, 5), (‘복발’, 4), (‘히말’, 4), (‘요리왕’, 4), (‘송이’, 4)]
 Education - [(‘북지정보’, 2), (‘유용한정보’, 2), (‘한시생계지원금’, 2), (‘아이템’, 1), (‘아이템의인벤토리’, 1), (‘드림’, 1), (‘유래’, 1), (‘어디서’, 1), (‘알테니스’, 1), (‘폴메로빙’, 1)]
 Autos & Vehicles - [(‘한문월’, 3), (‘블랙박스’, 3), (‘과실비율’, 2), (‘및대’, 2), (‘사고’, 2), (‘교통사고’, 2), (‘영상’, 2), (‘블랙’, 2), (‘블랙박스’, 2), (‘블랙박스 본 세상’, 2)]
 Travel & Events - [(‘길거리음식’, 2), (‘맛집’, 2), (‘한국 길거리음식’, 2), (‘shorts’, 2), (‘kaffie’, 2), (‘street food’, 2), (‘korean street food’, 2), (‘EBS’, 2), (‘해외여행’, 2), (‘관광’, 2)]
 Nonprofits & Activism - [(‘불교’, 1), (‘죽문죽실’, 1), (‘법문스님’, 1), (‘정호희’, 1), (‘buddha’, 1), (‘buddhism’, 1), (‘pomyun’, 1), (‘스님의주제사’, 1), (‘엄마수업’, 1), (‘개돌음’, 1)]

6월

Entertainment - [['먹방', 28], ('예능', 20), ('레전드', 15), ('SBS', 15), ('유재석', 13), ('kpop', 12), ('개그', 11), ('아이돌', 10), ('하하', 10), ('mukbang', 10)]
Sports - [['축구', 30], ('손흥민', 25), ('football', 16), ('유로', 16), ('이동국', 16), ('EURO', 15), ('EURO2020', 15), ('tvn', 15), ('xtvn', 15), ('메시', 15)]
Music - [['음악', 7], ('트와이스', 7), ('kpop', 6), ('TWICE', 6), ('dingo', 5), ('딩고', 5), ('알콜프리', 5), ('Brave Girls', 4), ('브레이브걸스', 4), ('KPOP', 4)]
People & Blogs - [['먹방', 15], ('보이로그', 12), ('맛집', 9), ('일상', 8), ('vlog', 7), ('mukbang', 7), ('이과장', 6), ('중남괴', 6), ('중술소', 6), ('중소기업', 6)]
Pets & Animals - [['고양이', 6], ('강아지', 5), ('pet', 3), ('아리랑', 3), ('포메라니안', 3), ('동물', 3), ('cat', 3), ('Shorts', 2), ('shorts', 2), ('dog video', 2)]
Travel & Events - [['캠핑카', 2], ('캠핑', 2), ('카라반', 2), ('모터홈', 2), ('차박', 1), ('농막', 1), ('이동주택', 1), ('트럭캠핑', 1), ('캠퍼', 1), ('종교캠핑카', 1)]
Science & Technology - [['Apple', 1], ('Apple Event', 1), ('Apple Keynote', 1), ('Apple Special Event', 1), ('Apple WWDC', 1), ('June', 1), ('Developers', 1), ('World Wide Developers Conference', 1)]
Howto & Style - [['한식', 4], ('일반찬', 4), ('반찬', 3), ('영자씨의 부엌', 3), ('Korean recipes', 3), ('Korean mom', 3), ('K-food', 3), ('Korean style food', 3), ('banchan', 3), ('자취음식', 3)]
Gaming - [['포나플', 7], ('프라이데이 나이트 펑킨', 7), ('fnf', 6), ('friday night funkin', 6), ('포나플', 5), ('프라이데이 나이트 펑킨', 4), ('모바일게임', 4), ('friday night funkin', 3), ('Film & Animation - [['병맛더빙', 5], ('만화', 5), ('더빙', 5), ('웃긴영상', 3), ('웃소리', 3), ('병맛애니', 3), ('웃긴만화', 3), ('웃음', 3), ('불만한애니', 3), ('재밌는애니', 3)]
Comedy - [['반응', 6], ('러먼', 6), ('불당복음전', 5), ('Korean', 4), ('영국남자', 4), ('영국', 4), ('조쉬', 4), ('올리', 4), ('Josh', 4), ('illie', 4)]
Education - [['아이템', 3], ('아이템의인벤토리', 3), ('드림', 3), ('유래', 3), ('어디서', 3), ('조승연', 2), ('조승연의 탐구생활', 2), ('조승연 작가', 2), ('과학실험', 2), ('건나물TV', 2)]
News & Politics - [['뉴스', 7], ('MBC뉴스', 3), ('뉴스데스크', 3), ('뉴스투데이', 3), ('news', 3), ('경향', 3), ('News Network', 3), ('광주', 3), ('KBS', 2), ('인터뷰', 2)]
Autos & Vehicles - [['자동차', 3], ('자동차꿀팁', 2), ('운전', 2), ('초보운전', 2), ('기아', 2), ('자동차리뷰', 1), ('꿀팁', 1), ('변형', 1), ('방어운전', 1), ('안전운전', 1)]

7월

Entertainment - [['유재석', 19], ('예능', 17), ('SBS', 14), ('현남맨', 13), ('먹방', 12), ('레전드', 11), ('kpop', 10), ('하하', 10), ('tvN', 9), ('Diggle', 8)]
Sports - [['도쿄올림픽', 22], ('올림픽', 14), ('스포츠', 14), ('SPOTV', 8), ('스포티비', 8), ('축구', 8), ('이강인', 8), ('KBS', 8), ('금메달', 7), ('김제덕', 7)]
Music - [['BTS', 10], ('방탄소년단', 7), ('알엠', 4), ('RM', 4), ('지민', 4), ('정국', 4), ('JIN', 4), ('AKMU', 4), ('NEXT EPISODE', 4), ('mv', 4)]
Howto & Style - [['반찬', 8], ('요리', 8), ('한식', 7), ('레시피', 6), ('간단요리', 4), ('recipe', 4), ('만들기', 4), ('함께해요 맛나요리', 3), ('사나고', 3), ('간식', 3)]
People & Blogs - [['먹방', 14], ('보이로그', 12), ('vlog', 9), ('국제커플', 5), ('자취', 5), ('mukbang', 5), ('일상', 5), ('real sound', 4), ('리얼사운드', 4), ('배달행', 4)]
Education - [['사물궁이', 3], ('호기심', 3), ('궁금증', 3), ('잡학', 3), ('지식', 3), ('과학', 2), ('매일경제', 1), ('부동산', 1), ('매부리TV', 1), ('채테크', 1)]
Pets & Animals - [['cat', 10], ('냥줍', 7), ('고양이', 6), ('새끼 길고양이', 6), ('chat', 6), ('alley cat', 6), ('dog', 5), ('포메라니안', 5), ('매달남', 5), ('매달남 고양이', 5)]
Comedy - [['어플어스애니', 4], ('어플어스애니메이션', 4), ('among us animation', 4), ('우스', 4), ('콘대화', 3), ('김대희', 3), ('법복자', 3), ('강동민', 3), ('신동진', 3), ('유세운', 3)]
Science & Technology - [['unboxing', 2], ('해부', 2), ('4K', 1), ('4K 모니터', 1), ('주연테크', 1), ('가성비 모니터', 1), ('갯성비', 1), ('4K 모니터 입문용', 1), ('입문용', 1), ('언박싱', 1)]
News & Politics - [['뉴스', 10], ('도쿄올림픽', 10), ('올림픽', 6), ('news', 4), ('News Network', 4), ('영상', 3), ('SBS', 3), ('SBS NEWS', 3), ('에스비에스', 3), ('특파원보고 세계는 지금', 3)]
Gaming - [['게임', 4], ('먹방', 4), ('해만', 3), ('마인크래프트', 3), ('kbs', 2), ('KBS', 2), ('kbs esports', 2), ('esports kbs', 2), ('이스포츠', 2), ('이스포츠 게이미베스', 2)]
Travel & Events - [['러시아 여행', 4], ('러시아', 3), ('모스크바 여행', 2), ('세계여행', 2), ('러시아 백신', 1), ('러시아 백신 후기', 1), ('스푸르니크', 1), ('여행유튜버', 1), ('모스크바', 1), ('Film & Animation - [['만화', 10], ('애니메이션', 9), ('별맛더빙', 7), ('더빙', 7), ('웹툰', 6), ('활론', 5), ('별맛', 5), ('yt:cc-on', 5), ('animation', 4), ('ㅋㅋ', 3)]
Autos & Vehicles - [['자동차', 4], ('리뷰', 2), ('시승기', 2), ('벤츠', 2), ('벤츠투닝', 2), ('중고차관리', 2), ('수입차정비', 2), ('벤츠 가솔린', 2), ('수입차수리', 2), ('메르세데스', 2)]

Q2

Youtube의 인기 급상승 동영상 순위를 결정하는 요소중 몇 개가

- 조회수

- 동영상 조회수 증가 속도(즉, '온도')

- YouTube 외부를 포함하여 조회수가 발생하는 소스

- 동영상 업로드 기간

- 해당 동영상을 같은 채널에 최근 업로드한 다른 동영상과 비교한 결과

라고 합니다.

출처 : <https://support.google.com/youtube/answer/7239739?hl=ko>

rank1 : 총 조회수

rank2 : published_date(영상이 유튜브에 업로드된 날짜)부터 on_trending_date(인기 동영상에서 처음 포착된 날짜)사이의 받은 하루당 조회수

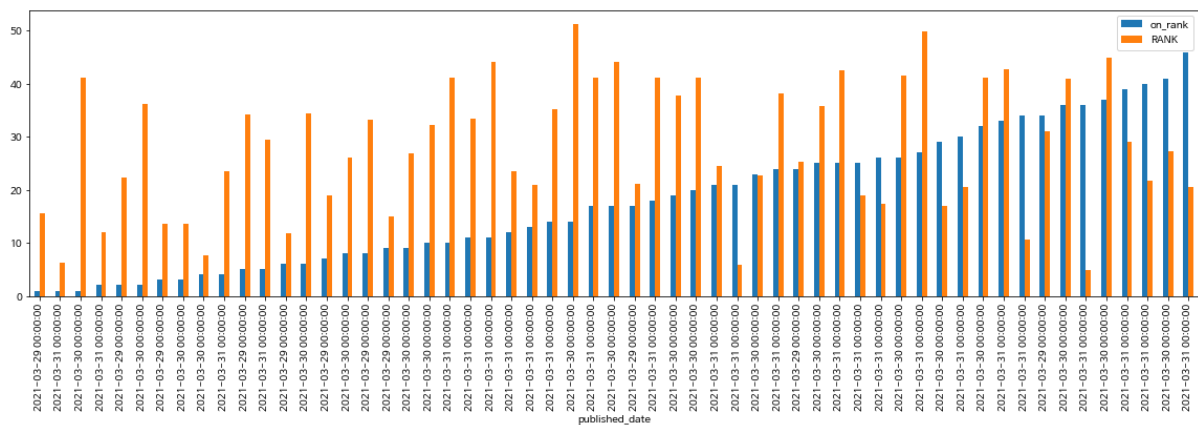
rank3 : 구독자수에 따른 조회수

rank4 : 하루당 좋아요 + 싫어요 수

RANK : rank1 + rank2 + rank3 + rank4

저는 이 4가지의 지표를 만들고 월별 주별 순위로 매겨서 4가지 지표의 순위의 평균으로 새로운 순위를 만들어 봤습니다.

예시로 3월 4째주의 인기 동영상 순위(on_rank)와 제가 만든 지표인 (RANK)의 그래프입니다.



따라서 유튜브 홈페이지에 있는 5가지 요소 외에 다른 여러가지 요소들도 고려를 해야
실제 on_rank와 비슷한 지표가 나올 것이라 생각합니다.